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THE
NAUTICAL MAGAZINE.

THE
NAUTICAL MAGAZINE,

AND

Naval Chronicle,

FOR 1847.

A JOURNAL OF PAPERS

ON SUBJECTS CONNECTED WITH

MARITIME AFFAIRS.



LONDON:

SIMPKIN, MARSHALL, AND CO.,

STATIONERS' HALL COURT

LONDON:
HUNT, PRINTER,
3, NEW CHURCH STREET
EDGWARE ROAD.

CONTENTS TO VOLUME FOR 1847.

ENLARGED SERIES.

- Abolition of the light dues, 19, 87.
Account of an Exploring Expedition to the south-west of Nelson, 304.
338, 398.
Account of the arc of longitude between Greenwich and Valencia, 282.
Admiralty order, 599.
American steamers and Rodger's anchors, 238.
Amphitrite and Trincomalee, 644.
An account of fine dust, which often falls on vessels in the Atlantic Ocean, 80.
Anti-shipwreck league, 203.
Arctic expedition, 93.
Are the planets inhabited? 606.
Arguin and its victims, 42.
Armament of the royal navy, 665.
Atmospheric dust, 353.
Atmospheric railways, and steam navigation, 240, 294, 319.
Aurora Borealis, 642.
Australian steam extension, 542.
Auto-biographical sketches, 27, 73, 121, 191, 252, 355, 529.
A trip to Chang-Chau, 402.
Bankok, Cape Town, 215
Barrier reef of Australia, 540.
Barometer, 36.
Battle of Trafalgar, 614.
Beagle's voyage, 287
Births, marriages, and deaths, 56, 108, 164, 223, 277, 336, 392, 445, 500,
559, 616, 687.
Borneo Pirates, 259.
Bottle papers, 422, 499, 598.
British navy in commission, 608.
Carinata passage, and eastern route to Singapore, 169.
Charts of the sea of Marmora, 161.
Charts inaccuracies of, 672
Chat about the winds, 526, 569.
China.—An order for the prevention of Piracy, 455.
Chinese junk arrested for debt, 604.
Cinque ports, and their localities, 178, 233, 299, 343.
Com. Barnett's observations on the variation of the needle at Bermuda, 273.
Com. Becher's artificial horizon, 419.
Composition for ship's bottom, 600.
Communications with the Brazils, 112,
Conservancy of the Thames, 146, 347.
Contraction of the whirlwind, 377.
Courts-martial, 432 .
Crossing the Equator, 580.
Cutting through the Isthmus of Suez, 670.

- Description of the improved pocket sextant, 303.
 Discovery in Australia, 391.
 Drifting wrecks, 49.
 Effects of the winds on the tides at Ramsgate, 65.
 Egyptian frigate at Spithead, 604.
 Emigrants from the South Sea Islands, 663.
 Error in the longitude of the North Cape of Europe, 674.
 Estuary of the river Exe, 131, 195.
 Examination of masters and mates, in the merchant service, 148, 208, 362, 481, 553, 609, 681.
 Explosion from fire-damp, 36.
 Extracts from the remarks of H.M.S. North Star, 1, 84.
 Extraordinary phenomenon, 384.
 Extraordinary magnetic disturbance, 600.
 Female intrepidity, 384.
 Gallantry, 154.
 Gallant and intrepid conduct of a midshipman, 110.
 Generous conduct of French seamen, 136.
 Geodetical operations, 271.
 Geology of Torres Strait, 648.
 Geographical discoveries, 315.
 Gratifying testimonial, 111.
 Great Britain steam-ship, 89, 526.
 Great circle sailing, 139, 228, 337.
 Great Circle, position on the arc of, 660.
 Harbour of Refuge, 136.
 H.M.S. Fisgard struck by lightning, 205.
 H.M.S. Herald, surveying in the Pacific, 217.
 H.M.S. Mastiff, 547.
 H.M. steam-yacht Undine, 385.
 Humanity of British seamen, 94.
 Hurricane at the Havanah, 216.
 Hypothesis of the earth's rotary motion, 393, 452.
 Illustrated geography, 424.
 Important to seamen.—The Gauntlet, 598.
 Important communication, 614.
 Incrustation of steam-boilers, 151.
 Labuan and Borneo; engagement between H.M.S. Nemesis, and the Borneo Pirates, 602.
 Lately discovered volcano in Victoria land towards the South Pole, 605.
 Life-boats and buoys for sea-going vessels and steamers, 93.
 Longitude of New York, by magnetic telegraph, 544.
 Loss of the Cleopatra, 601.
 Loss of the Exmouth, 324.
 Loss of H.M. Sloop, Sphynx, 91.
 Loss of the Sirius, 102, 217.
 Loss of the Tweed, 523.
 Maccassar, a free port, 41.
 Magnetic variation, 346.
 Maritime lights on the coast of Spain, 561.
 Medals for her majesty's navy, 369.
 Memorandum relative to the emigration of coolies and transport of troops from India, 213.

- Merchant seaman's act, 607.
 Meteorological register, 111, 112, 168, 224, 280, 336, 388, 392, 448, 504, 560
 616, 688.
 Mirage at Ramsgate, 457.
 Murder of the captain and part of the crew of an English vessel, 541.
 Nantucket, new south shoals, 273,
 Nautical notices, 37, 96, 155, 204, 260, 319, 374, 420, 471, 492, 549, 593,
 672.
 Naval engineers, 429.
 Naval sketches,—Sir F. Drake, and Capt. Cook, 650
 New charts, 106, 220, 332, 388, 447, 508, 553, 680.
 New Trans-Atlantic steam-ship, 270
 North Australia, 419.
 North-west coast of Australia, 414.
 Notes on East India Islands, 57.
 Notes on the harbours of the south-east coast of England, 9.
 Number of officers on the list of the royal navy, 218.
 Observations on the phenomena of terrestrial refraction, 67
 Observations on making the passage to the eastward, through Torres Straits,
 and the monsoon in the Timour Sea, 113.
 Patent compressure steering wheel to prevent accidents to the helmsman, and
 to secure the rudder against violence, 591
 Performance of H.M.S. Inflexible, 372.
 Phenomenon in Mount's Bay, 384.
 Piracy at the mouth of the Dardanelles, 42.
 Piracy near Smyrna, 272.
 Plan of a temporary rudder, 258.
 Positions of the arc of a great circle, 660.
 Port Elizabeth.—The Thunderbolt, 605.
 Port of Havre, tide signals, 95.
 Port Royal and its associations, 15.
 Pre-adamite monsters of the deep, 480.
 Princely present to Admiral Sir Charles Ogle, 545.
 Problems for navigators, 647.
 Progress of discovery in central Africa, 539.
 Promotions and appointments, 52, 106, 163, 200, 277, 335, 391, 445, 500,
 558, 615, 687.
 Proposed new armament for the English steam navy, 424.
 Provisions for tropical climates, 383.
 Queen Adelaide's college for the widows of officers of the royal navy, 491.
 Recent volcano in the Red Sea, 314.
 Recovery of the Sphynx steam sloop, 200.
 Remarks on Aden, 246.
 Remarks on making land about Valparaiso, 281.
 Remarks on the coast of New Zealand, 459, 514.
 Remarkable feat of navigation, 270.
 Removal of the Lady Feversham, 34,
 Report of Mons. De Castelnau, to the French government, on the river
 Amazon, 629.
 Results of experiments made with the Fumific impeller, 183, 409.
 Rhodes signals, 373.
 Rodger's anchor, 162.
 Route from Singapore to Sydney, 40.
 Royal Humane Society, 271.

- Royal naval female school, 306.
 Sailing directions for the north Channel into Moreton Bay, 578.
 Sailing directions for entering the river Kenmare, 199.
 Samana, St. Domingo, 450.
 Scale of medicines for the merchant service, 103.
 Shipping returns 273.
 Ships and vessels burnt and destroyed. 583, 634.
 Shipwrecked fishermen and mariners benevolent society, 94, 370.
 Singular phenomenon in the Black Sea, 385.
 Sir Thomas Maitland and party of explorers, 373.
 Spain and her dream.—Events as they were and are, 288.
 Spontaneous combustion; or ignition by accident on board steamers and other ships, 505.
 Society Islands, South Pacific, 646.
 Solution of the problem (in vol. 1846,) 546.
 Solution of problem for Navigators, 647.
 Stations of H.M. ships in commission, 45, 98, 437.
 Steam to Australia, 544.
 Steam from Singapore to Sydney, 78.
 Stores of guano on the Chin-cha Islands, Peru, 119.
 Successful result of the Hudson Bay company's arctic expedition, 617.
 Suffocation and murder of Chinese emigrants on board the *Sophia Fraser*, 209.
 Surgeons in the American navy, 270.
 Survey of the Bristol Channel, 638.
 Table showing the hourly velocity of the wind, in miles and rain in inches, 54, 109, 166, 222, 278, 333, 389, 446, 502, 557, 685.
 Temporary rudder and circular storms, 86.
 Thames conservancy, 146, 347.
 The double sextant, 385.
 The *Helda*, or great North Holland canal, 581.
 The Leighwater steam-engine, 153.
 The Kii Islands, 226.
 The master of a British merchant ship, and his examiners. 70.
 The navy of the twelfth century, 313.
 The ship *Trimmer*, 90.
 To clean gold epaulettes, &c., 558.
 Tonnage of H.M. ships, 218.
 Treasures of the deep, 545.
 Typhoon in the China Sea, 12.
 Unknown rock, 568.
 Volcanic eruption at the Friendly Islands, 270.
 Want of a light at Barbadoes, 256.
 Waterloo Bay, 117, 172.
 Waterspout at Morescombe Bay, 479.
 Waterspout, 154.
 Western Australia, 374.
 Whale fishing projects, 215.
 Whalers in the Pacific. 127, 241.
 Windward great circle sailing, 359.
 Wrecks of British shipping, 44, 95, 269, 325, 388, 503.
 Wreck of the *Thunderbolt* steam sloop. 308.
 Wreck of the *Lord Wenlock*, 669.
 Yachting intelligence, 600, 662.
 Yacht Club, Royal Mersey; 662.

THE
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AND

Naval Chronicle.

JANUARY, 1847.

EXTRACTS FROM THE REMARKS OF H.M.S. NORTH STAR.
Capt. Sir E. Home, Bart.,—From Chusan to Port Essington.

On the 9th of January, the *North Star* left Chusan, being bound to Singapore, Port Essington, and Sydney.

On the 12th, she was off the north point of the Island of Formosa, and, on the 15th, the rock called Pedro Branco, where fleets of fishing-boats were passed, and, on the 16th of January, anchored at Hong-kong. The winds, during the passage, had been for the first three days from N.W. round by N. to N.E., E., and S.E.b.E.; on the 12th, North, N.N.W., W.S.W., S.b.E., and calm; on the two following days, they were N.E. and E.S.E.; and on the 15th and 16th, E.N.E., N.N.W., N.N.E., and N.E., the weather all the time fine, the breezes moderate in the day, falling light towards evening.

At Hong-kong, the dip of the needle was repeated at the record office, in the verandah; and, on the 21st, with two mountain barometers by Ramsden, I measured the height of the highest peak overhanging the harbour. The result was:—at the foot, the thermometer attached, was 60°, detached, 58½°, the barometer, 30·341. At the top the attached thermometer was 58°, the detached, 52°, and the barometer 28·345, giving the height 1,890 feet. On the 24th, sailed, and the same day anchored at Macao, which place she left on the 26th and anchored at Singapore, on February 4th. During this passage, the wind was steady from N.E., varying from N.N.E. to E.N.E., the weather very fine, with moderate and light breezes. When in latitude about 13° S., and longitude 112° E., it blew strong, with heavy rain, which was the only interruption to the fine weather. Between latitudes 7° 25', and 5° 11' N, and longitudes 107° 34', and 106° E., a current was experienced from the south of 24 miles in the 24 hours; and be-

tween latitudes 3° N. and $1^{\circ} 15'$ N., and longitudes $104^{\circ} 45'$, and $104^{\circ} 39'$ E., a current of 35 miles in the 24 hours: a heavy swell from the northward attended us all the way.

The town of Singapore appeared to have increased in size since our visit in May last.

Tigers are very numerous in the neighbourhood of the town, and persons engaged in forming roads are frequently taken off by them. Here is a small fish about $1\frac{1}{2}$ inch long, which the Malays fight one with another for sport, as they do cocks. The fish, which was in a glass vessel, was, when not irritated, of a dingy brown colour; but when a small fish was put near to it, on the outside of the glass, it changed to a beautiful red colour, the hues changing rapidly, the brilliancy of which I am not able to describe; the fins were extended, and it darted about the vessel which contained it with great violence.

On the 9th of February, I repeated the observations for the dip at the Observatory, and found it to be $12^{\circ} 54'$, by three sets of observations, which is $21'$ greater than it was when taken at the front of the public buildings in May last.

The wind, during the seven days which the ship remained at Singapore, was uninterruptedly N.E., the breezes light and fine.

On the 12th of February, sailed from Singapore, and the same day anchored off Rhio; and having taken sights at the house of the government resident, sailed on the 13th for Port Essington.

The winds, during this passage, were variable. The weather fine, with occasional squalls of wind and rain. The route taken was that recommended by Mr. George W. Earl in his pamphlet, going along the north coast of Timor, passing southward by the east end of that island. The sea in the Strait of Rhio was loaded with spawn.

On the 17th, passed within seven or eight miles of Lubeck island, the outline of which is irregular and very remarkable. It is well wooded, and appears to be inhabited. On the 18th, off Madura island, several canoes came off. It is a beautiful island, apparently well cultivated. In the evening, passed between the west end of Pondi island and Galion island.

The islands of Madura and Pondi are apparently very well cultivated, and thickly inhabited; some canoes were fishing, they are fitted with out-riggers as double canoes. On the 18th, I learnt from the master of a Dutch schooner, who has traded in these seas for twenty years, that, until the middle of March, the westerly winds will prevail in this sea, but after that there will be calms and squalls. The present is the rainy season, when heavy squalls may be expected, lasting four hours at a time. On the 19th, at noon, passed the opening of Lomboc strait; there was much thunder with heavy rain, and, on the 20th, the opening of the strait of Allas was passed at daylight, and the ship was abreast of an island believed to be Pulo Mayo. None of the uncertain dangers mentioned in the charts were to be seen, nor was there any appearance of the Barracouta shoal. Numerous water-spouts were here seen.

On the 22nd, the ship was off Ruga-Raga, a large high island separated from the island of Flores by a channel about six miles wide. At

8 A.M., the longitude was $121^{\circ} 50' E.$; and, at noon, the extreme of Rusa Linguette N.E.b.N., and S.E., a remarkable peak on Flores island, S.E.b.E., the latitude by observation being $8^{\circ} 14' S.$, and longitude $122^{\circ} 4' E.$ The peak on Flores island is very high and pointed; appears to be a volcano. The land is remarkable and high; Ruga Linguette is small, high, and well-wooded, and appears to be uninhabited. This night (22nd,) it came on squally with heavy rain, which continued during the 23rd, on which day, at noon, the ship was running along the north coast of Ombay, the latitude $7^{\circ} 48' S.$, the longitude by chronometer, $124^{\circ} 25' E.$

On the 24th, at noon, working through between the islands of Ombay and Cambay or Goat island, it had been squally, with rain during the night of the 23rd; the 24th was clear and fine with light breezes. Ombay is a beautiful island, covered with wood and apparently uninhabited; the trees grow to the tops of the highest ridges of the hills; the face of the hills is filled with ravines, and much resembles some of the land about Port Royal, Jamaica. Off the east end of Ombay, and between that and Timor, there is a great ripple; I know not the cause, the depth of water was 78 fathoms. At noon, upon this day, 24th, it was cloudy, and no observation for latitude could be observed. At 8h. in the evening, the ship was passing between Pulo Babi and the east end of Timor, many patches of light discoloured water were seen, which were taken for shoals, until it was proved by the lead that there was no difference in the depth of water upon them.

The morning of the 25th was hazy with rain, the ship was between the island Pulo Wetter and the east point of Timor; a moderate breeze from S.W. Some of the land of Timor is remarkably high, but, from the state of the atmosphere, very ill defined. At noon, in latitude $8^{\circ} 17' S.$, and longitude $127^{\circ} 5' E.$, the Isle of Kissa on the larboard bow. At 1 P.M. the island of Lette was seen; it was hazy, with a fresh breeze at W.S.W., and a ground swell. A little before 1 P.M., the island of Pulo Jackee opened with the east end of Timor, a long, low, flat island, and appeared like a long tongue of land projecting from the island of Timor. Before opening this island, the tops of a range of mountains opened, the most remarkable of any I ever saw. They appeared to be the tops of a chain running along the south coast of the island, which must leave a deep valley in the interior. The island Pulo Jackee has the reputation of being the easternmost point upon which monkeys are to be found.

On the morning of the 26th, no land was to be seen. The 27th and 28th of February, the wind was light and baffling, with squalls of wind and rain, heading upon every track. At noon, on the 1st of March, the land was seen, the latitude $10^{\circ} 56' S.$, longitude, $131^{\circ} 26' E.$ It extended from E. $\frac{1}{2}$ S. to S.W. $\frac{1}{2}$ W., very low, and apparently in two patches; but the trees with which it is all covered, can be traced the whole extent. The depth of water before the land was seen, and at noon, was 34 and 24 fathoms.

On the 2nd of March, no land was seen; the latitude at noon was $10^{\circ} 48' S.$, the longitude $131^{\circ} 12' E.$, a current setting S.S.W., half a

mile per hour; the weather hazy, light airs, squalls, and rain. At daylight, on the 4th, the land was seen, believed to be Vashon Head, but the sun was not seen that day, and the land so unvaried in appearance, being one regular line without a break, that it is impossible without observations to know what part of the coast was seen; to render the uncertainty in which we were, still greater, the standard chronometer was found to have stopped; it was to be wound up at 8 o'clock A.M. It had been over-wound, and had stopped; at 9 o'clock it was immediately set going.

Numerous patches were to be seen like sand banks just awash with the water, the depth was 30 fathoms, and, as the sun was not visible, it was difficult to tell what caused these remarkable appearances. A strong current set eastward. In the afternoon, an island was seen which was taken for Croker island, and two smaller ones beyond it, at a distance beyond the southern point of the island. Of this land we had no certainty; the coast was taken to be that about Port Essington. Round the point there was an opening round a small sandy bay, but not deep. Standing in for it, a white cliff appeared. It was soon evident this was not the port. There had been no observation for latitude or chronometer. There was a strong current, and, for several days past, there had been light airs and calms or squalls; the coast extended north and south, and we stood out north. At 2 A.M., on the 5th, the latitude by stars was $10^{\circ} 44' S.$, and the chronometer gave the longitude $131^{\circ} 46' E.$, which place the ship in Van Diemen Gulf. The land taken for Croker Island was the promontory terminated by Cape Don, and the two islands were the flat-topped hills Bedwell and Rowe. At noon, standing along the coast, these hills agreeing in the bearings taken, Popham bay was easily distinguished. Standing on for Vashon Head, every thing was clear, and the *North Star* anchored in Port Essington that evening, (March 5th.)

The soundings for the last four days that the ship had been upon the coast, were regular, from 32 to 27, and 25 fathoms; blue mud. The islands, in general, in this passage, are laid down in the charts about nine miles too far north, particularly the north coast of the east end of Timor and Sourabaya.

Port Essington is faithfully described by Captain King, and the survey by Mr. Tyers is quite accurate. At the time of the *North Star's* visit to the place, it was garrisoned by 1 captain of marines, (Captain M'Arthur,) 1 lieutenant, 2 serjeants, 1 fifer, 36 rank and file of royal marines; an assistant-surgeon, a linguist, 1 seaman, 2 women, and 3 children, total, 49.

The ground upon which the settlement, which is called Victoria, stands, is a partially cleared spot upon a bank about 50 feet above the level of the sea. The soil is a hard stoney earth, which, from its dryness, conduces much to the healthiness, for which the place is remarkable. A marine died in the hospital on the third day after our arrival. Since October 1838, when the marines first arrived, to this time, there had been only one death, and that a seaman of the *Pelorus*. The extent between the government house and the hospital, which are the most dis-

tant north and south from each other, is about 720 yards, and from the water's edge to the furthest building west of the wharf, is 130 yards. In the settlement, besides the government house and hospital, there is a mess-room and quarters for the officers, which are over two store-houses, of which there are five in all. There are 29 huts, each occupied by two men, with productive gardens to each, and the ruins of a church which was blown down by the hurricane. Near the settlement, there are two gardens, each about $1\frac{1}{2}$ acre in extent; the plants grow most luxuriantly, but of the trees the sorts are bad, as oranges, lemons, guavas, &c. Bamboo is much wanted for many various purposes, and Guinea grass for herbage, and sago for stock, and pigs should be introduced; arrow-root and tobacco thrive well. There are five never-failing wells in and near the settlement, with a little labour the water from one of them might be made to flow into the boats. Timber is abundant, and well adapted to building, is hard and durable, and never attacked by the white ant, which is the greatest enemy with which a settler here would have to contend.

The natives are numerous, well made, intelligent, mild, and obliging, equal or superior, in my opinion, to the negroes of Brazil or the West Indies. They will cut wood and carry water, and do other pieces of service for a small reward of biscuit or rice, and might make good servants; but they never remain long in one place, and when they move they oblige every individual of their tribe to go with them. They wear no clothing whatever, and neither sex have the slightest idea of shame.

There are herds of wild red cattle, buffaloes, and horses, in the neighbouring country, left when Port Raffles was abandoned, and since run wild. Fresh beef is scarce and not good, all that they have being buffaloes, which come from Sourabaya and Timor; but they do not succeed well, and there is a noxious herb very abundant which kills the sheep, so that it is of no use attempting to introduce them. Fish is plentiful, and very good, they salt and dry well. There are also great numbers of turtle, but the natives do not bring them to the settlement. Pearls of good quality might be found by searching for them. Trepanng is plentiful, and the Malays come here to collect and prepare it for the Chinese market; seven proas were in the port at one time, and, during our stay, there have been twelve. They wish to be allowed to settle there; they bring rice which they sell or exchange in payment for repairs done to their vessels, by the artificers at the settlement.

The winds, which had varied since the 6th when we arrived from W., W.S.W., S.E., and S.; N.W., S.W., W.N.W., S.E., W.; settled about the 19th at S.E. and S.S.E., and so continued; the breezes light, and the weather very fine.

Before the monsoon was changed, calms were frequent, with squalls, clouds, and rain, so that it was not until the 15th that I could complete a set of equal altitudes. The mornings are fine, but a little after noon, the clouds rise in the N.E. and N.W., and, about 2 p.m., meet with thunder and rain, clearing up at sunset. Towards the 19th, when the monsoon was supposed to be established, the wind frequently blew from S.E., with much thunder and lightning in that quarter, and rain which refreshes and cools the air, the light breezes producing an elasticity in

the atmosphere which is delightful. The thermometer in the shade, usually in the morning 82° , rising to 92° by 1 P.M. The range during our stay was between 78° and 94° in the shade on board the ship, and the barometer between 29.85 and 29.95. The dip of the needle was found to be $35^{\circ} 23'$ by six sets of observations,—the latitude of the hospital was found to be by meridian altitude of nine stars, 5 south and 4 north; $11^{\circ} 21' 54''$ S. the variation.

On the 6th of April, at anchor in the decked boat upon the reef, called the Orontes shoal, which is a coral bank with $2\frac{1}{4}$ fathoms water upon it. The latitude of it was found by the sun's meridian altitude to be by Mr. Stuart, the master, $10^{\circ} 43' 15''$ S., and by myself, $10^{\circ} 43' 46''$ S., the mean, $10^{\circ} 43' 30''$ S.

The bearings from the decked boats were as follows:—

<i>From the Boat.</i>		<i>From the Camelion.</i>	
Vashon Point,	225°	.	258° 34'
The brig Camelion,	176	.	.
Black Rock Point,	160	.	132 9
Turtle Head Point,	175	.	167 29
Point Smith,	148	.	110 44

The distance of the Camelion from Smith's Point was measured by patent log 3.3 miles. Point Smith is of moderate height, composed of a hard concrete of coarse red sand, coral, and small stones, highly magnetic, adhering to the point of a magnetized knife in particles as large as a BB shot, which sort of shot it much resembles in all respects. Upon this point I caused a pillar or obelisk to be erected as a landmark, the soil or gravel mixed with salt water making a cement of sufficient hardness to bind the stones together, with which it was built, the height of it to be 25 feet.

During the time that the *North Star* was at Port Essington, sickness commenced; in that time five men belonging to the garrison died in the hospital. The men were worn out, having been so long in so hot a climate, with little to employ the mind or body; their constitutions were broken. Mr. Wipple, the assistant-surgeon to the garrison, was left when the ship sailed in a very precarious state with fever. The settlement is defended on shore by an entrenched blockhouse, mounting four guns, two carronades, and two long guns, with accommodation for the garrison in case of attack.

On the 23rd of April, the *North Star* left Port Essington, and, on the 29th following, arrived at Copang, at which place it was necessary to touch for fresh provisions, for, since January 8th, on leaving Chusan, and the present time, 106 days, there has been fresh beef and vegetables served out 14 times, and 9 times beef without vegetables, so that, the people having been 83 days without vegetables, begin to feel the bad effects of it. When leaving the settlement, as many as 80 large pumpkins were observed in the hut of one of the marines, the produce of his own labour. These men should be obliged to part with their superabundant garden productions when required, a proper price being paid for them; had this been the case, good soup might have been furnished to the

people for nine days that they had beef only, which they at last objected to take, preferring salt beef to the flesh of the buffaloes alone.

On the 15th, in the evening, the fine weather broke up, and showers and sunshine were succeeded by wind and rain, which continued until we had left the port. The winds, during the passage, were from N.E. and E.N.E., varying from N. to E. and E.S.E., the wind became moderate and the weather fine as we approached the island of Timor. At noon, on the 27th, the straits of Samow were entered, and the wind fell light; the soundings throughout this channel were 56, 50, 48, and 38 fathoms, fine sand and broken shells. The land of Timor that was first neared was the point forming the east side of Pearl bay, of the charts; and at noon, on 26th April, the position of the ship was latitude observed, $10^{\circ} 11' S.$, longitude by chronometer, $124^{\circ} 35' E.$, distance off shore 12 miles; extremes of land, N.b.E. $\frac{3}{4}$ E., and W.b.N. $\frac{1}{4}$ N. The south side of the island of Timor is low towards the water's edge, and, for some distance inland, well wooded with tall straight trees, it then rises into hills which are overhung by clouds. When in longitude $124^{\circ} 17'$, there are about six remarkable white cliffs of various sizes. In some parts, extending about ten miles from the land, there were patches of a substance resembling rushes; it was not seaweed, but had the appearance of shoals or rocks even with the water's edge.

Approaching the island of Rottee, the land of Timor is of moderate height and well wooded, the surface of the ground irregular, with several patches of savana or pasture-land, some very beautiful, resembling a park in England. Near the beach there are some more remarkable white cliffs like those passed before; they are not very high eastward; it forms a point within which there are three others. Westward, it dips rather suddenly from its greatest height, and gradually tapers to a long low point, terminating rather abruptly in a sudden slope. Near to the extremity the ground rises gradually or with a gentle slope, upon which there are two remarkable trees, and a little farther in is a round hummoek not very high but sufficiently remarkable. Rising from this there is a hill or long low rising ground, which are the only remarkable objects in this long low point.

As we advance, the Island of Teos opens, low and covered with trees; it appears, at first, as if belonging to the point until separated by the changing of the ship's position. At an opening of 28° southward from the Isle of Timor, is the island of Rottee; the northern point is long and low, it extends N.E. and S.W.; it rises with a gentle swell and falls again to a point from which springs some higher ground forming three hummocks; the principal body of the land composes the first, the other two taper down towards the S.E. This appears to be converted into a remarkable hill having six hummocks, the first of which is a wedge-formed peak, the point tapering towards the north, then rising, forms such another point, between which and another like it, is a small peak, which is the third hummock mentioned. This land falling to a point, nearly to the water's edge, again rises to a low peak, which, in its slope down, breaks into three hummocks, the last being the most remarkable; from this the island terminates in a low abrupt point, at a small distance

from which rises suddenly from the sea a high conical point which is continued by more distant land until it terminates in the water, forming, as it were, an island; but the low distant land is connected, and is then continued and terminated by a long tract of land, the north-western extremity forming a high mountainous point which is continued in an almost uniform ridge until it rises into a broad topped hill rather high. The two sides of this table land are rugged hills descending to the sea, and terminating in a long low point. On the slope from the table to the water are five hummocks, the two southernmost ones are both together. The sea here and farther east is loaded with reeds and rushes, sticks and wood. At noon, the ship's position was, by bearing, north extreme of island of Rottee, S.W. $\frac{1}{2}$ W., N.W. extreme of Timor, N.N.E. $\frac{1}{2}$ E., S.W. extreme of Samoa, W.b.N. $\frac{1}{4}$ N. The isle of Timor extending from S. $\frac{1}{2}$ W. to S.W.b.W. $\frac{1}{4}$ W. The entrance to the strait of Samoa N. $\frac{3}{4}$ E.; the island of Rottee then appeared to be one continued island, the west end terminating in a long low sandy point, off which appear several trees, as if growing out of the water. The land then rises into two hummocks, the easternmost one of which has a clump of trees upon its top; further to the left appears the top of a high hill, and after a gentle rise of the ground, with a regular surface, nine hummocks appear; they are very remarkable, the land in the back ground high and rugged, forming into four peaks, the rest towards the east is of moderate height, irregular, and terminating in a point of considerably less elevation on the north side. To the N.W. the opening to the strait appears.

The land of Timor, upon the starboard hand, at the entrance of the strait, appears like an island, with a sandy beach extending from one end of it to the other, from the eastern point of which there is a long extent of breakers caused by a reef which runs off from it south-easterly; behind the centre of this point, far in the distance, there is a high peak visible. A reef extends also from the western point, on which the sea broke, although the water was otherwise undisturbed. The land westward is high but regular in its form, the whole covered with trees and beautiful savanas. Passing on towards the entrance of the strait westward, is seen opening out in the back ground, at a considerable distance, a high mountain having four remarkable craggy heads; the land then falls gradually, and is regular in its surface until the opening of the gut is seen. It then rises in a gentle slope, and falling again near the horizon, rises into high irregular mountainous land, the land on the foreground showing like an island. Five remarkable palm trees, which must have been before observed, are now nearly shut in, in the extreme west, by the distant low land, which rises to a regularly formed hill; this land becomes hid from view by the nearer ground, which is of moderate height, covered with trees. Advancing into the strait, more high land with a remarkable peak opens, and the western end of the sandy point before mentioned is rounded at $1\frac{1}{2}$ miles distant. The opening of the channel clearly developed, and having rounded the point steer up the centre of it. The passage is perfectly clear, the depth of water about 30 fathoms, white sand.

NOTES ON THE HARBOURS OF THE SOUTH-EAST COAST OF ENGLAND.
By a Civil Engineer.

TRAVELLING from London to the coast for relaxation and improvement of health, I determined on investigating for myself a subject which continually engrosses the attention of our Society, and is as continually brought before Parliament, without any practical or satisfactory result; and having compared notes, as respects Folkestone, Dover, Ramsgate, and Margate, it appears to me self-evident that all the evils so repeatedly carpied at by the press, and complained of by the shipping interest, arise from the management of our harbours being vested in local and interested hands. I shall begin with Margate, as the nearest harbour to the entrance of the Thames.

Margate is a proprietary harbour, and by several acts of parliament has been separated from the local grasp of the paviours and lighters of the town; but unfortunately for the harbour, it is still in the hands of those whose property abuts upon and interferes with its best interests. Now, it appears that when the act of 52 Geo. III., was applied for, the legislature was induced to grant the powers of that act on the presumption that the revenue of the pier would be applied to increase its capabilities, and we find the bye-laws apply, not only to steam packets and hoys in the local trade, but to "every ship, vessel, or boat entering the harbour," &c. Thirty-five years have elapsed since the passing of that act, and the good boatmen of Margate inform me that there is only room for steamers and small craft;—that an enormous profit has been made by the proprietary, while the harbour has no more capability than before. Enquiring of people of more intelligence they assert, that if the resources of this harbour had been economised, a good interest might have been paid, and £5000 per annum appropriated to a reserved fund. This in thirty-five years would have accumulated sufficiently to enable the proprietary to have made this harbour one of great capability as a harbour of refuge. There is no doubt but this is a most eligible site for a harbour. It has lately been surveyed by two able engineers, in the hope that the government will take the matter in hand.

At the termination of its area a low hollow called the Brooks, commences and stretches inland to a considerable distance. This hollow is composed of argillaceous earth to a very considerable depth; and the said engineers propose to excavate a dock in the most eligible site, and to convert the soil taken out into bricks, for the building out a pier or piers into deep water, and there is not a doubt but this would be a much cheaper process than stone or timber; and more durable than either, if the bricks were properly made and well burned. If, then, there are capabilities here for a good harbour of refuge, why has not the meaning of the act of parliament been carried into effect? Does it not look very much like getting money from the pockets of a British public under false pretences, to profess to build a harbour for ships, and for a period of more than thirty years to pocket a large revenue, and merely to extend into the sea, a paltry jetty for the landing passengers from the steam packets!

Such are the evils of local administration which deserves, in equity, to

the public, to be called to account in parliament, in order that the intention of the act may be enforced, or the act itself rescinded.

Ramsgate.—It would puzzle one to understand the nature of these works by a perusal of the act of parliament, the framers of which act, adroitly slipped in as a sop to their neighbours—"The maintenance and improvement of the haven of Sandwich," as well as the construction of a harbour at Ramsgate. Now, it does seem clear to a practised eye in engineering, that the haven of Sandwich has been neglected most shamefully, although many thousand acres of valuable land would have been reclaimed from the sea, by a judicious straitening, deepening, and improving Sandwich haven, and that the value of such land might have formed an ulterior fund for the support of both places; and thus given relief to the shipping interest. Well! a harbour has been built; and some thirty years ago it was stated in parliament to be complete, or nearly so, having cost the country a million and a half of money. And in this harbour a British frigate could not by any possibility be moored; everything entering this harbour of considerable water-draught must ground at low water, and hence we suppose its motto "*Perfugium Miseris*," for it is a refuge only to the miserable as a last resource. An engineer would naturally enquire how the princely revenue of this harbour has been applied during the last thirty years; a revenue during that time of (agreeably with its own returns) about £600,000, a revenue at present of upwards of £20,000 annual income, and yet the harbour has not increased its area, it cannot accommodate one more vessel than it did thirty years ago. It is now, in this day, designated by Captain Washington in his evidence, an insignificant area. How is this? who has directed its resources? A baker was, and a banker is, the pivot upon which this enormous outlay of money has turned. The marine villa of the family overlooks the harbour, and its management has rested with the father and the son, nearly half a century. If you ask a Ramsgate man who has the control of these works, you are told the London banker is *chief magistrate, director of police, comptroller of the works, and perpetual trustee*. The harbour then owes its celebrity, as a public work of utility, or its non-efficiency, to this succession in family management, or local influence.

Now, with all deference to the honorable character of the late, or the present manager, it may well be doubted where the engineering ability may come from, which should thus have secured in these hands, the administration of so vast a sum of the public money. It will be said they have been merely the organ of a board of management! granted; and we will ask, why, then, has not this harbour increased its capabilities? The reply is best given by ocular inspection of the works. It is, and has been, a plaything for its managers. Although its lavish expenditure and drawing-room finish has been repeatedly reprobated in Parliament, still it is allowed to go on. What, then, is the engineer about? Who is the man consulted? Sir John Rennie? Impossible! Economy itself forbid! Sir John would never sanction a building now in course of erection which is intended only for a temporary magazine, merely to hold a few barrels of gunpowder, having all the finish of an Asiatic

mausoleum. But to return to our premises, thirty years at £20,000 amounts to £600,000, and a severe scrutiny should be demanded as to the benefits derived from so large an outlay. The question should be insisted on,—what has the mercantile marine of England benefitted by this enormous contribution? It is hardly ungenerous to believe that local interests have been injurious to the progress of this harbour, as well as in the proprietary of Margate. Public property degenerates into a private position in such a case. The resident trustee removes every thing unsightly, however useful, and studies the offence which may be given to his neighbour's eye equally with his own. A town or locality is often benefitted at the expense of the public purse, and who is to blame? Not the manager, but a legislature which allows the management to become an hereditary right, in lieu of consigning it to disinterested hands. Here, as at Margate, there is every facility for extension right and left. It is a very unquiet harbour, and the expense of its various embellishments had much better have been expended in an exterior breakwater to keep out the sea from its interior area. Such are the evils of local rule at Margate. They "will do what they please with their own," till interfered with by legislative enactment. But here it is not their own, and *public utility*, not *private gratification*, should be the study of those who administer its resources.

Dover Harbour.—We commence our observation on this ancient port in the language of our intelligent Maitre d'Hotel:—"Ever since the reign of Harry the Eighth," said he, "our Dover harbour has been a disgrace to the country;" and we perfectly coincide with him, while we examine an old chart or plan of that monarch's reign, copied in the time of his daughter Elizabeth. The entrance to this harbour, it appears, has always been choked by certain winds with a shifting bar of shingle. And yet, century after century, and treasure upon treasure, have been expended in useless efforts to scour it away by means of a backwater, while it is self-evident that a pier might be extended into the sea beyond its effects, and the very shingle itself assist in forming a concrete mass which would insure its stability. This has been the simple proposition of scientific men for many years; and why has it not been carried into effect? Let the Dover people, who are not connected with its harbour establishment, speak for themselves! They will tell you that local interest has prevented every plan of that kind receiving due consideration; that the ancient backwaters (or pents) have been built upon and filled up, and the local revenue increased by these harbour leases! That carrying out the pier, and turning away the bar, would endanger all the property in the bay, which is built upon a bank of such shingle. Who, then, are the builders? To this inquiry, we are directed to ask the harbour trustees and the members of the corporation. It is enough. Here, again, the shipping interest may well demand a severe scrutiny, for they are paying to a harbour, which is, to the mercantile marine, at all times uncertain of approach; and, as far as they are concerned, comparatively useless.

A sinking vessel may be run upon the mud in Ramsgate harbour, life and property saved, and some remuneration rendered for the payment of

its dues. But here, at Dover, they are expending thousands in the enlargement of an area which has still a bar entrance, and, except the piers are extended, will continue unsafe to strangers, and difficult of access to those who are its licensed pilots. Here is a dry dock converted into a wet one, after a most extravagant outlay, being of a piece with the general administration of these works. We turn from this piece of wasteful expenditure, so long sanctioned by political influence, and a few minutes takes us through the funnel to Folkestone. And now, "*en passant*," a few words upon the affairs of the South Eastern Railway Company. If Dover and its Cinque Port influence had not stood in the way, the expensive tunnelling would never have had existence, and the enormous sum expended in a distance of half a dozen miles, to gratify the caprice of a Lord Warden, would have been more than sufficient for the construction of a good harbour at Folkestone. Nothing daunted, however, by this tax upon their industry, the South Eastern Company purchased the little harbour of Folkestone, and, by their spirit and energy, they are shewing their sapient neighbours the manner in which a harbour may be constructed and improved. They are stopping the shingle in its course along shore, and converting it into an esplanade of terra firma. There are outlying rocks of galt dangerous to their approaches; these they are removing from the bottom of the sea (by means of divers, who go down and sling them), thus clearing the navigation, and carrying out their pier with the material; and we venture to prognosticate that, by a steady and economical outlay, they will, in a very few years, supercede Dover as a packet station. This will be rather a ridiculous satire upon the other ports, and certainly upon the office of all the former wardens of the Cinque Ports, whose jurisdiction should have impartially swayed and controlled, the progress of the whole of the Cinque Ports and their dependencies. Let us suppose the revenue of Margate, Ramsgate, and Dover, during the last thirty years, in one consolidated fund, and we imagine it would amount to something like a million and a-half sterling, expended upon only 25 miles of our sea line, and what have we to show for it? As Englishmen, we are almost ashamed to ask, for the said harbours existed then, and they only exist in unimproved efficiency now, and how and when is this to cease, it is for the legislature to determine.

TYPHOON IN THE CHINA SEA.

HAVING been much interested in the account of the Pluto's Typhoon* in the *Nautical Magazine* of this month, and as the theory of circular storms is exciting attention among seamen, by being apparently more and more borne out by facts, I am induced to send you the following outline of a typhoon I experienced in the China Sea in 1842, for every mite of practical observation dropped into the treasury of knowledge, assists in dispersing the prejudices which old sailors have yet to theory, whether united with practice or not; and, I think in our profession we are beginning to see

* See account in our last volume.—ED.

the days of the successful union of practice and theory. But for this antagonism to science among my brethren, but for the pertinacious love of adhering to old fashioned ideas, doubtless, many more discoveries and improvements in navigation generally would have been made.

Going up to Hong-kong at the time of the equinox Sept. 1842, the moon being in Perigee, and about the change also, I thought it very probable we might have a breeze ; but the equinox having passed some days, and fair weather continuing, I hoped, we should escape. However when three or four days sail from Macao, about noon I observed a most wild and uncommon looking halo round the sun, which at the best I could only view as indicative of an unusual state of the atmosphere. The next day set in with merely light passing squalls, smooth water, but very strong ripples. The afternoon was remarkably fine, but casting my eye on the barometer I saw it had fallen considerably since noon. I thought at first some one had meddled with it, though looking again half an hour after I was convinced it was falling rapidly. Still the weather seemed very fine, and I thought it strange; but I was inclined to trust my old friend, which by its timely warnings had saved me many a sail and spar before, and at other times had often enabled me to carry on through an uncomfortable *looking* night. On this occasion it proved itself worthy of the trust, and I should have had cause to regret it had I neglected its warning, and trusted to appearances only. About 3 P.M., barometer still falling, though the weather continued fine, I ordered the crew, who had been previously employed cleaning the ship, and preparing for harbour, to strike top-gallant-masts and yards, mizen-top-mast, and jib-boom; the sails and rigging of which I had put *below*; and, indeed, divested the rigging aloft of all top-hamper, and every thing that could be spared. Secured sails and hatches, close reefed the topsails, and boats hoisted onboard, and well secured.

This being done beforehand, was done quickly and well. I dare say Jack thought it funny work making all this preparation on a fine afternoon ; and some of them looked about weather-wise to divine the reason ; but, however, other people's opinions, when my own are formed on good grounds, are of little consequence, and in a few hours the most incredulous were fully satisfied with the prudence of the operations. All being prepared, quiet succeeded to bustle, but the barometer still falling, I said to myself now in reality is coming one of these said typhoons, and having previously been led to pay some attention to the subject, I looked to its approach with a mingled feeling of apprehension and curiosity. Towards evening I observed a bank in the S.E., night closed in, water continuing smooth, but the sky looked wildish, the scud coming from N.E., the wind about north. I was much interested in watching for the *commencement* of the gale, which I now felt sure was coming, considering that Col. Reid's theory being correct it would point out my position with respect to its centre. That bank in the S.E. must have been the meteor approaching us, the N.E. scud the outer N.W. portion of it, and when at midnight a strong gale came on about North to N.N.W., I felt certain we were then on its western and southerly verge. It rapidly increased in violence but I was pleased to see the wind veering to the N.W., as it

convinced, me I had put the ship on the right tack, viz: the starboard; standing of course to the S.W. From 10 A.M. to 3 P.M., it blew with great violence, but the ship being well prepared, rode comparatively easy. The barometer was now very low, wind about W.N.W., the centre of the storm passing doubtless to the northward of us, and to which we might have been very near, and experienced all the fury of the *Pluto's* gale, had we, in the first part, put the ship on the larboard tack, and stood to the N.E., the nearest to our centre, instead of the starboard tack, standing to the S.W., the very opposite to it. About 5 P.M., wind at W.S.W., sensibly decreasing, barometer rising. 6h., fresh gale, made sail to keep ship steady, a very great sea on, and, towards midnight it became a moderate gale; wind having now become S.W. to S.S.W., the ship breaking off to S.E. Thinking it a pity to be lying so far out of *our course*, I wore to the N.W., and made sail, but, in less than two hours heavy gusts came on, the barometer began again to fall, and I now thought, of course, we are approaching the storm again, and, doubtless the theory is not mere speculation. I wore again to the S.E., and, to show more clearly how great a difference a very short distance nearer to or farther from these storms makes, the weather rapidly improved. The next morning it was fine and moderate, and the wind became S.E., with a heavy remaining westerly swell, and, till afternoon, there was a dark wild appearance in the westward, which seemed to me another proof that it was the meteor which had the day before appeared in the S.E., and whose course had been S.E. to N.W., passing a little to northward of our position. When we arrived in Hong-kong two or three days after, they had had a gale, but not very violent, for the storm was evidently of small extent, and the centre lay between the ship and Hong-kong, and through which centre I might have had the pleasure of passing, if regardless of the indications of the barometer, and the results of the scientific comparison of the data of other storms, I had been eager merely to keep on the tack, the larboard, nearest my course, heading to the N.E., instead of standing to the S.W., and in the relative position in which I was to this. I may also add, that though the storm wave might be carrying me to the westward, the storm current certainly swept me to the southward out of the course of the storm. I regret that being just now at a distance from home, I cannot avail myself of my papers to give you the exact particulars of changes of the wind, barometer, &c.; but this short practical study of a rotatory storm so impressed the principal features of it on my memory, that you may depend on the general accuracy of this rough sketch, which, if you think worthy of insertion, may suggest more strongly to my nautical brethren the wisdom and propriety of considering the nature of these phenomena, when they happen to meet with them, to say nothing of the confidence it must inspire a crew with in their commander, and the sound influence it gives him over them when they see that, on such occasions, even in the face of appearances, that, to use Jack's common expression,—“the skipper was right after all.”

JOHN VINE HALL,
Master of the barque Black Nymph.

PORT ROYAL AND ITS ASSOCIATIONS.

Concluded from page 639, Volume for 1846.

THERE is much force in the term "my old messmate," and men of similar feelings and disposition are, on shipboard, often bound by the ties of the most disinterested friendship that can animate the heart of man; and, in general, there is a disposition to mutual good feeling running through a whole ship's company. The association held on the interminable ocean is very distinct from that which takes place on shore, if we except among soldiers,

"There's a charm in the feeling *service* entwines,
With evergreen halo, around the heart."

And it is found, on many occasions, ending but with life. The "jaundiced eye" which prevails in almost all other professions, and especially in trades, has seldom been apparent among sailors. In truth, the thorough tar is so original an animal in feelings, in manners, and in dress, that he is as readily distinguished from the other classes of society as a Quaker is; and he is rarely seen in the company of any other companions but his own blue-jacket compeers; indeed, the leaning upon the "fraternity" is as congenial to the officer as to the "regular jack."

During the war, some extraordinary, some strange, and some laughable incidents occurred on shore; and a few on board the old Guardo, which, at the time, created surprise in some, and amusement in the light-hearted of the fleet.

Among the different grades, there were a few noted characters, whose eccentricities failed not to draw attention, and whose wild pranks, (for the most part, among the "young gentlemen"), were constantly giving rise to inquiries, examinations, and ingenious pleadings; the circumstances often originating in frolic, and love of "fun," which, I need scarcely add, are inseparable characteristics of your thorough hair-brained middy.

Of that class, generally, were the delinquents, who, happening to be congregated on board the receiving ship, lost no opportunity of turning every thing to account in the way of amusement—even the Commander-in-chief, more than once, came in for a share of their practical jokes;—but they were better lawyers than their good old chief, and generally contrived, by dint of argument and impudence, to gain the *non prosequitur!*

The untameable wildness of some of these youths—the extreme hazard which, without a thought, they sometimes ran of blasting their future prospects in the profession—was a matter of real surprise to the more steady of their class; and, in truth, had not the admiral been one of the best hearted men in existence, the career of some would have been cut short. No doubt, their considerate chief thought with the poet, that—

"Once to be wild was not such foul disgrace."

The *Shark*, as a matter of course, was the receptacle of the human

miscellanæ of the squadron, as the living genus, "Old Tom of Port Royal" had been for the useless things hove from it, officers newly arrived, prize-masters, lieutenants, and midshipmen, waiting the return of their ships into port. The grand object of these restless spirits was to wile away the time—the idle interval—in as agreeable a way as possible. Now, as there was not much scope for rational recreation in so confined a sphere, it was scarcely in the nature of things to expect that a month, or even a week would pass, without some display of mischief or "devilry," of which the good folks of Port Royal were principally the complainers.

There was a remark made by one of the Captains, that it was strange there should be such a difference in the conduct of the mids of a private ship, and those of the Guardo. It is probable the gallant officer made the observation only from the parade behaviour of the one set, and the public exposé of the pranks of the other, whose conduct was not watched with the same vigilant eye. But, after all, it is not the locale, or the domicile, if I may so express myself, that keeps mids, or any other of the youthful tribe, in good order; for, how often do we find the restraint on decorum—that is, the rules—when opportunity offers, disregarded, regardless of consequences, by the buoyancy of youthful feelings, and even where example and precept keep court. Our "wild-oats sown," we are but too ready to scowl on the light transgressions of an unsteady set of boys, and to forget our own early erratic sallies. In transgressions not of serious cast, severity of punishment would be misapplied if inflicted; generally, this sentiment is entertained; but sometimes the contrary.

The love of pleasure—a word of vast range—pastime—equally varied in its application among the millions, fills up the measure of life, that brief space full of gloomy shadows. There is no keeping rule here, some of the wilder spirits will break bounds; in these respects, the beings of this world of pleasure and of pain, old and young, fall alike under the same category—*variations* prove nothing—grown up children are as apt to play the fool to kill time as any mid who ever "squibbed a Jew" or a "Gentile." In the palace, as in the cottage, such things have been in vogue.

The general routine of amusements has improved, without a doubt; but there are still aristocratic as well as plebeian extravagancies; and if we forget the things that were, open our eyes "abroad," and look into the things that are, with Professor Porson's "Old Nick's promenade" in our hands, to assist our judgment—we shall see graver folly than the wild tricks played by "haram-scaram" middies!

Among the youthful aspirants* for frolicsome notoriety, as well as for martial fame, was "Tandy Mousa," one of the most noble-minded and gallant fellows that ever trod a quarter-deck. His qualifications as a signal-officer gained him that office, for some time, on board the detestable floating ship-house.

* There was on board this vessel a Lieutenant Wolsenscroft, son of the celebrated and talented lady of that name, who, at one time, made such a stir in the moral world. He was a fine young man, and represented as being very clever. Unfortunately, he fell a victim to the country fever.

Tandy was a fine manly, dashing fellow, full of vivacity, abounding in humorous stories, and fertile in inventions for driving away ennui. He was a universal favourite, even with the Port Royalers, although he never lost an opportunity when it offered of tormenting them. Gayest of the gay, in spite of his disposition for fun, he became an especial star among the ladies, whether black, brown, or fair! But, with all his wildness, Tandy possessed the most benevolent of hearts; indeed, he was generous almost to a fault, and as valiant and fearless as he was kind. In these qualities, I have never met one who surpassed him.

The more timid among the Port Royalers, although for many years accustomed to the roar of cannon, were rendered nervous whenever such sound reached their ears, for the reason, that an accidental shot had found its way among them. Their fears on these occasions had not been lost on the ingenuity of our mischievous reefer; and we here give the following as one of the practical jokes he played off on the alarmed folks of the town.

As flag officer, it was Tandy's duty to direct the firing of the morning and evening gun. Now, he had been strongly suspected by most of the town's-folk, as having been the wilful cause of their late fright—for which accusation, he told them that he would pay them "interest"—the fact being that the shot was accidentally fired by one of the frigates during a salute.

Just as the affrighted minds of the motley denizens of the Royal Port-town had settled down into equanimity again, after their alarm, our wicked wight bethought him in what manner he could best re-astonish the natives. He had a great desire, knowing now their weak point, to keep them on the tight-rope of alarm and anxiety, occasionally, by a shot from the signal gun; but then there would be a great chance of detection, as the "flag" only fired; and, besides, it would never do to expend the king's stores. A thought at last struck him, which he immediately acted upon—*wooden-shot* would answer the purpose capitally; and he well calculated that with a "moderate degree" of assurance, if accused, he could contrive to back out of the dilemma, his care being, to keep the secret secure until after the "blow up," which he fully anticipated would follow half a dozen "whizzes." The shot were accordingly turned in Kingston, and sent down in a box.

It is a remarkable fact, that, although in some way or other all shades were at times tormented with his tricks—he possessed such redeeming qualities that there was not one single individual, from the leading store-keeper, down to "poor Polly Bailey," who would not have most willingly and most readily served him. It must be observed, however, that whatever mischief was done, he was sure to be taxed with it, whether the perpetrator or not. Well, a wooden ball was occasionally sent over the town, to the manifest alarm of the peaceable inhabitants. Complaint after complaint was made to the "flag," that a shot was fired from the morning and evening gun, and the circumstance greatly exaggerated. At first, the commanding officer attributed the complaint to the fancy of the timid, who had not recovered from the fright, which the accidental shot, spoken of, had occasioned, and treated the matter accordingly; for,

although he was aware the giddy mids would carry their love of mischief to great lengths, he could not believe that any amongst them would be mad enough to expend the king's stores for such a purpose. The subject was mentioned to the Admiral, who was of the same opinion; besides, he was sure his "nonpareil" flag midshipman, lively as he was, would not run the hazard of annulling his hopes of promotion, by such a thoughtless frolic. The tormentor had taken good care, whilst he practised the terror, not to meddle with the ship's stores; and not a soul on board was aware of the wooden balls being introduced into the gun. He, therefore, stood in no fear of witnesses against him; and, as for the "light bobs," as he termed the ligneous messengers, the powder sent them skimming over the shingle roofs far into the sea. We cannot stop to inquire how it was that such a sad dearth of rational amusement happened to exist in this floating house, to have induced such an out-of-the-way pastime; but to those who know the unconquerable propensity to mischief* in the mind of that wildest of all wild beings ycleped a midshipman, it will not perhaps seem wonderful.

At last, such a hubbub was made about the shots, that the Admiral

* Some of their frolics were senseless enough. I recollect the first night of the day I joined a frigate on the point of sailing, after the candles were lit, in discussing some trivial affair, the argument waxed warm—the lights were "dowsed," table overturned, a general "good-natured row," followed, during which all the newly bought crockery, &c., was smashed in pieces. This being new to me, I escaped through the window of the berth; and it was not until the master-at-arms had threatened repeatedly to "report," the mad fellows gave out. Such a scene as the berth presented can scarcely be described—the result was, that, during the cruise, there was only a tin cup and the top of the tea-kettle available.

In the C—— flag ship, the mids (two or three dozen), thought fit to get up a saturnalia one night. The captain of marines was sent down to bring them to order, after they had had several warnings to desist. He had no stomach for such a mission, being a very quiet, inoffensive being; but he appeared at the hatchway, and began to reason with them in his usual mild way. They begged him to come down and treat. The moment he stepped upon the ladder, down he and it went gently as a trap-door, and, in an instant, he was in total darkness and not a sound to be heard. He was seized, handed like a child from one gang to another until they had brought his outstretched body directly over the coal-hole. The dead-march was chaunted in a suppressed number of voices, which, when finished, the order was given, "lower away," when the body of the poor passive captain was deposited with all imaginable care, the hatch was put on, and the devilry recommenced. At last, it was carried to such an unwarrantable pitch, that the first lieutenant was obliged to go down with a file of marines with bayonets fixed, to quell the "mutiny" among these ungovernable spirits. The scouts gave warning, in a twinkling the ladder was shipped, and when the gallant "first," with his guard of jollies, made his appearance, preceded by the usual functionary with his lantern, every recreant mid was in his hammock, and nothing disturbed the repose around but the sounds from their nasal organs. "Oh! you're a pretty set of gents, a'rnt ye? Where is the captain of marines? What the d——I have you done with him?" No answer. "Come, this wo'nt do! Where is he, I say?" A voice, as from the shades,— "Here, my good fellow, in the coal hole." "The d——! Ah! my lads, you'll tickle for this game!" A roar of laughter followed from

determined to investigate the matter himself. Accordingly, the flag-mid appeared before his chief, and the matter was opened by the complainants from the shore, telling all they heard, and felt, and believed. The direction of the duty being vested in Mr. Midshipman Mousa, he was asked what he had to say to the charge; to which he very adroitly answered that he did not fire the gun himself, but merely gave orders to the gunner, who being the responsible officer with respect to *shot*, he begged leave to call him, and he was quite sure he could have no sort of reason for expending his stores of that description in such a way. This was said with all imaginable gravity. A suggestion was made by one of the complainants, to the effect, that though Mr. Mousa did not fire the gun, he may have given directions for the shot to have been introduced and fired. Of course, this was *indignantly* denied—and the wondering gunner with his crew examined. As might be expected of men who really knew nothing of the matter, they severally denied that any thing besides a cartridge and soft wad was ever discharged from the gun; and the gunner requested to be sworn to the fact. It was “odd, very odd, indeed;” but nothing could be clearer than that “the fears of the good folks had got the better of their judgment.” The case was dismissed; but, “convince a man against his will—he’s of the same opinion still!” So it was with the Port Royalers.

Some years after this, when the “wooden balls” were forgot, during a salute, a shot from one of the ships went through the store-keeper’s office, where one of the clerks happened to be writing. The poor fellow, who was very nervous, was so alarmed, that he forthwith ran into the town, and no persuasion could induce him afterwards to resume his situation; in truth, he had a very narrow escape, but that did not save him from a shot or two from the “grey-goose quill” of the rhyming mids.

ABOLITION OF THE LIGHT DUES.—*Compiled from Official Documents.*
By Samuel Baker. 8vo. pp. 54.

IN the Session of 1845, a Select Committee of the House of Commons was appointed “to inquire into the state and management of lighthouses, floating lights, buoys, and beacons, on the coasts of the United Kingdom.” The Report of this Committee is a voluminous document, which, with the evidence and appendix, extends over 800 pages.

the “sleeping” rogues. The poor royal was released, and every “mother’s son” of the “hopefuls” was marched upon deck under guard.

Whilst the B— frigate was running down the trades, two mids quarrelled, M’G— and P—. They immediately went up on the top-gallant yard, one at each end, and settled the dispute with pistols in that position; and, rare as duels are in the navy, we have known one settled at the instant across the gun-room.

As few persons, however interested they may be in the subject, and it is one of the deepest interest to this maritime nation, can command leisure to read so ponderous a volume, the author of the abovenamed pamphlet has deemed it advisable to give, in as condensed a form as possible, the substance of such parts of the evidence of shipowners and merchants as refer to the injurious effects of the light dues on trade; and which prove the benefit to the entire shipping community that would arise if the recommendations of the Committee were adopted.

It appears by the returns for 1843 that the aggregate amount of light dues collected in the United Kingdom, in that year, was £356,905 for the public general lights, and that the charge for collection was £15,814; in addition to this sum is the amount levied on shipping for harbour and local lights, not given in the Report of the Select Committee, but which may fairly be assumed at £43,000, thus making a total of £400,000 levied on the shipping of the country for dues on lights, buoys, and beacons; and the Committee state, "that they were convinced, on the clearest evidence, that these dues press very heavily on the commercial shipping of the kingdom, and especially on the coasting trade."

The pamphlet before us says "Numerous petitions have been presented to Parliament complaining of the burden of light dues, as well as the manner in which their pressure operates to the injury of the shipowners, and the general trade of the country. That they are a burden on British Shipping, as compared with that of other countries is evident from the facts that in Russia, Prussia, France, and the United States of America no separate charge is made for lights." A large amount of dues is paid by foreign ships, chiefly American, while in their ports we are treated with the greatest liberality. Captain Moore, an Englishman, who had been more than 30 years intimately connected with the United States of America, (23 years of which he had been engaged in the mercantile service between that country and England,) and now commanding one of the American liners, stated in his evidence "that they pay no lights' dues in America, building and maintaining the lighthouses, together with buoys and beacons, being under the management of government, who consider they are necessary to the safety and welfare of the commerce of the country and therefore they are supported out of the public funds." The annual charge for lights in England, upon 12 liners is £1620; in the United States, nothing! In many cases the dues press so heavily that vessels either wait for a full cargo or go in ballast up and down channel; and consequently merchants cannot afford to execute the small orders they receive. In the evidence of the manager of the Aberdeen Steam Navigation Company it is stated that on one voyage the whole freight of the steamer *City of London* to Dundee amounted to £6, whilst the light dues were £12. 8s!

It appears by the Report, that the rates of light dues are not only unequal in the amount charged by the Boards in each of the three kingdoms, but they press with greater weight on some branches of the shipping than on others. Thus while every class complains of the burden of light dues, the sailing coasting traders have the strongest grounds for complaint; they have for some time had to meet the competition of

steamers, but a far more serious evil now menaces them in the competition of coast railways, and unless some relief be afforded to them, their existence will be seriously perilled.

That the fear of falling off in our shipping is no groundless alarm is proved by the returns laid before Parliament, of the decrease in our whale fisheries. In the South seas, in 1832, as many as 91 ships with 2750 seamen were employed; in 1842 only 28 ships and 835 seamen. In Greenland in 1832 there were 258 ships with 11,919 seamen; in 1842 only 62 ships and 2873 men.

In like manner in the Baltic trade there has been a similar decrease of British tonnage and seamen. In 1833 there were 6,252 ships, carrying 53,746 men; while in 1843 there were 5,813 ships, and 48,280 seamen. In the same year the average number of tons of British shipping which passed the Sound was 372, in every 1000 tons, whilst the average number in 1843 was only 283 tons.

Yet ships employed in the foreign trade have had some relief by being allowed to take their provisions from bond, but the coasting trade has not had that indulgence. The higher rate of wages of British seamen, their expensive and better food, the increased cost of many articles of outfit, artizans' wages, rates of insurance, taxation, and many other charges, which the shipowners submitted to, while the trade was profitable, are now become burdensome; and in the present depressed state of commercial shipping, it appears inexpedient and unjust to compel them to maintain an establishment kept up for purposes essentially national.

Among the witnesses examined, Mr. W. L. Ogilby, forty years shipowner, ship broker, and insurance agent, specially called attention to the injury arising to the coasting trade of the kingdom by the practice of charging whole light dues when the freight is small: the consequence is, that small freights are refused, and thus both shipping and trade sustain a loss without benefit arising to the light fund. He further shewed that the traders to the principal ports of Ireland have paid on an average 5s 1½d. per ton on the average of the year; that vessels from the Mediterranean and south of Europe, making a less number of voyages pay 3s. 6½d. per ton; and ships to India and China, making one voyage in the year, pay 1s. 1¾d. per ton; and that the coasting trade, now in the greatest depression, would consequently benefit the most by the abolition of light dues. Mr. G. F. Young, the well known shipowner and shipbuilder at Limehouse, and an active member of the Shipowners' Society, gave it as his opinion that as long as the charge for maintaining lights is specifically placed on shipping, shipowners are entitled to receive the benefit of these lights at the most economical rate. He adverted to the important item of expenditure in the distribution of the charitable funds of the Trinity Corporation, amounting last year to £34,000; and to the great reduction which he considered might be made in the charge for collection and management.

Mr. T. Barclay of the Edinburgh and Dundee Steam Packet Company transmitted the following statement to the Committee "One small steamer leaves Granton pier in the Firth of Forth, at 8 A.M. for Dundee, returns

at 2 o'clock, and arrives at Granton before 7 o'clock, never using, requiring, or deriving any benefit from the lights, to which however the owners of the steamer are obliged to pay £700 a year! Captain Denham, R.N., one of the Admiralty surveyors, employed for thirty years in that department, stated that he was of opinion that a change of the sites of many of the lighthouses might be attended with benefit. It appeared to him that such an important affair as a light should not depend upon those who are restrained from applying for it, by knowing that a toll for its maintenance will be laid upon shipping. He was therefore of opinion that the lights of the country ought to be placed under one central board, which should have authority to decide in all cases where lights, beacons or buoys are requisite without waiting for shipwrecks to call the attention of the public to it.

Mr. H. C. Chapman on the part of the Liverpool Shipowners' Association gave evidence to the same effect:—He mentioned that at Liverpool the sum paid for collecting the light dues exceeded £3200 a year. Mr. R. Anderson, shipowner of South Shields; Mr. G. Burns, 20 years manager and proprietor of steam vessels at Glasgow; Mr. C. Wye Williams, manager of the largest steam vessel company in Liverpool trading to Dublin, Belfast &c.; in short representatives of the whole shipping interests in the United Kingdom all concurred in similar opinions as to the unjust and unequal pressure of light dues on shipping. The latter gentleman stated as a peculiar hardship that two of their vessels employed in carrying the mail between Liverpool and Dublin, have to pay £2,500 a year for light dues, while two government steamers also on the same service, and which make a profit by carrying passengers, do not contribute one shilling to the maintenance of the lights.

Mr. Baker concludes his well-timed pamphlet with the following queries:—1st, It appears by the evidence of the deputy-master of the Trinity Corporation, that that body, self-elected, has the conservancy of all lights, buoys, and beacons, so indispensable in coast navigation to this great naval and commercial country; and the corporation consider that Parliament has no right to interfere or control them in the management thereof, for the public interest. It therefore becomes a subject of serious consideration for shipowners who alone are taxed for the establishment and maintenance of those lights,—Whether the important trust reposed in the Trinity Corporation has been fulfilled, so as to render it unnecessary to call in question their system of management?—and, Whether that body has afforded any protection to life and property, in making coast navigation as safe as practicable, by the establishment of lights, buoys, and beacons wherever they were required.

“2nd, As the inquiries that have already been made by Parliamentary Committees since the year 1822, into the management of the light establishments have been productive of great benefit to maritime commerce, by reductions in the charges and other alterations. Whether such inquiries, from time to time, into the affairs of an irresponsible body, having so important a trust reposed in them, are not absolutely necessary for the public good, so long as the Trinity Board is constituted as at present?—and, Whether it is not reasonable to expect, that in conse-

quence of such investigations, the establishment of lights, buoys, and beacons, of such importance to the naval and commercial interests of the United Kingdom, would not eventually be better conducted under the superintendence of Government, upon one uniform system, and by responsible public servants, with proper foresight to provide for the safety of shipping, in the most efficient manner and on the most economical plans, instead of being left to spring up as local wants may require them, after the most disastrous losses at sea.

3rd. Whether the light establishments have been maintained with due regard to economy? Whether the shipowners have not been obliged to pay greater sums than are requisite for their maintenance? Whether they have not been called upon to pay large sums arising from the improvidence and mismanagement of the Trinity Corporations? And, Whether it is not a reproach, that any portion of the establishment of lighthouses should have been the means of heavily taxing the trade of the country for the benefit of a few private individuals?

4th. Whether relieving the coasting trade from the payment of light dues is not of the highest political importance to the maritime interests of the country, inasmuch as by the oppressive operations of these dues, and the competition already experienced and daily increasing from the establishments of railroads, the coasting trade must be greatly reduced or totally destroyed; a matter of the greatest moment, considering it as the principal source which has hitherto supplied the hardiest of our sailors?

5th, Whether it is just, that the expense of supporting the light establishments, buoys, and beacons, for purposes strictly national, should fall exclusively on shipowners?

6th, Whether a direct injury is not sustained by the seaman in consequence of the coasting trader not being able to carry small quantities of goods when he is unable to obtain a full cargo, on account of the payment of the light dues, which is attended with loss to the merchant, the manufacturer, the broker, and the consumer.

An answer to the above questions will prove the necessity of immediate measures being taken to carry into effect the recommendations of the Select Committee of the House of Commons as regards the future management and maintenance of the lights. "That all expenses for the erection and maintenance of lighthouses, floating-lights, buoys, and beacons on the coast of the United Kingdom be henceforth defrayed out of the public revenue; and as the Trinity Board has incurred a debt in purchasing the rights of private individuals for their leases and possessions of lighthouses, the Government ought to take upon it that debt." And with respect to their future management, the Committee expressed their opinion, "That all public and general lighthouses and floating-lights, buoys, and beacons of the United Kingdom should be placed under the management of one Board resident in London, and that that central Board in London should be the Trinity Board of Deptford Strond, and that in future one-third of the members of the Trinity House of Deptford Strond should be nominated by the Crown."

Parliamentary returns afford a pretty decisive answer to the first, and

in our opinion, by far the most important of these questions, viz : whether the Trinity Board and similar Boards in Scotland and Ireland have afforded every protection to life and property, in making coast navigation as safe as practicable by the establishment of lights, buoys, and beacons wherever they were required. To begin with the Thames, the highway to the metropolis and commercial mart of the world; will it be credited that the south channel into this river, the channel by which the greater part of our foreign trade reaches London, is not lighted at all? nay, till last year the Princes' channel, by far the deepest water, was not even buoyed. Again from the Nore upwards there is nothing to guide our steamers, which must and will continue to run up and down at all hours of the night; when this might easily be done by a small floating light at the Chapman beacon, at Shell haven, or near Holy haven. What must be thought of the state of lighting and pilotage of our rivers when the Duke and Duchess de Nemours, returning from paying a visit to Her Majesty, in a steamer with a Trinity Pilot on board, were run aground on the Bligh sand, and obliged to throw guns and coal overboard to get off after lying there nearly twelve hours. Again at Broadness opposite Grays, vessels are constantly going ashore. Yet when the lighting is left to local boards, to those really interested in the subject, we find a far different state of things; contrast the lighting and admirable buoying of the Mersey up to Liverpool, of the Humber up to Hull, of the Tees up to Stockton, of the Tay up to Dundee; why then should not the approaches, and the channel of the Thames, with as much traffic as all these rivers put together, be similarly lighted and buoyed?

Where too is the Swin Middle light placed? Where are the buoys of the Spitway and Wallet? Why was the stump of the old Maplin beacon left standing till several vessels had been wrecked against it? The neglected state of Harwich harbour, with a Trinity agent resident on the spot, has become too notorious to need further mention here. Only a short time since, it appears in evidence, there was but one small white buoy to mark the Shipwash, a sand seven miles long, and one of the most dangerous in the North Sea. Why was the placing of the Cockle Gat light vessel, at the northern entrance into Yarmouth Roads resisted (even after the wreck of nine vessels in one night in 1823 for want of it,*) 'till the very daily journals cried out shame?

The evidence further states that the Leman and Ower light-vessel is placed five miles distant from the most dangerous part of the shoal; that there is no buoy or beacon to mark the Flamborough Head ledge, Filey Brigg, and Whitby Scars,† where repeated wrecks occur for want of them. That the Fern leading light, to lead between two dangerous shoals, the Goldstone and the Plough, are less than a cable's length apart, whereas the Megstone is placed as if on purpose for the low light, at a mile distant, and would form a quick and excellent mark. Let us take warning by the wreck of the *Pegasus*.

* See letter on this subject in the *Nautical Magazine* for 1841, p. 117, from Capt. Hewitt, the late excellent surveyor in the North Sea.

† Since placed.

In passing to the west coast, the evidence tells us that for 30 years of peace an extent of eighty miles of coast in the Bristol Channel, from Lundy Island to the Longships, has been left without a single light, and now that at last a lighthouse is building on Trevoise Head, it seems very questionable whether it should not have been placed on the Quays, three dangerous rocks which lie a mile off shore, and which, in foggy weather, will assuredly wreck a vessel while running to make the light. It is, too, the opinion of all sailors that the Scilly Island light should be placed on Rossvear, the outermost and southernmost of that dangerous group of islands.

It further appears that the Walney light on the northern point of Morecambe Bay, on the coast of Lancashire, and the only coast light from Liverpool to the Solway, a distance of 70 miles, is a private light, and revolves only once in five minutes! Yet for these and other lights the trade in England is taxed to the extent of £250,000 a-year.

Turn we now to Scotland, and to the evidence of the doings of the "Commissioners of Northern Lights." This Board it appears consists of twenty-five individuals, provosts, baillies, sheriffs, &c., without a single sailor or shipowner, and as might be expected such a constitution is attended with corresponding results. It is true that these gentlemen have a very intelligent engineer, who, as far as engineering knowledge goes, does his work admirably; yet it would be unfair to expect from him that he should know and feel all the wants of sailors. We need not be surprised then to learn that, although many buoys and beacons have been prepared, hardly any are yet laid down, and that the approach to the Caledonian Canal—a Government work on which a million of money has been expended—a channel through which a stream of traffic has been flowing for upwards of a quarter of a century—had no light up 'till the 25th of May last, and at this moment has not a single buoy or beacon to mark the seven dangerous shoals which line either side of its approach.

Farther north we learn that along the whole of the east coast of Sutherland and Caithness, from Tarbet Ness to Pentland Skerries, a distance of 60 miles, there is not a single light; and with the exception of Scalpa on the Lewis, that from Cape Wrath to Lismore, including the Isle of Skye, there is no light for a distance of 150 miles; while the shipping which pay dues on the Scalpa light exceed 284,000 tons annually. We are quite ready to admit that the lights exhibited along the coasts of Scotland are brilliant and efficient, but after 30 years peace, with a surplus fund of £34,000 in 1843, as is shewn by the returns, we are of opinion that there should not still remain 11 lighthouses out of 33, or one-third of the whole, either building or to be built, as was the case on the 1st of January, 1846.

In Ireland the constitution of the Ballast Board is about as anomalous as in Scotland, with the exception that, during the last few years, it has had one sailor on the Board, otherwise it is composed of aldermen, &c., who are self-elected. It enjoys, as in Scotland, the advantage of an excellent engineer, who, as far as engineering knowledge can avail, does his work admirably, but we have no more right to expect an engineer to

be competent to place buoys and beacons than we have to expect sailors to build lighthouses. As might be anticipated then, the coasts of Ireland, although the east coast is lined with sand banks, are notoriously deficient in any such guides to navigation, or, as the Admiralty surveyor in his official report, says, "the lights and buoys on this coast, admirably as the former are managed in detail, are lamentably deficient in number and position." It appears from that report that there are but seven buoys and beacons to mark the several extensive shoals which line the coast between Dublin and the Tuskar, a distance of 70 miles; that eleven additional buoys are required, and especially a floating-light is wanted on Blackwater Bank, a notoriously dangerous shoal in the vicinity of Wexford, and on which forty-three vessels have been wrecked within the last few years, and a lamentable loss of life has occurred. The Coningbeg light-vessel in blowing weather is said to be almost useless—and yet it appears that 18,000 vessels annually pass along through this entrance of the Irish Channel, and by the account of the agent for Lloyd's, during the last thirty years, 170 vessels have been wrecked on the coast of Wexford, and the loss of life has been 270 persons!

On the south coast all sailors complain of the too great elevation and ill chosen position of Cape Clear light; of the want of a light on the Foze Rock, the western point of Ireland; and that there is no coast light from the Old Head of Kinsale to the Hook of Waterford, a distance of seventy miles. The Arran and Cape Clear and Clare lights are from 450 to 500 feet above the sea, and commonly obscured by fog. On the north-west coast of Mayo and Donegal there is a range of ninety miles and no coast light yet lighted. The Innishowen leading lights are on the same level; there is no beacon on the Carrick-vanan rock, which lies in the fair track of steamers from Londonderry to Glasgow and Liverpool, nor any light on Rathlin Island.

It is unnecessary to enter into farther details; facts enough have been stated, and we challenge their disproof, to show that the supervision of our Lighthouse Boards is not what shipowners who are heavily taxed to support them have a right to expect.

But the important question recurs, cannot this tax be lessened, and the peculiarly obnoxious mode of collecting it be avoided? We think it may; and that by the simple mode of placing 1s. a ton annually as light dues on all the tonnage of the country.

The British tonnage registered in 1844 amounted to 31,320 ships of 3,687,231 tons; and of Foreign shipping, that entered the ports of the United Kingdom, 7,247 ships of 143,897 tons. Taking, therefore, the total of British tonnage registered, and the foreign tonnage entering our ports in 1844 at 4,781,128, and charging 1s. per ton, the sum of £239,056 would be produced; or ample to cover the whole expense of maintaining the lights, buoys, and beacons of the United Kingdom in a perfectly efficient state.

Something must be done, the present system cannot go on. We would, therefore, strongly urge that immediate measures be adopted to lessen the dues on shipping, and we think it is the bounden duty of every sailor who has the honour of his country at heart, to come forward and

aid this cause in every *practicable* way, not only on economical, but political grounds of the highest importance to the maritime interests of the kingdom, as the coasting trade has ever been the best nursery for the hardy race of seamen who have so ably maintained the honor and power of the country.

AUTO-BIOGRAPHICAL SKETCHES, *by a Merchant Sailor, illustrative of the State of the British Merchant Service.*

(Continued from page 640 of former volume.)

DURING the time that we were driving onwards before the strong westerly gales, running without our rudder, guided by the position of the yards, and checked off by the jib and stay-sail which were kept set as she came to, either to port or starboard, an accident occurred to the second-mate and myself, which, from the former's want of thought, and headlong disposition, nearly cost us our lives. While the people were below at dinner, I happened to be passing along the deck, and observed that the jib-tack had given way, from the continual shaking of the sail while the vessel was running. I instantly reported the circumstance to the second-mate, who was on the poop. He hastened forward and called on me to lay out and lash the tack afresh. Before going out, I suggested to him the propriety of passing a gasket round the jib to keep it quiet should the brig come to the wind, an event to be expected under the circumstances. As usual, no reasonable suggestion had any influence on this headstrong, thoughtless, blustering man. "What the d—l are you afraid of? lay out," was the reply; and as, of course, obedience is the *lex suprema* on board ship, I went out first, and, preparatory to the scene which I knew must ensue, I got outside the rigging, astride on the jib-boom end, with my arms round the jib-stay. The second-mate had not such a good situation, as he was half supported by the foot-rope, and half by the jib-boom guys. We had scarcely cleared away the remains of the old lashing when the brig came up in the wind, not meeting the resistance of the jib, which was down, she came to till the square sails were aback, then came the struggle for existence. The jib, caught by the wind, flew out to leeward until checked by the sheet which was aft, it flapped up and down with the force of the gale, shaking the jib-boom and topmast in such a manner, as to cause fears that the former would be carried away. Our position became perilous in the extreme, every shake of the jib, rendered it more difficult to hold on; I had a better position than my *friend* the second mate, who bellowed out most lustily for help, with many a hurried prayer for the assistance of a Power he seldom at other times troubled himself with. The noise of the jib brought some of the men up out of the fore-castle, who saw our danger, and hauled the jib sheet aft, the only thing they could have done to increase our danger, as the tauter the sheet was the more violent were the shakings of the sail. Fortunately for us, whose strength was fast going, the mate was apprised of the affair, and the moment he came

on the fore-castle, his eagle eye saw the difficulty, and in an instant he cut the jib whip, the sail at once blew out to leeward like a pennant, and eased our position. The crew then came out to make the jib fast, and succeeded, after great difficulty, in doing so. We got in on the fore-castle completely exhausted, and bleeding both at the arms and legs, the inside of which were entirely denuded of skin, from the tenacity with which we clung to the stay and guys.

It might be thought that such a lesson would have caused the second mate to be more cautious, and think for himself, or benefit by the suggestions of others; like all ignorant people, however, he was extremely tenacious of his dignity, and afraid of losing his authority, while he pursued the very course which ruined both. Not ten days after the recurrence above related, I was again nearly becoming the victim to his ignorance of his duty;—the fore-top-sail was ordered to be reefed, and without a rudder, and no boom-mainsail set, it was necessary the weather-braces should be well rounded in, and the gear well up, before we attempted getting on the yard in the gale which was blowing. Some of the men remarked to him that the weather-brace was not enough in, when he burst out in the usual blustering style, "What the d——I are you growling at? lay aloft and be d——d."

Such was the common style of language we were accustomed to on board the vessel, and which is still too common in the merchant service, where ignorance and vulgarity in subordinates, are not checked by prudence and management on the part of the superiors. This man could get nothing well done in his watch, because the crew hated him, a dislike engendered by his own misconduct. Before the master, on the passage out, he was all activity, hurrying on the work so far as words went, and evidently watching every turn of the skipper's eye, making and shifting sail unnecessarily when he was on deck, and, by his apparent zeal, had gained Jemmy's good graces; he, moreover, stood high in the estimation of the overlooker at home, which always has its influence on board.

Aloft we all proceeded in consequence of the bully's mandate. I got first on the weather yard-arm, and had caught a point before the yard, while I stepped on the foot-rope, beyond the top-mast rigging, when the brig fell off, the sail filled, and sent me flying backwards clinging only with one hand to the point; the top-mast rigging fortunately was filled by my shipmates, one of whom caught hold of me, and supported me with the others' assistance into the rigging; thankful for one more narrow escape, the danger caused solely by one man's incapacity and misconduct. Ever afterwards, when this man had anything to do with bracing the yards for reefing, I took a safe plan by going to the mast head, and sliding down the lift to the yard-arm.

The term overlooker, above mentioned, requires explanation to such of the readers of the *Nautical* as do not sail in Liverpool vessels. An overlooker, then, is a person appointed by the Liverpool owners, to look after and superintend everything connected with the provisioning and fitting of the vessels when in a harbour in England. The master who has been trusted to charter and sail the vessel, and transact her necessary business when abroad, is not considered worthy of the same confi-

dence when at home. He cannot get a single article of stores except as the overlooker thinks fit, and many a poor man with a family, dependant on his exertions, submits to the orders, taunts, and obloquy of such characters, (I write advisedly,) rather than lose his situation. The overlooker is an old skipper, who, by sailing for his employers at a low rate of wages, by keeping the ship's accounts low, by living on ship's allowance, and starving his crew, by hauling the vessel about in Liverpool docks, and cringing to the cupidity of a parsimonious owner, has earned a reputation which, were the secrets of his accounts in foreign ports thoroughly explained, would not be so high. While writing of the class generally, and reprobating a system which, until lately, was peculiar to Liverpool, I admit that there are some respectable men amongst them, who, having families, are glad to get any situation which enables them to live at home. The system, however, is a vile one, which has produced much evil in the merchant service, and caused a master mariner's situation in Liverpool to become every day less respectable, less lucrative, and less comfortable. It can easily be understood that when such men have the providing of stores for the vessels, that a tradesman who understands the matter, can send any quality of provisions he pleases for the consumption of the unfortunate skipper and crew. The fact is notorious; and while the crew are *existing* on putrid beef, and bread alive with vermin, the overlooker is revelling on shore amidst the luxuries which his concurrence with the tradesman procured him. I can easily trace the gradual degeneracy of the body of Liverpool shipmasters to this system; and the master of a merchant ship, who so ably wrote the article in the last *Nautical* should turn his attention to such subjects, and endeavour by exposure, to remedy the condition of the merchant service. Assuredly he will meet with much sympathy, and the assistance of one who wishes the service well, and is ready to give any aid to the good work.

During the whole passage from Charleston to England, amidst all the excitement of our situation, our skipper never came on deck but once. The crew were divided into quarter-watches, as we had only to remain aft on the poop and notice as nearly as we could, how she went, coming up, and falling off, as she constantly did. While the carpenter and myself were one night during the middle watch, standing aft near the place formerly occupied by the wheel, we observed a white figure come up the companion-hatchway, and walk aft. The old carpenter took me by the arm, and whispered, "Guidness! did you ever see the like o'that." Aft walked Jemmy, in a bitter cold night in January, with nothing but his shirt to cover him, and without in any way noticing us, as he walked up to the rudder case, lay down all his length on the wet cold deck, and looked down the empty rudder trunk, remaining in the same position about ten minutes. He then arose, walked deliberately back again, and descended to the cabin without uttering one word, insane as he was from the effects of intoxication. He kept loaded pistols under his pillow, and often threatened destruction to his poor wife, who was the victim of all his insane whims and fancies. He never interfered in any way with the mate in the ship's duty.

On arriving in England the skipper's friends came on board, and removed him in a coach to lodgings; the crew all separated, were paid individually in a few days at the owner's office; no questions were asked, no explanation offered, the money, hard-earned as it was, was handed over to us, with official gruffness by a grumbling cashkeeper; and in a fortnight, I presume, the whole crew were again embarked in different vessels on different voyages. The owner believed the master to be a first-rate man, and I believe he even got great sympathy with his illness as arising from his exertions during the voyage. The owner never gave himself any trouble about such matters. The overlooker attended to the vessel, and the cashkeeper to the accounts, and the sequel will prove that both these parties thought Jemmy, a very excellent skipper. The mate and carpenter, whose exertions should have been rewarded, never even got thanks, and the whole were discharged, no doubt, at the suggestion of the master's friends, while the vessel was put in dock to be repaired.

A few days after my arrival from the last unpleasant voyage, I was asked to ship in a small Scotch schooner bound to Westport in Ireland, for a cargo of oats. As I was indifferent as to my destination, and there were few vessels fitting out for southern voyages, I agreed to go, and found when I joined, the crew consisted of the master, his brother as mate, myself, and ten other seamen. We took on board about fifty tons of coals as ballast; the hatches were put on, covered loosely by a tarpaulin, and our only boat placed on the chocks over the hatchway. There was nothing like discipline on board this craft,—master, mate, and the others working together; any one cooked, and every thing was done in a very free and easy dirty style.

We jogged on our passage quietly with variable winds, until we got past Rathlin island; the wind was southerly, inclining to the westward, and by the time we were abreast of Innistrahul light; it was south-west, blowing an increasing gale, with thick rainy weather. The master was strongly advised by his brother, at night fall, to bear up for Loch Indal, which would have been the most prudent course under the circumstances. He was, however, a man of no mind, of a vacillating timid disposition, and after talking about doing it for an hour or two, could not determine until it became too late. The schooner was kept on the port tack during the night, the gale fast increased, sail was shortened, until we were under a storm trysail, and inner jib, and making as much lee as head way. Long before daylight all chance of our fetching Loch Indal was at an end, and no other course left than to remain driving on the port tack until the gale ceased, or altered its direction. It continued, however, during the day a hard gale; and during the darkness of the night, the skipper's fears made him miserable, lamenting his not having gone into harbour, and speculating on the prospect of driving down amongst the Western islands; still he took no means to ascertain her position, or the vessel's drift, the log was never hove, no calculation made as to the leeway, courses seldom observed, the tiller being lashed a-lee from the time the craft was laid to. The night continued dark, rainy and miserable, the wind blowing a heavy gale. As the night wore on the skipper's fears increased, he began to talk in a very lugubrious tone; his wife and family

were spoken of in a despairing mood, interrupted by occasional "I wonder where we are?" Morning brought with it no cessation of the gale, or melioration of the dark rainy weather, we had no fire during the past day or night for cooking; and we were all taken into the cabin, the fore-castle hatchway being battened down for safety. Brought together as we were in the cabin, the skipper's pusillanimity became more apparent; instead of now trying to make calculations as to our whereabouts, he hazarded guesses; even asking me what I thought. These guesses and questions were interrupted by apostrophes to the Deity, to his unfortunate condition, and every thing but his own incapacity and want of firmness. He attempted to read his bible, but his fears prevented him; still he kept it in his hand, and, notwithstanding the gloom he contrived to throw over our minds, I can never forget the ludicrous figure he cut, sitting in the doorway of the stateroom, with a dirty red night cap on his head, his bible in his hand, crying and sobbing bitterly, while he uttered occasional growling lamentations about his wife and family.

The forenoon passed over in this way, no cessation in the gale. On the skipper's assurance that we must go ashore on the wild coast of the Long Islands, the scene continued so long the same, that all the impressions of the solemnity of our situation, lightly made on the youthful mind, wore off; there was a something within me which assured me it would not end fatally; what the feeling was, how it was generated or fostered, I cannot explain. Hunger began to assert its right to alleviation. The skipper took no food, and offered none to the crew. I was afraid to ask for bread, lest he might think me a hardened sinner, which he assuredly would have done, but recollecting that when we left the fore-castle there was some beef and bread in the kids, I went out into the steerage, knocked down two of the bulkhead boards, let myself into the hold, and groping my way over the coals, reached the fore-castle, where I found the beef and bread, from which I made a hearty meal, and felt not only much refreshed, but much less alarmed as to our safety. There is something wonderfully soothing in a good dinner, and dry beef and bread formed a delicious meal to me, hungry as I then was. My appetite appeased, I then began to cogitate over my situation. Of my own personal knowledge I knew little, although the skipper had shewn me the chart and asked my opinion. I fancied our position could not be either safe or pleasant. I secured some letters from my chest, and then went aft to the cabin, when the skipper formally announced to us that he considered our situation very dangerous; that, in fact, there was no hope, as it was a high rock-bound coast on which we were driving, where there was no chance of saving our lives.

From occasional visits to the deck we could easily find out that the sea was increasing in magnitude, while the weather remained as thick and gloomy as ever, preventing our seeing any distance from the vessel. About 1 p.m. a heavy sea struck the schooner, washing away the boat, bulwarks, main hatches, (never battened down,) and cabin skylight, at the same time shifting the coals into the lee side, and throwing the craft on her beam ends. The cause of our misfortune and its consequences were soon apparent. The wretched skipper became paralyzed and helpless,

the mate however, followed by the crew soon scrambled on deck; the throat and peak halliards of the trysail gaff were let go, and the sail got down. While another man and myself went forward, and loosened and set the jib, or rather partially set it, the helm being at the same time put up. During this time every surge she took into the sea, the water rushed into the hold, and the vessel must either be got on the other tack or she would soon sink. It is impossible to describe how intensely interesting the moments became, as she gradually paid off, on her beam ends as she was. I never expected to see her wear. She ran about a quarter of an hour, when a sea came rolling along farther aft than usual, and giving her a lift on the quarter, sent her spinning round on the other tack, we soon hove up the trysail with the winch, the jib blowing away before it could be secured; and nailing some spare tarpaulin over the main hatchway, we went down into the hold, and trimmed the coals amidships, afterwards pumping out the water, which had entered by the main hatchway and skylight. Our exertions over, and order as well restored as it could be, the question again came to be eventually asked, "Where are we?" The mate roused by his late exertions went to the main cross-trees and looked anxiously out to leeward; the weather however remained thick, and prevented his seeing any distance.

The craft was again wore, as it was supposed she would keep longest clear of the land on the port tack. This evolution was just completed, when, about 4 P.M., the weather cleared up, and, towering high above our mast heads, and close to leeward, were the immense precipitous cliffs of Barra head. It was ascertained at a glance that the vessel had made more lee way, and less head-way than was expected, she was again quickly wore round, the reefed fore-sail set, and we just scrambled narrowly past the cliff. Once past, we had room, and knew our position. The mate, who had once before been in Loch Bracedale in the island of Skye, proposed going there, which the skipper at once agreed to. Away then we went at once before the wind under our tiny top-sail, and, a few hours after our narrow escape, we were safely riding in security in $3\frac{1}{2}$ fathoms water, in a most beautifully sheltered arm of Loch Bracedale, and within 500 yards of a farmer's house.

Here we remained refitting, repairing bulwarks, and such like necessary operations for a few days. The weather soon becoming finer and more settled, our skipper, however, would not venture out; he had not recovered his fright, and for three weeks we remained at anchor, although several opportunities for sailing occurred. We found the population here widely spread over the ground, all speaking Gaelic amongst themselves, although the better classes could also speak English. We were within a mile of the parish church, where the clergyman resided, a worthy member of the Establishment. His services were in Gaelic, but when he became acquainted with our arrival, he intimated his wish to come down to the farmer's house close to the vessel, and preach a sermon in English, for our benefit solely, which he accordingly did during the three Sundays we remained. While here the clergyman took the opportunity to go in our boat to the upper end of the Loch to visit a distant part of his parish, and celebrate the sacrament of the Lord's Supper. This was

to me a very interesting visit, as I got much information from listening to the minister's conversation during our passage up; and seeing a large congregation assembled together in a valley, beautifully situated between two gradually rising heath-clad hills, to worship God, and join in celebrating his praise in the open air, made me revert my thoughts to the ancient days of our church, when our covenanting forefathers were driven by necessity to worship in a similar manner.

In the farm house, and with the farmer and his very estimable family, whom we were so near, I became very intimate. When I pulled the boat ashore with the master, he used to go into the parlour with the farmer, while I went by invitation into the other room amongst the family. Many a happy hour I spent amongst them, admiring their primitive manners and simplicity of mind, while my rather common fare on board was luxuriously added to by constant presents of eggs, butter, milk, and fish. While I used to be asked amongst the family, my shipmate, a rough, unlettered, southern sailor, belonging to Yarmouth, one of the genuine tobacco chewing sort of tars, was wont to go into the kitchen, where there were two strong built highland lasses as servants. Bill used to get close to the turf fire, and smoke his pipe in comfort, until, one evening, he began to entertain the two servants with a long account of his first spree on shore, after a long voyage, going on to describe his riding in a coach with his shipmates and their girls. The simple highland lasses at first did not seem to understand him, gradually, however, they became alive to the import of his communication; their virtuous indignation was roused, they ordered him out, he looked amazed, and could not understand them, so little did he know what virtue was, until the stalwart dames seized on poor Bill and forcibly ejected him from the premises, with many an unpronounceable Gaelic gesture to testify their abhorrence of the fault committed.

The wind at length became absolutely fair, with fine clear weather, and even our un-energetic skipper gave orders to get under way. We sailed, and had got as far as Barra Head, the scene of our late difficulty, when the wind came away from the southward, and the skipper, without waiting an hour, bore up for Loch Boisdale, a place of refuge nearer than the one we had left. Here we remained ten days, our provisions became scarce, we went over the farm-houses in quest of some, and got a few potatoes and herrings, but here coffee or sugar were not to be had; oatmeal was procured, and porridge ordered for breakfast and supper. Poor Bill could never take it, and many a growl he uttered against the stuff, the country that produced it, and the people who could exist on it. Neither beef nor pork cured, could be purchased; but we heard that a farmer across the island, about five miles from our anchorage, had a large pig to dispose of. We went across; the skipper concluded the bargain, and many a laugh we had at the progress across the island, Bill and myself alternately driving, and I yet distinctly recollect the skipper getting into a passion because I said I could not kill it. I soon afterwards gained experience in the pig-killing line; and I believe there are few sailors who do not in a measure understand the art.

REMOVAL OF THE LADY FEVERSHAM.—*River Tyne.*

AN unsuccessful attempt was made on Monday to blow up the wreck of the *Lady Feversham*, which has lain upwards of twelve months in the main channel of the river Tyne, doing serious injury to the harbour, and, by obstructing the navigation, causing great damage to shipping, especially during the prevalence of stormy weather. This vessel, it may be remembered, was proceeding to sea, in the month of November of last year, coal laden, when she grounded on a shoal forward, and heeled over as the tide receded; and, on the overflowing of the tide, she filled with water; since which all attempts to raise her have been futile. The Universal Salvage Company (an offspring of the speculative mania of last autumn,) first undertook the task by means of large tight air bags, to be attached in a collapsed state to chains passing round and underneath the vessel, and then inflated by means of an air-pump worked by a powerful engine. The buoyancy of the air bags, it was supposed, would raise the vessel, but after repeated experiments, extending over several months, the project was abandoned as hopeless. The wreck was then sold, as it lay, to a party here for £250, and further attempts were made under his direction to raise the vessel by means of lighters; but this plan also proved a failure. In the meantime complaints were made to the Corporation of Newcastle, who are conservators of the Tyne, by the owners and masters of vessels frequenting the harbour, of inconvenience and damage arising from the wreck obstructing the navigation of the river; and by pilots and others of a diminution of water on the bar from silting up attributed to the same cause, there being, as is alleged, nearly two feet less depth of water on the bar now than there was twelve months ago. Under these circumstances, the Corporation, having afforded every facility to the parties in their various unsuccessful attempts to raise the vessel, determined to take the matter into their own hands, and blow up the wreck by means of gunpowder.

This operation was entrusted to Mr. Brooks, the resident engineer of the Corporation; and two parties, provided with helmets, were engaged and brought down from London to perform the submarine works. The plan adopted was to drive four piles, two on each side of, and about ten yards from, the vessel; and by means of these a raft consisting of four logs of fir, eighty feet in length, was moored lengthwise over the vessel. On this raft were placed the main wires, which were carried along seven other piles, to a galvanic battery in a craft moored about fifty fathoms from the wreck. Ten tin cylinders, containing each from one hundred to one hundred and seventy pounds of gunpowder, were sent under the bilge of the vessel fore and aft, five on the larboard and five on the starboard side; and the wires penetrating these cylinders extended and were attached to the main wires on the raft. The main wires, which were above the surface of the water, were covered with cotton and India rubber varnish; and those connecting them with the magazines in the water had an additional coat of tar, with an outer covering of list. The magazines were sunk to a depth of about twenty-three feet; and they were affixed to the vessel by means of single sheaved blocks, having rattling lines rove through them, which had been previously bolted to the vessel by the use of the diving apparatus. This was the work of Thursday, Friday, and Saturday in last week. For the simultaneous explosion of the magazines there were three of Smee's batteries, each having ten cells, with double plates of zinc and platina, six and a-half inches by five; and a fourth battery of iron and zinc plates equal to twenty cells of the zinc and platina; and they were charged with sulphuric acid diluted in the proportion of six parts to one.

The interest excited by these operations was general and intense; upwards of fifty thousand people were congregated on the high ground overlooking the river on both sides, a considerable proportion of whom had come from Newcastle, Sunderland, and various other places in the neighbourhood, the intention of the Corporation to blow the vessel up having been announced by advertisement in the public prints. The Mayor and the members of the Town-Council had a steamer engaged for their accommodation; and several other steamers were well freighted, but they were not allowed to approach within a considerable distance of the wreck, so that those who occupied the river banks had decidedly the best view. By ten o'clock, the water having then nearly ebbed, the fixing of the wires was commenced, and occupied upwards of an hour. Seven of the cannisters were run down to their berths, and secured there in less than half an hour. Owing to the accidental fouling of the other ropes, a little delay occurred in placing the remainder, the divers having to be put in requisition. By one o'clock, the whole was completed; and then the batteries; a black flag having been hoisted at the mainmast of the *Lady Feversham*, to indicate that all was in readiness to effect her destruction. The firing of a gun was the pre-arranged signal for the explosion; and that having been given, the galvanic circle was completed, and a large body of water rose at each end of the wreck, to the height of about ten feet. This effect being much less than was anticipated, an examination was made, when it was found that only two of the cannisters had exploded, and that a third one had been torn away, the others remaining precisely as they were placed. The cause of the failure is attributed by some to the inferior quality of the cement, by others, eminently qualified to form an opinion on the subject, to the cannisters, which were made by some ordinary tinsmith, being much too slight for the purpose. Others were subsequently manufactured by Mr H. Watson, of the High Bridge, under whose charge the whole of the galvanic operations were conducted. The effects produced were, however, a large hole made under her bilge on her larboard bow, and her butts having all started. Some fragments of the wreck were found floating on the surface of the river after the explosion, but, if all had gone off, as was expected, the destruction of the vessel would probably have been completed.

The operations were renewed on Wednesday, but were confined to the removal of the fore division of the ship. Four magazines, containing 190 lbs. each, viz., two on the larboard and two on the starboard bow, were simultaneously exploded, realizing the most sanguine anticipations of the engineer; from her stem to ten feet abaft the foremast was blown away into the air, together with at least 150 tons of coal, forming a black mass above fifty feet in height. The charges had been affixed from twenty-two to twenty-four feet below the topside of the ship, so that the destruction was most complete.

Yesterday, Mr. Brooks, in an equally successful manner, effected the entire removal of the wreck abaft the main-mast. The magazines were brought from Newcastle shortly after one o'clock, and five were promptly charged and hauled down to their positions under the counter of the wreck, three on the larboard and two on the starboard side, containing together 1,050 lbs of powder, which were simultaneously exploded, forming a splendid *jet d'eau*, inasmuch as about 1,500 cubic yards of water were with the wreck thrown up into the air. We are happy to be able to say, that the great obstruction to the navigation of the Tyne will no longer be a source of complaint to our shipowners.

In the Thames, there is, we believe, a standing order of the Navigation Committee, that no wreck shall be removed by blasting within twenty-five miles of London, yet in our harbour this work has been effected without the slightest accident, although the wreck was within 500 feet of the houses built

on the shores of North and South Shields. This is the only instance of simultaneous explosion having been successfully effected under water, previous operations of a similar character having been by successive discharges, a tedious and unsatisfactory process, inasmuch as the effect of one explosion is to render it difficult to affix subsequent charges in an equally favourable position, till the fragments caused by the first explosion have been removed.

THE BAROMETER.—The following remarks on the action of the Barometer in the vicinity of land confirm those of our last and former volumes.—

It is nearly generally known that the barometer rises or falls as a northerly or southerly wind comes; yet there are many local causes which affect its rising and falling. For instance proximity to the land; on coasts of Australia a land wind causes a fall, and a sea breeze a rise in the instrument. Once a fresh land breeze at Swan River, West Australia, caused such a fall in my barometer that preparations were made to run out of the roads into safe anchorage. Capt. Flinders says, that, on the east coast this is also the case, and my observations have shewn the same result. Whether this rule will be applicable to other coasts I am not aware, yet I have seen the curve which the barometer performs in settled weather in the tropics, considerably affected by a land wind.

The general use that a barometer is put to at sea is to indicate if a gale is approaching, and not looked at to shew a shift of wind and the quarter it will come from. Still, I think, if the *thermometer* is observed at the same time as the barometer, and the changes of both accurately taken, if a change of wind is coming, the quarter from whence it will blow may be (especially by comparing former observations,) surmised, as it appears to me, that a volume of atmosphere is tempered by the coming wind and precedes it. If, for instance, with a southerly wind, the barometer rises and the thermometer falls, it may not indicate actual fair weather, but a north wind only; but if both rise, it is probably for fair weather. This can only be brought out by numerous observations of both instruments and winds, also noting if the land is near. If the changes of wind could be found to approximate to the truth, it would be of great advantage to navigators, though, of course, not to be too much relied upon. I particularly observed these results in the *Pottinger* from Gibraltar to England.

M. MACKENZIE.

EXPLOSION FROM FIRE DAMP.—Dr. Miller, of H.M.St.-v. *Sidon* dating from Greenhithe, Dec. 12, sent the following in a letter to the *Times*:—"Explosions from Fire-Damp, or carburetted hydrogen, on board of steam-ships being very rare, and the possibility of so serious an occurrence not generally known; I have to state that a violent explosion of this nature took place on board the *Sidon*, early this morning. The after-midship coal tank contained about sixty tons of coal, and the second engineer having removed the cover, he introduced a lamp into the tank, when the explosion immediately took place. The engineer had his face and hands severely burnt, and three other person were injured, but not seriously." We believe the fire-damp was generated by the coal bun'ers having been filled with water by order of Sir C. Napier, after the coals had been consumed, when the *Sidon* was towed down the river with the Lords of the Admiralty on board.—*Nautical Standard*.

NULL.—Arctic Expedition.—The Truelove, Parker, the last of the whalers from Davis' Straits, arrived at this port on 23rd ult., and reports that no intelligence whatever had been heard during the season of the *Terror*, commanded by Sir John Franklin, and the *Erebus*, in the command of Captain Crozier, the vessels sent out by the Admiralty in the spring of 1845, to seek a north-west passage. They were supposed to be up Lancaster Sound, but, on account of the great body of ice to the north, none of the whalers had this year penetrated in search of them.

NAUTICAL NOTICES.

NORTHERN LIGHTHOUSES.—We understand that at a general meeting of this board, which took place on the 18th inst., it was resolved to erect five new lighthouses, one upon the island of Sanda, lying off the Mull of Kintyre, to lead through the dangerous navigation of that passage to the Firth of Clyde. One upon the island of Devaar, to open up Campbelton Loch, as a harbour of refuge. One in Lochindaal, Islay, to open it up as a harbour of refuge. One in Kyle Akin, Skye, as a guide through that inner sound; and one on the island of Græmsay, in Hoy Sound, to open the important harbour of refuge at Stromness.

These resolutions of the board will be hailed with great satisfaction by the shipping interest, who have been pressing for the erection of the lighthouses in question, which we believe the board, owing to their other important engagements, have been till now prevented from conceding.

The various intimations to mariners which have appeared in our advertising columns during the past season, must have satisfied the trade of the importance of the boards' other engagements. We have intimated the exhibition of three new lights, viz. Covesea Skerries, in the Moray Firth; Channory Point, leading to Inverness and the Caledonian Canal, and Cromarty Point, opening up the harbour of refuge of the Cromarty Firth. We have also intimated the erection of three beacons and seven buoys in the Firth of Forth, and of five beacons and seven buoys in the Firth of Clyde—for none of which is any charge made on shipping. The board, we understand, also engaged in the erection of sea-lights at Noss-head, on the eastern coast of Caithness, and at Ardnamurchan, the western point of Argyleshire, are on the eve of announcing a light to open Loch Ryan as a harbour of refuge in the Clyde, and are making arrangements for erecting beacons and mooring buoys in the Beaully Firth, to facilitate the access to the Caledonian Canal, and also in the Moray, Cromarty, and Tain Firths. When to all this, it is added, that about six months since we published an intimation of the reduction of 50 per cent. on the light duties levied from the coasting trade, we think the shipping interest will concur in our opinion that the board is deficient neither in activity nor in attention to their welfare.—*Edinburgh Advertiser.*

H.M.S. Espiegle, River Min, 29th April, 1846.

SIR.—I have the honor to forward for your information, the bearings of a Rock that Her Majesty's Sloop *Espiegle* struck on whilst proceeding up the River Min on the 9th April, 1846, after passing the island at the South end of the George, having only $1\frac{1}{4}$ fathoms on it at low water.

Losing-sah Pagoda,	S. 48° W.
North end of Pagoda South Island	S. 74 W.

N.E. extreme of Island at the South end of the
 George N. 58 E. $\frac{1}{4}$ mile.
 South extreme of smaller Island S. 40 E.

Another Rock with 2 fathoms on it, lies in a W.b.S. direction from the above, at about $\frac{1}{2}$ cable's length distant, there being 4 fathoms between them.

I have the honor, &c.,

(Signed) T. P. THOMPSON, *Commander.*

To Captain Charles Talbot, *H.M.S. Vestal, &c.*

H.M.S. Plover, Hongkong, April 1st, 1846.

SIR.—I have the honor to transmit to you, for the information of the Commander-in-Chief, an account of the following dangers upon the East Coast of China, the positions of which have been recently determined by the Surveying-vessels under my orders.

1st.—Sunken Rock having 14 feet over it at low water, at the Northern end of Duffield's Channel: when upon it the Northern extremes of the Northern Islets off Foo-too-shan are in one, bearing N.W.b.W. the nearest Islet being distant two cables, and the East Point of Foo-too-shan is in line with the West end of Tree-a-top bearing S.W.

2nd.—Rock discovered by the *Will O' the Wisp* off the Heishan Islands.

There is 8 feet water upon it; the Mushroom Rock bears S. $51\frac{1}{2}^{\circ}$ W. 1.74 mile, and the North Islet of the Group (except the Mushroom) is in line with the East end of Crag peak bearing S. $26\frac{1}{2}^{\circ}$ W.

There is also another Rock N. 22° W. $2\frac{1}{2}$ cables from the Mushroom, which is awash at low water; when upon it the West end of Saddle Island bears S. 31° W.

3rd.—Rock in the Kenpaimun.

This rock on which the *Vixen* and *Wolverine* hung, has 13 feet over it at low water. The bearings upon it are:—

Kenpae point	N. 66° E.
Fort on the North shore	N. 32° E.
Ferry-house	S. 48° W.
Highest hill over Kenpae point	S. 30° E.

Kenpae point in one with the North end of Passage Island, (the Northern Islet at the entrance,) bearing N. 56° E. will place you South of it, which is the best side to go, as the Channel on that side is $\frac{1}{4}$ cable, while to the westward it is only half a cable wide.

Erratum.—In the Sailing Directions for the Chusan Archipelago, the bearings of the Rock at the entrance to the Sarah Galley Channel have been transposed, and should stand thus; Jansen Rock S. 75° E. 1.3 mile. Highest part of Oswamong S. 25° W.

I have honour, &c.,

(Signed) RD. COLLINSON, *Captain.*

To Captain Charles Talbot, *&c.*

H.M. Sloop Wolverine, Hongkong, 25th May, 1846.

SIR.—I have the honor to inform you, that on the 14th April last, when working up the Coast of China about Red Bay in H.M. Sloop under my command, on standing off shore under all plain sail, going about 2 knots, soundings 7 fathoms, the ship struck upon a Sunken Rock with bearings.

Low Hill on the Beach	W.b.N.
Southern Black Rock off the East end of Red Bay	N.E.b.E. $\frac{1}{4}$ E.
Nob Rock	S.b E. $\frac{1}{4}$ E.

Which from its being the same distance from the shore, may prove to be

the reef mentioned by Captain Collinson in his sailing directions as bearing from the Low Hill on the beach N.b.E.

On throwing all aback she went off immediately.

I have the honor, &c.,

(Signed) W. J. C. CLIFFORD, *Commander*.

His Excellency, Rear Admiral Sir Thomas Cochrane, Knt. C.B. &c.

H.M. Steam Vessel Spiteful, 3rd August, 1846.

At anchor in Lat. $0^{\circ} 36'$ North, Long. $105^{\circ} 19'$ East.

SIR.—I have the honor to inform your Excellency, that the Master of H.M. Steam-vessel under my command, has sounded over the Shoal on which the ship *Frederick VI.* is now lying aground, and reports that it is a round patch of about 3 cables' diameter, with a rock in the centre, with not more than 2 fathoms water on it, gradually deepening from 3 to 4 fathoms a cable length all round, then rapidly 5-7-9-11 and into deep water 17 fathoms.

2.—The weather yesterday and to-day has been hazy, precluding observations, except sights in the morning which gave longitude $105^{\circ} 19'$ East, (not very trustworthy,) but the Master of the ship assures me, he had frequent sights and made the latitude $0^{\circ} 36'$ N., longitude $105^{\circ} 18'$ E. High land is seen about S.W. and yesterday evening Islands were seen like specks about W.N.W.

I have the honor, &c ,

(Signed) WM. MAITLAND, *Commander*.

His Excellency, Rear Admiral Sir Thomas Cochrane, Knt. C.B. &c.

Hydrographic-Office, Dec 2nd, 1846.

COAST OF NORWAY AND SWEDEN.—*Lights at Houge Sound and at Nidingen.*—The Swedish Government has given notice, that on the 1st December, a fixed light, visible in all directions, was established on the Sor Hougen Rock, off the northern end of Vibrands Island, in order to guide vessels coming from Bommel Fiord into Houge Sound.

The tower stands in latitude $59^{\circ} 25' 15''$ N., and longitude $5^{\circ} 15' 13''$ E. of Greenwich, and, being 72 feet above the level of the sea, may be seen at the distance of 12 miles.

The Swedish Government has given further notice, that, for the former coal fires on the Nidingen Rock in the Cattegat, two fixed lights by lamps were substituted, on the 1st of last October.

These lights stand in latitude $57^{\circ} 19'$ N., and longitude $11^{\circ} 56'$ E. of Greenwich, they are 100 feet apart on an E.N.E. and W.S.W. bearing (by compass,) and, being 66 feet above the level of the sea, may be seen at the distance of 12 miles.

Hydrographic-Office, Dec. 4th, 1846.

COAST OF NOVA SCOTIA.—*Revolving Light on Beaver Island.*—A revolving light has been established on the S.E. part of the outer Beaver Island on the coast of Nova Scotia.

The light revolves every two minutes, during which it is visible one minute and a half, and invisible for the remaining half minute. It stands 70 feet above the sea, and may therefore be seen 15 miles.

The lighthouse is a rectangular white building, with two black balls painted on its seaward face. It stands in latitude $44^{\circ} 48'$ N., and longitude $62^{\circ} 20'$ W. of Greenwich.

The light bears from the Outer Bird Ledge	W. $\frac{3}{4}$ S. (Mag.)	4 $\frac{1}{2}$ miles.
Do. do.	Beaver Shelf N.W.	1 $\frac{1}{2}$ "
Do. do.	Yankee Jack E. $\frac{3}{4}$ N.	8 "

From the Lighthouse Black (or harbour) Rock bears N. $\frac{3}{4}$ W. 3 miles.

Vessls intending to run for Beaver Harbour, should give the Lighthouse Island a berth of three-quarters of a mile, to avoid a reef which projects from it to the eastward.

South-West Light on St. Paul's Island.—A Bell has been added to the S. W. Lighthouse on St. Paul's Island, and is tolled during the continuance of foggy weather.

ROUTE FROM SINGAPORE TO SYDNEY.

(Extract from the *Hongkong Register*.)

H. M. Steamer, Vulture, Hongkong, Sept. 21st, 1846.

SIR,—The rapid strides of steam having extended its usefulness, under the auspices of the enterprising Peninsular and Oriental Steam Navigation Company, during the past year to this distant station, and anticipating a yet further extension to the more salubrious climate of Australia, to which a more ready communication than hitherto is most desirable; I am led by the article in the *Swan River Inquirer*, relating to this subject, to offer an opinion, and endeavour to shew by what route those interesting colonies, at present as remote from each other as from the mother country, might be brought together and share alike in the advantages, whether political or domestic, about to be offered.

It is a well established fact, that, during the months of November and April (inclusive) along the north shore of Australia, and Torres Straits, the N. W. wind blows, and during the remaining portion of the year the S. E. trade is steady. It is also observed that during the N. W. monsoon on the north coast of Australia, easterly winds prevail more or less, though not to be depended on on the south coast through Bass Strait; and in the opposite season I am disposed to think the S. E. trade hangs more from E. S. E. and easterly, and certainly the westerly wind is met with in a lower latitude on the west coast.

Upon which data I will base the following propositions, viz.:—

1st, That during the months of November and March inclusive, the Australian branch leaving Singapore should proceed *via* Port Essington and Torres Straits to Sydney, returning south about through Bass Strait, calling at George Town (Tasmania) or Adelaide, and Swan River.

2nd, That during April and October inclusive, leaving Singapore should proceed *via* Swan River and Bass Strait to Sydney, returning through Torres Straits.

In point of actual distance, I conceive there is only 600 miles in favour of the eastern route, which becomes nullified by the prevailing winds favouring each route in the proposed seasons, viz.—the communication with Sydney will be about equal throughout the year.

Port Dalrymple (George Town,) appears a more convenient intermediate station between Sydney and Swan River than Adelaide, there being about 200 miles saved, besides the claims of all Tasmania entitling her to the preference.

With respect to the two routes of Torres Straits (commonly designated the "Inner" and "Outer,") I should make choice of the Inner, as with the use of Capt P. P. King's excellent chart of the N. E. coast with the subsequent

additions by Her Majesty's ships *Beagle*, *Fly*, and *Bramble*, the navigation within the Barrier reefs may be compared to that of a well buoyed harbour with smooth water, (a luxury always fully appreciated by steam vessels.)

Wishing all prosperity to Australia, I remain, &c.,

C. PASCO, *Lieut. R.N.*

FALMOUTH, Nov. 5th.—The barque *Madonna*, Miller, from Moulmein, arrived here, reports to have experienced a violent shock, as if from an earthquake, which lasted two minutes, June 21, lat. 1° 20' N., long. 95° E.—*Shipping Gazette*, Nov. 6th.

MACASSAR.—A Free Port.

The Governor-General of the Netherlands India, &c., makes known that he—

Wishing to promote the trade and industry of the manifold islands and possessions of Netherlands India by the establishment of a main central point suitable for trade or barter, where the different articles of produce from the said islands and possessions can be readily realised, and, where, on the other hand, all their wants may be supplied in sufficient quantity and variety;—Considering that the capital of Macassar, from its excellent geographical position, good roadstead, and the commercial spirit of its inhabitants, appears destined, in preference to any other possession in Netherlands India, to become a great central point of trade between those possessions and the neighbouring countries;—And wishing to remove all the obstacles precluding the full enjoyment of the natural advantages which Macassar offers, and by which trade and navigation are impeded and obstructed;—Has thought fit and understood to decide:—

1. That from and after the 1st of January, 1847, the town of Macassar shall be a free port, where goods of every description whatsoever, and without reference to the flag, may be freely imported and exported without payment of duties, either on the cargo or of tonnage, harbour, or anchorage dues on the ships, and without the traders being subject to any formalities on the score of import or export duties.

2. That, therefore, the regulations bearing on the importation, the sale and possession of fire arms and gunpowder, fixed by the decree of the 8th of August, 1828, No. 26, for the harbour and town of Macassar, are abrogated, and consequently the free admission and exportation of munitions of war at the place is granted by these presents.

3. That importation and exportation of opium at Macassar will likewise be free, and subject to no restrictive regulations, with the understanding, however, that the traders in opium will have to conform to the local regulations in reference to the opium farm.

4. That of the Chinese junks which are discharged at Macassar, the tax imposed by article 20 of the publication of the 28th of August, 1818, and the resolution of the 4th of October, 1829, will no longer be claimed, nor that on behalf of the Chinese hospital, proscribed by resolution of the 5th of March, 1832, No. 1.

5. That on the remaining places situated in the Government districts of Macassar, no import or export duties will be levied on goods imported or exported by native craft from or to Macassar, whilst no square-rigged vessels will be admitted at those ports.

6. That the Governor of Macassar will be at liberty to admit foreigners, and to allow them to establish themselves temporarily at the said place for

the purposes of trade; and that no one shall pretend ignorance on this score the present notice will be published and posted wherever it is customary.

Given at Buitenzorg, Sept. 9, 1846.

ARGUIN and its Victims.—Reward to Capt. Isemonger.—A handsome medal has been presented to Capt. Isemonger, of the brig "Africanus," for his gallant conduct in liberating from captivity the master and crew of the Margaret, on the island of Arguin, on the western coast of Africa. This laudable act of Capt. Isemonger occurred in 1844. It might be remembered that the crew of the Margaret had been in the hands of the natives of the island for a considerable time, by whom they had been most cruelly treated, and many efforts had been ineffectually made by the masters of our merchant vessels to rescue them.

At length their situation became known to Capt. Isemonger, who fortunately happened to be upon the coast. This gentleman having considerable influence with the King of Trazers, who was friendly disposed towards the English, prevailed upon that monarch to send immediately to Arguin to order the restoration of the captives. Capt. Northwood, and all his men who could be moved, were accordingly placed in an old fishing boat, escorted by ten of the natives, and, after a painful voyage of nine days, were delivered over to their gallant benefactor, and arrived safely in London in August 1846.

This is a brief narrative of the patriotic conduct of Mr. Isemonger, in a case in which the lives of eleven of his fellow countrymen were all but sacrificed to the barbarous vagaries of the natives of an island then but imperfectly known to this country. In addition to the medal to which we have referred, we understand that the government have made Mr. Isemonger a handsome pecuniary recompense. It is gratifying to record the national acknowledgement thus evinced of the laudable exertions of the commander of the Africanus.

PIRACY AT THE MOUTH OF THE DARDANELLES.

From the Leith Herald, Dec. 1846.

From the declaration of the master, mate, and one of the seamen of the schooner Jane Innes, of Leith, belonging to Mr. Robert Innes, shipbuilder, emitted before Her Majesty's Vice-Consul at Constantinople, we learn the following particulars regarding an attack on that vessel by Greek pirates, off the island of Tenedos, on the 11th of October last. The Jane Innes sailed from Cardiff on the 9th of September, with a cargo of iron, for Galatz. After passing Gibraltar the vessel encountered very severe weather, in which she sustained some damage; on the 10th of October they came to anchor, between Tenedos and the main, and remained there all the following day. At 8 p.m. on the 11th the watch was duly set, *that duty being assigned to William Forbes, an apprentice; the captain went to bed about half-past 8, all the crew, with the exception of the watch, having previously turned in;* but about 10 o'clock he was awakened by a noise on deck, on which he jumped out of bed and called to the mate. Immediately after three men, apparently Greeks, ran down the cabin stairs, each armed with a drawn cutlass, a brace of pistols, and a dagger. One of the pirates seized the captain by the throat, and holding the cutlass to his breast, made signs for money. The captain endeavoured to make them understand that he had none, on which he was struck twice on the face, and caused to open his chest and turn out the contents, from which the pirates took a purse with a few sovereigns and a variety of articles of clothing. Not satisfied with this, one of them held a pistol to the captain's head and demanded more money, but, being satisfied that he had

no more, they proceeded to ransack the cabin, and carried off the chronometer, a watch, telescope, knives, forks, &c., together with a large quantity of stores. The pirates then tied the captain and mate, with their hands behind their backs, each in his own berth; and, after having fastened the cabin doors with a rope, they went on deck.

While these proceedings were taking place in the cabin, the hatch was nailed down on the crew in the fore-castle. They were awakened about the same time as the captain by a scream from the watch, and one of the men was going on deck to see what was the matter, when he saw two cutlasses over the hatchway; he was immediately thrust back, and the hatch fastened down. The crew then broke through the bulkhead into the hold, and, getting near the cabin, they asked the captain if they should break in there, but were told not to do so, as the pirates, were all well armed.

After remaining on board from an hour to an hour and a-half the pirates departed, and the captain and mate then managed to release each other, and went on deck, when they saw what they conceived to be the boat, with the pirates under sail, standing in shore. On going forward they found that *the apprentice on watch had been murdered*, and on examining the body they found two deep wounds on the breast, and an extensive one on the back of the head. They then released the crew, and discovered that the deck had been cleared of every portable article, including sails, old canvass, and spunyarn; all the studding-sail halyards, tacks, spare lines, compass, binnacle cover, all the ropes on deck, a half cask of beef, and another of pork. They had, in fact, helped themselves to almost everything, except the standing rigging. Afraid of another visit from the pirates, the *Jane Innes* got under way, and dropped down within a quarter of a mile of an American vessel that was lying close to Tenedos. The apprentice was buried next day, and the vessel arrived at Constantinople without further mishap, except that they were put into quarantine off the Dardanelles on account of their communication with the pirates.

It appears to us that this occurrence calls for most stringent inquiry. A more daring outrage we do not remember to have heard of for many years, even in that hot bed of piracy, the Malayan Archipelago. We cannot allow ourselves for a moment to believe that in a narrow sea like the Mediterranean, swarming as it does with British cruisers, such scenes will continue to be enacted with impunity. The miserably imbecile Government of Greece possesses, we are aware, but a very imperfect control over its subjects, but that must not be allowed to stand in the way of a prompt search after, and the proper punishment of, the perpetrators of this and similar atrocities. That Greece in whose behalf, not many years ago, our sympathies were so keenly enlisted, has now degenerated into a nursery for ruffians and cut-throats; and, unless its Government speedily shows some symptoms of being able to discharge its proper functions, the sooner it is blotted from the map of Europe as an independant state, the better for the cause of humanity and civilization.

We would suggest to the merchants of Leith that a memorial, founded on the case of the *Jane Innes*, be drawn up, and forwarded to Lord Palmerston, calling his attention to the piracies so frequent amongst the Grecian islands, and the vast amount of British property annually exposed to the deprecation of the lawless inhabitants. So many things were taken from the *Jane Innes*, which could easily be identified, that we are quite certain a very little investigation would suffice to discover the perpetrators of this murderous outrage.

With reference to the watch kept on board the *Jane Innes*, at the time she was attacked, we believe it is the ordinary practice to assign that duty to one individual while in port or at anchor, where no extraordinary danger

is apprehended. Captains trading to the Mediterranean, however, will see the absolute necessity of adopting greater precautions while at anchor near any part of the Greek coast. While cordially sympathizing with those who have lost a relative by this occurrence, we trust that prompt and signal punishment will overtake the murderers.

WRECKS OF BRITISH SHIPPING.

(Continued from page 615 of last volume.—cs crew saved, cd crew drowned.)

Vessels' Names.	Belong to.	Masters.	From.	To.	Where.	When.
Agneda	Glasgow	Peat	London	Miramichi	50° N. 43° W.	Oct. 2, cs
Agnes	Beaumaris	Bell	wreck sold	for £1200	Pillars	October
Almwell		Shapter	Newcastle		Hasbro Sand	Oct. 14, cs
Angerona		Cornish	Quebec	Exeter	48° N. 33° W.	Sept. 22, cs
Ann	5 Liverpool	Jeffreys	passed	abandoned	47° N. 24° W.	Oct. 26,
Annandale		Buttler		abandoned		Sept. 19,
Ant	Aberdeen	M'Leon	abandoned	in	48° N. 43° W.	Oct. 3,
Ariel	Aberdeen	Henderson		London	Anholt R.	Oct. 25, es
Astrea			Weymouth	Quebec	45° N. 53° W.	Sept. 23,
Aunt Elizabeth	10 Liverpool		Honduras		at Seu	Oct. 6d
Belgrave	Whitehaven	Wilshire	Whitehaven	Dublin	Carnel Point	Oct. 22, 5d
Betsy	Yarmouth		Patras	Liverpool	50° 8' N. 7 5' W	Nov. 20, cs
Brave	Sunderland	Parkin		founded		Sept. 22,
Bristol			Portsmouth	St. John		Oct. 10, cs
Brunswick		M'Culloch	Londonderry	St. Andrews	47° N. 32° W	Sept. 25, cs
Catharine		Krozer	Hartlepool	Newfound'd	55° N. 4° E.	Sept. 22, 2d
Cionnell		abandoned	and water-	logged	46° N. 26-7 W	Oct. 17,
Cornwallis	Waterford	abandoned	by the N.	Carolina	46-6° N. 19° W.	Oct. 19, cs
Cromwell	passed		Quebec			Oct. 12,
Deemstar	20 Inverness		Quebec	Maldon	47° N. 41° W.	Sept. 15,
Deptford	Sunderland		Quebec	C.B. Homme	Oct. 24, cs	
Dochfour	Bristol	Marchant	Bristol	Quebec	Namoa	July 21, cs
Duke Lancaster		Bulley	Liverpool	Shanghai	Coll I.	Oct. 22,
Earl Munro		Clark	Riga	Belfast		Oct. 13,
Elizabeth Bibby	25 Bristol		St. Andrews	Liverpool	45° N. 41° W.	Oct. 13,
Elizabeth			London	Quebec	49° N. 23° W.	Sept. 29,
Elvira	St. John		Pr. Edwd Id	abandoned	46° N. 49° W.	Sept. 30,
Emerald	Quebec		passed	abandoned	46-7° N 29-5° W	Oct. 13,
Euphrosine					47° N. 31° W.	Oct. 7,
Flora M'Donald	30 Sunderland	Grant	Dublin	St. Stephens	abandoned	Sept. 22, cs
Fortitude	Limerick	Richardson	Riga	Bridgwater	Lessee	Oct. cs
Hebe	Belfast	Nutkins	London	Limerick	off Brandon	Oct. 21,
Helen & Elizabeth		Fleming	Maryport	Belfast	J. Withorn	November
Helen Jane			Belize		40° N. 59° W.	Sept. 24,
Herald	38 St. John		passed	abandoned	46° N. 25° W.	Oct. 28,
Hero	Liverpool		run foul of	founded	off St. Paul	Oct. 29,
Hope		Jones	Patagonia	Liverpool	abandoned	Dec 9,
James	Perth		by fire	Herd Sand		Dec. 7,
Jessie Torrance		Skoane	Quebec	Liverpool	C. Ireland	Nov. 26, 13d
John	40 Inverness	Taylor	Shields	Dunkirk	Godwin	Dec. 11, cs
Lady Goodrich	Stockton	Bainbridg	Omega	London	70° N. 26° E.	Sept. 16, cs
Lady Ruthven	Perth	Satherl'nd	Shields	Havre	Dungeness	Oct. 15, cs
Mary Ann			St. John NB	Liverpool	at Seu	Oct. cs
Mary Mc Kenzie	45 8. Shields	Wales	Thurso	abandoned	54° N. 5° W.	Oct. 26, cs
Mayflower	8. Shields	Botherick	Seaham	run down	R. Hood Bay	November
Nancy	8. Shields	Walls	Quebec		St. Shotts	Oct. 29, 2d
Neptune			passed	abandoned	44° N. 46° W.	Oct. 12,
Nottingham		Bell	Quebec	Liverpool	abandoned	Nov. 11,
Ocean	Waterford	Power		Quebec		Oct. 19, cs
Queen Victoria	50 Waterford	Babler	Quebec	Miramichi	Pr. Edwd I.	October
Ratchford					46° N. 35° W.	Oct. 6,
Raven	Dundee	Mather	Petersburgh	Holland	I. Beskar	Oct. 4, cs
Recovery	Liverpool	Moore	Liverpool	Miramichi	N. Cape	Oct. 29,
Rosalama		passed	abandoned	in	46 5 N. 24-3	Oct. 13,
Rose	55 Newry		St. John	Sligo	39° N. 51° W.	Oct. 16,
Spring		Snowden	Quebec		46 N. 25-5 W.	Nov 24, 10d
Stephen Wright	Hull	Jackson			R. Flate	Aug. 18,
Sylph	Liverpool	Louttit	Liverpool	Copeuhagen	B. Uist	Oct. 21, cs
Thomas	Whitehaven			Quebec	Millvaches	Oct. 14,
Vine	60 Henderou		Sunderland		Selme	Nov. 3, cs

STORM OF 1703.—On Sunday evening last the Annual Sermon in commemoration of the great storm of 1703, was preached in Little Wilde Street Chapel, by the Rev. C. Woollacott, from St. Mark, iv. 41. In describing the damage done by the great storm, he stated that in London alone more than 800 houses were laid in ruins, and 2000 stacks of chimneys were thrown down. In the country upwards of 400 windmills were either blown down or took fire, by the violence with which their sails were driven round by the wind. In the New Forest 4000 trees were blown down, and upwards of 19,000 in the same state were counted in the county of Kent. On the sea the ravages of this frightful storm were yet more distressing; 15 ships of the Royal Navy, and more than 300 merchant vessels were lost, with upwards of 6000 British seamen. The Eddystone lighthouse with its ingenious architect, Mr. Winstanley, was totally destroyed. The Bishop of Bath and Wells and his lady were killed by the falling of their palace. The sister of the Bishop of London, and many others lost their lives. This annual custom has been observed for upwards of a century past.—*Globe*.

STATIONS OF HER MAJESTY'S SHIPS IN COMMISSION.

With the Years when Built, and the dates of Commission of the Officers in Command.

Acheron, st-v. 2 (1838) Lt.-Com. A. R. Dunlap, 1842, Ireland—*Acorn*, 16, (1838) Com. J. E. Bingham, 1841, south-east coast of America—*Actæon*, 26 (1831) Capt. George Mansel, 1840, coast of Africa—*Adder*, 1, st-v. Mast-Com. J. Hammond, act., Pembroke—*Advice*, 1, st-tug, Lt-Com. C. A. Petch, 1828, Pembroke—*Eolus*, depot-sh., Mast-Com. John Thomas, 1826, Sheerness—*African*, st-v. (1825) Mast-Com. J. King, acting, Sheerness—*Agincourt*, 72 (1817) Rear-Ad. Sir T. J. Cochrane, Knt., Capt. W. J. Hope Johnstone, 1823, China—*Alarm*, 26, Capt. G. G. Loch, 1841, North America and West Indies—*Alban*, 1, st-v. (1826) Mast. M. Bradshaw, 1842, part. serv.—*Albatross*, 16, Com. A. Farquhar, 1844, Chatham—*Albert*, st-v. (1840) lent to Colonial Government at the Gambia—*Albion*, 90 (1842) Capt. N. Lockyer, cb. 1815, Lisbon—*Alecto*, st-v. Com. V. A. Massingberd, 1842, south-east coast of America—*Alert*, 6 (1835) Com. W. Ellis, 1842, coast of Africa—*Alligator*, 26 (1821) hospital-ship, China—*Amazon*, 42, Capt. James J. Stopford, 1841, Mediterranean—*America*, 50, Capt. Sir T. Maitland, cb. 1837, Lisbon—*Amphion*, Capt. W. J. Williams, 1841, Woolwich—*Andromache*, store-ship, Mast-Com. T. Johnson, 1803, Cork—*Andromeda*, store-ship, Com. E. W. Gilbert, 1822, Cork—*Anson*, 72, convict-hulk, Com. F. R. Coghlan, 1844, Hobart-town—*Apollo*, 8, tr-sh. (1805) Com. W. Radcliffe, 1830, Sheerness—*Ardent*, st-v. Lt-Com. J. R. Baker, 1828, Mediterranean—*Asp*, st-v. 1, Lt-Com. W. W. Oke, 1825, Portpatrick—*Atholl*, 2, tr-sh, Mast-Com. E. J. P. Pearn, 1827, part. serv.

Belvidera, depot-sh. Com. H. Layton, 1825, Woolwich—*Belleisle*, 72, Capt. Kingcome, 1838, part. serv.—*Birkenhead*, st-v. Com. A. H. Ingram, 1841, Sheerness—*Bittern*, 16, Capt. T. Hope, 1841, coast of Africa—*Black Eagle*, st-v. (1831) Mast-Com. S. B. Cook, act. 1838, Woolwich—*Blazer*, 3, st-v. (1834) Capt. Washington, 1842, Ireland—*Bloodhound*, st-v. Lieut-Com. R. Phillips, 1830, Mediterranean—*Bonetta*, 3, (1835) Com. T. S. Brock, 1842, Mediterranean—*Bramble*, 10, (1832) tender to *Fly*, Lieut-Com. Yule, 1842,

East Indies—*Brilliant*, 22, (1814) Capt. Watson, cb. 1842, Cape of Good Hope—*Bull-dog*, st-v. Com. G. E. Davis, 1842, Madeira.

Caledonia, 120, (1808) Rear-Ad. Sir S. Pym, ксв., Capt. M. H. Dixon, 1811, Devonport—*Calliope*, 26, Capt. E. Stanley, 1838, New Zealand—*Calypso*, 20, Capt. H. J. Worth, 1840, Pacific—*Canopus*, 84 (1794) Capt. F. Moresby, cb. 1814, Lisbon—*Carysfort*, 26, Capt. G. H. Seymour, 1844, Pacific—*Castor*, 36, (1832) Capt. C. Graham, 1830, East Indies—*Ceylon*, 2 (1810) Rear-Ad. Sir L. Curtis, Bart., Lieut. R. Curtis, 1838, Flag Lieut. rec. ship, Malta—*Charon*, st-v. (1827) Sec. Mast. E. C. Rutter, act. 1837, Dover—*Cherokee*, st-v. Com. W. N. Fowell, 1839, Lakes of Canada—*Childers*, 16, Com. J. C. Pitman, 1842, East Indies—*Cleopatra*, 26 (1835) Capt. Chris. Wyvill, 1832, Cape of Good Hope—*Collingwood*, 80 (1841) Rear-Ad. Sir G. Seymour, гсн., Capt. R. Smart, кн. 1827, Pacific—*Columbia*, st-v. Lt-Com. P. F. Shortland, 1842, North America—*Columbine*, 18, Com. C. C. Grey, 1842, China—*Comet*, st-v. (1822) Lt-Com. C. R. Johnson, 1840, part. serv.—*Comus*, 18 (1828) Com. E. C. T. D'Eyncourt, 1842, south-east coast of America—*Confiance*, 2, st-v. (1827) Sec. Mast. J. Jagoe, act. 1842, Devonport—*Constance*, 50 (1846) Capt. Sir B. W. Walker, 1838, Pacific—*Contest*, 12, Com. A. McMurdo, 1843, coast of Africa—*Conway*, 26 (1832) Capt. W. Kelly (c) act. 1844, on passage home—*Cormorant*, 6, st-v. (1842) Com. G. T. Gordon, 1840, Pacific—*Crocodile*, tr-sh, Lt-Com. S. R. Prothero, 1826, Cork—*Crescent*, 42, rec-sh. (1810) Lt-Com. Hemsworth, Rio de Janeiro—*Cruizer*, 16 (1828) Com. E. Peirse, 1842, East Indies—*Cuckoo*, st-v. Lt-Com. A. Parks, 1815, Scotland—*Curacoa*, 24 (1809) Capt. W. Broughton, 1831, south-east coast of America—*Cyclops*, 6, st-v. (1839) Capt. W. F. Lapidge, 1837, Portsmouth—*Cygnets*, 10 (1840) Com. F. B. Montresor, 1843, coast of Africa.

Dædalus, 16, Capt. McQuhae, 1835, East Indies—*Daphne*, 18 (1838) Capt. J. J. Onslow, 1834, Pacific—*Daring*, 12 (1844) Com. H. J. Matson, 1843, North America and West Indies—*Dasher*, st-v. Com. W. L. Sheringham, 1843, Ireland—*Dee*, st-v. 2 (1832) Mast-Com. T. Driver, 1809, part. serv.—*Devastation*, st-v. Commodore Sir C. Hotham, coast of Africa—*Dido*, 20, Capt. J. B. Maxwell, 1837, Pacific—*Dolphin*, 3 (1836) Lt-Com. Levinge, 1839, south-east coast of America—*Doterel*, st-v. Mast-Com. J. Grey acting, Holyhead—*Dover*, st-v. Mast. E. Lyne, acting, Dover—*Driver*, 6, st-v. (1840) Com. C. O. Hayes, 1839, East Indies

Eagle, 50, Capt. G. B. Martin, cb. 1828, North America and West Indies—*Electra*, 18, Com. W. H. Maitland, 1842, North America and West Indies—*Endymion*, 44, Capt. G. R. Lambert, 1825, North America and West Indies—*Erebus*, bomb-v. Capt. Sir J. Franklin, 1822, Arctic Expedition—*Espiegle*, 12 (1844) Com. T. P. Thompson, 1841, East Indies—*Espoir*, 10, (1821) Com. G. S. Hand, 1841, coast of Africa—*Eurydice*, 26 (1843) Capt. T. V. Anson, 1841, Cape of Good Hope—*Excellent*, (1810) Capt. H. D. Chads, cb. 1825, Portsmouth.

Fairy, yt. (1845) tender to *Victoria and Albert*, Portsmouth—*Fanny*, tender to *St. Vincent*, Mast. G. Allen, acting, Portsmouth—*Fantome*, 16 (1839) Com. T. P. Le Hardy, 1837, Mediterranean—*Favourite*, 18, Com. A. Murray, 1840, coast of Africa—*Ferret*, 10, Com. G. Sprigg, 1844, coast of Africa—*Fiébrand*, st-v. Capt. Jas. Hope, 1838, south-east coast of America—*Firefly*, 2 st-v. (1832) Capt. F. W. Beechey, 1827, surveying—*Fisgard*, 42, (1819) Capt. J. A. Duntze, 1829, Pacific—*Flamer*, st-v. (1831) Lt-Com. G. Lavie, 1834, Mediterranean—*Flying Fish*, 12, (1844) Com. P. H. Dyke, 1844, coast of Africa—*Fox*, 42, (1829) Commodore Sir H. Blackwood, 1837, East Indies—*Frolic*, 16 (1842) Com. C. B. Hamilton, 1844, Pacific.

Geysier, st-v. Com. F. T. Brown, 1840, Woolwich—*Gladiator*, st-v. Capt. J. Robb, 1841, Portsmouth—*Grampus*, 50, Capt. H. B. Martin, cb. 1828, Pacific—*Grappler*, st-v. Lt-Com. T. G. Lysaght, 1841, Woolwich—*Grecian*, 16,

Com. L. S. Tindal, 1831, south-east coast of America—*Griffon*, 6, Lieut.-Com. J. T. Thurburn, south-east coast of America.

Harlequin, 16, Com. J. Moore, 1843, Mediterranean—*Harpy*, st-v. Lt.-Com. J. W. Tomlinson, 1826, south-east coast of America—*Hazard*, 18, (1837) Com. F. P. Egerton, 1844, East Indies—*Hecate*, 4, st-v. (1840) Com. J. West, 1841, coast of Africa—*Hecla*, st-v. (1839) Com. C. Starmer, 1842, Mediterranean—*Helena*, 16, Com. Sir C. Ricketts, 1831, Cape of Good Hope—*Herald*, 26, surv. Capt. H. Kellett, cb. 1842, Pacific—*Hermes*, 2, st-v. (1835) Lt.-Com. Carr, 1821, North America and West Indies—*Heroine*, 6, Com. C. Edmunds, 1841, coast of Africa—*Hibernia*, 120 (1804) Vice-Ad. Sir W. Parker, Bart. gcb., Capt. P. Richards, cb., 1828, Channel Squadron—*Hound*, 10, Com. G. H. Wood, 1846, coast of Africa—*Hyacinth*, 18 (1829) Com. P. Scott, 1841, North America and West Indies—*Hydra*, 4 (1838) Com. A. Morrell, 1823, coast of Africa.

Imaum, rec. ship, Commodore D. Pring, 1815, Jamaica—*Inconstant*, 36, Capt. C. H. Freemantle, 1825, Mediterranean—*Iris*, 26, (1840) Capt. G. K. Mundy, 1837, East Indies—*Inflexible*, st-v. Com. J. C. Hoseason, 1844, East Indies—*Jackal*, st-v. (1845) Lt.-Com. G. Western, 1837, Mediterranean—*Jasper*, st-v. Mast-Com. E. Rose, 1823, Pembroke—*Juno*, 26, Capt. P. I. Blake, 1841, Pacific—*Kingfisher*, 12, Com. F. W. Horton, 1846, coast of Africa.

Lark, 4, surv-v. (1830) Lt.-Com. G. B. Lawrence, 1843, North America and West Indies—*Larne*, 18, (1829) Com. J. W. D. Brisbane, 1837, coast of Africa—*Lightning*, 2, st-v. (1823) Mast-Com. Pelley, 1844, Woolwich—*Lily*, 16 (1837) Com. C. J. F. Newton, 1838, coast of Africa—*Lizard*, st-v. Lt.-Com. J. H. M. Tylden, 1836, south-east coast of America—*Locust*, 3, st-v. (1840) Lt. Com. E. R. Power, 1839, Mediterranean—*Lucifer*, st. surv.-v. (1825) Com. G. A. Fraser, 1841, Ireland.

Madagascar, 44, Mast-Com. H. D. Burney, 1814, Ireland—*Mastiff*, 2 (1813) surv.-v. Mast-Com. Thomas, 1808, Orkneys—*Medea*, st-v. Com. G. E. W. Harbord, 1843, Woolwich—*Medina*, 2, st-v. (1840) Mast-Com. W. Smithett, act. Liverpool—*Medusa*, 2, st-v. (1839) Lt.-Com. J. F. Raymond, 1828, Liverpool—*Melampus*, 42, Capt. J. N. Campbell, cb. 1827, south-east coast of America. *Mercury*, tender, Sec. Mast. J. Scarlett, part. scrv—*Merlin*, 2 (1839) st-v. Lt.-Com. E. Keane, 1815, Liverpool—*Metcor*, 2, st-v. (1824) Lt.-Com. G. Buttler, 1811, Mediterranean—*Minden*, 20, store-sh. Mast-Com. J. Mitchell, 1827, China—*Minos*, st-v. Lt.-Com. J. Harper, acting, 1845, Lake Erie—*Modeste*, 18 (1837) Com. T. V. Watkins, 1837, Pacific—*Mohawk*, Lt.-Com. J. Tyssen, 1832, Lake Huron—*Montreal*, Lt. Com. J. Tyssen, 1832, Lake Erie, Canada—*Mutine*, 12, Com. R. Tryon, 1841, Portsmouth—*Myrmidon*, st-v. Rear-Ad. Sir H. Pigot, Lt.-Com. E. F. Roberts, 1841, Cork.

Naiad, store-sh. Mast-Com. W. L. Browne, 1831, Portsmouth—*Nautilus*, 10 (1839) Lt.-Com. T. W. Rivers, 1841, Lisbon—*Nereus*, store-dep. (1821) Mast-Com. F. W. Bateman, 1837, Valparaiso—*Netley*, 8, tender to *Caledonia*, Devonport—*Nimrod*, 18, Com. J. R. Dacres, 1841, coast of Africa.

Ocean, 80 (1805) Vice-Ad. Sir E. D. King, cb., Capt.-Sup. D. Price, 1815, Sheerness—*Onyx*, st-v. Lieut.-Com. R. Mudge, 1815, Dover—*Otter*, st-v. Lt.-Com. E. Wylde, 1814, Holyhead.

Pandora, 6, Lt.-Com. J. Wood, a 1841, surv. Pacific—*Pantaloön*, 10 (1831) Com. H. J. Douglas, 1845, act. coast of Africa—*Penelope*, st-v. Capt. H. W. Giffard, 1841, Portsmouth—*Perseus*, rec. sh. (1812) Lt.-Com. Greet, 1840, off the Tower—*Persian*, 16 (1839) Com. H. Coryton, 1841, North America and West Indies—*Phœnix*, st-v. Com. J. S. A. Dennis, 1840, Mediterranean—*Pickle*, 2 (1827) Lt. Com. H. Bernard, 1841, North America and West Indies—*Pigmy*, 1, st-v. (1827) Lt. Com. A. Darby, 1828, Pembroke—*Pike*, 1, st-v. Lt.-Com. A. Boyter, 1815, Portpatrick—*Pilot*, 16 (1838) Com. G. K. Wilson, East Indies—*Pluto*, 2 (1831) Lieut. Com. F. Lowe, 1837, part. scrv—

Poictiers, 72 (1809) Capt. Sup. Sir T. Bourchier, ксв. 1827, Chatham—*Polyphe-mus*, 1, st.v. (1839) Com. McCleverty, 1842, Portsmouth—*Porcupine*, st.v. Capt. F. Bullock, 1838, River Thames—*President*, 50, Rear-Ad. Dacres, Capt. W. P. Stanley, 1838, Cape of Good Hope—*Princess Alice*, Mast. Com. L. Smithett, acting Dover—*Prometheus*, st-sloop (1839) Com. J. Hay, 1841, coast of Africa—*Prospero*, 1, st.v. Sec. Master P. Rundle, acting, steam-packet, Pembroke.

Queen, 110 (1839) Admiral Sir John West, Capt. Sir Henry Leeke, кн. 1826, Devonport.

Racehorse, 18 (1830) Com. E. S. Southeby, 1841, East Indies—*Racer*, 16 (1833) Com. A. Reed, 1837, south-east coast of America—*Ralvigh*, 50 (1845) Capt. Sir T. Herbert, 1822, south-east coast of America—*Ranger*, 6, Com. J. Anderson, 1841, coast of Africa—*Rapid*, 10, Com. H. J. W. S. P. Gallway, 1841, coast of Africa—*Rattler*, 6, st.v. R. Moorman, 1845, Channel Squadron—*Rattlesnake*, 2, Capt. O. Stanley, 1844, Portsmouth—*Recruit*, 12, Com. A. Slade, 1841, Devonport—*Reducing*, st.v. (1834) Com. T. Bevis, 1829, Liverpool—*Resistance*, (1805) tr.sh. Com. G. Lowe, 1840, Portsmouth—*Rhadamanthus*, 2, st. (1832) Mast. Com. J. Ayley, 1812, Woolwich—*Ringdoe*, 16, Com. Sir W. Hoste, 1816, East Indies—*Rodney*, 92 (1833) Capt. E. Collier, св. 1844, Channel Squadron—*Rolla*, 10, Com. H. M. Elliscombe, 1841, coast of Africa—*Rosamond*, st.v. Com. J. Foote, 1845, Woolwich—*Rose*, 18 (1821) Com. R. W. Pelly, 1844, Devonport—*Royalist*, Lt-Com. J. A. D. Paynter, 1841, East Indies—*Royal Sovereign*, yt. (1804) Capt. Sup. G. T. Falcon, 1813, Pembroke.

St. Vincent, 120 (1815) Adml. Sir C. Ogle. Bart., Capt. A. Milne, 1839, Portsmouth—*Salamander*, 4, st.v. (1832) Capt. A. S. Hammond, 1846, Pacific—*Samarang*, 26 (1822) Capt. Sir E. Belcher, св. 1841, East Indies—*Sampson*, st.frigate, Capt. T. Henderson, 1846, Pacific—*Satellite*, 18 (1826) Com. R. H. B. Rowley, 1842, south-east coast of America—*Scourge*, st.sl. Com. J. C. Caffin, 1842, Lisbon—*Scout*, 18, Com. W. Loring, 1841, East Indies—*Seaflower*, 6, ct. (1830) Com. H. Dumaresq, 1842, Portsmouth—*Sealark*, 18 (1843) Com. T. L. Gooch, 1842, coast of Africa—*Shearwater*, 2, st.v. (1826) Com. C. G. Robinsou, 1838, surv. coast of Scotland—*Sidon*, st.frigate, Capt. W. H. Henderson, 1838, Woolwich—*Siren*, 16, Com. T. Chaloner, 1845, Mediterranean—*Snake*, 16, Com. T. B. Brown, 1841, Cape of Good Hope—*Sparrow*, 6, ketch (1828) Com. H. C. Otter, 1831, coast of Scotland—*Spartan*, 26, Capt. T. M. C. Symonds, 1841, Mediterranean—*Sphinx*, st.v. Com. J. B. Cragg, 1842, Devonport—*Spider*, 6 (1835) Lt-Com. R. E. Pym, 1815, south-east coast of America—*Spiteful*, st.v. 6, (1842) East Indies—*Spitfire*, st.v. Lt-Com. J. A. Macdonald, 1827, Mediterranean—*Sprightly*, 1, st.v. (1823) Mast-Com. J. P. Moon, acting, Holyhead—*Spy*, 3 (1841) Lt-Com. S. O. Wooldridge, 1837, Pacific—*Star*, 10 (1835) Com. C. L. Hockin, 1846, coast of Africa—*Stromboli*, 6 (1839) Com. T. Fisher, part. serv.—*Styx*, 6 st.v. (1841) Com. H. Chads, 1835, coast of Africa—*Superb*, 78 (1835) Capt. A. L. Corry, 1821, Channel Squadron—*Sylvia*, 6 tender to *Seaflower*, Portsmouth.

Talbot, 26, (1824) Capt. Sir T. R. T. Thompson, 1837, Pacific—*Terrible*, st.v. Capt. W. Ramsay, 1838, Sheerness—*Terror*, 7, Capt. F. R. M. Crozier, 1841, Arctic Expedition—*Thetis*, 36, Capt. H. J. Codrington, св. 1836, Portsmouth—*Thunder*, 6, surv.v. (1829) Capt. E. Barnett, North America and West Indies—*Thunderbolt*, 6 (1842) st.v. Com. A. Boyle, 1842, Cape of Good Hope—*Torch*, st.v. Lt-Com. G. Morris, 1823, coast of Scotland—*Tortoise*, 12, guard-ship, Capt. F. Hutton, 1844, Ascension—*Trafalgar*, 120 (1841) Capt. J. N. Nott, 1842, Channel Squadron—*Trident*, st.v. Lt-Com. G. G. Rygge, 1838, Mediterranean—*Tyne*, 26 (1826) Cnpt. W. N. Glasscock, 1833, Mediterranean—*Urgent*, 2, st.v. Lt-Com. A. S. Symes, 1816, Liverpool.

Vanguard, 80 (1886) Capt. G. W. Willes, 1814, Channel Squadron—*Vengeance*, st. f. Capt. S. Lushington, 1829, Portsmouth—*Vernon*, 50 (1839) Rear Adm. Inglefield, cb., Capt. J. C. Fitzgerald, 1811, S. E. coast of America—*Vestal*, 26, (1833) Capt. C. Talbot, 1830, East Indies—*Vesuvius*, 6, st. v. 1840, Com O. Callaghan, 1841, N. America and West Indies—*Victoria and Albert*, yt. (1840) Capt. Lord A. Fitzclarence, ccu. 1821, Portsmouth—*Victory*, 104, (1765) Rear Adm. H. Parker, cb. Capt. J. Pasco, 1811, Portsmouth—*Vindictive*, 50 (1813) Vice Adm. Sir F. Austen, Capt. M. Seymour, 1826, N. America and W. Indies—*Viper*, 6, Lieut.-Com. E. E. Gray, 1827, N. America and West Indies—*Virago*, 6, st. v. (1843) Com. J. Lunn, 1840, Mediterranean—*Volcano* 2, st. v. (1836) Lieut.-Com. J. H. Crang, 1840, Mediterranean—*Vulture*, st. v. Capt. J. M'Dougall, b, 1836, East Indies.

Wanderer, 16, Com. P. H. Somerville, 1842, coast of Africa—*Waterwitch* 10 (1832) T. F. Birch, 1840, coast of Africa—*Widgeon*, 1, st. v. Lieut.-Com. T. S. Scriven, 1822, Dover—*Wildfire*, 1, st. v. Sec. Mast. G. Brookman, Sheerness—*William and Mary*, yt. (1807) Capt. Sir J. J. H. Bremer, kcb. and xcm, 1841, Woolwich—*Wolf*, 18 (1826) Com. J. A. Gordon, 1843, East Indies—*Wolverine*, 16 (1836) Com. W. J. C. Clifford, 1842, East Indies—*Woodlark*, Lieut. Com. F. W. L. Thomas, 841, Woolwich.

Young Hebe, Lieut.-Com. D. McD. Gordon, 1845, East Indies—*Zephyr*, st. v. (1827) Lieut.-Com. C. P. Ladd, 1815, Holyhead.

DRIFTING WRECKS.

WRECKS.	WHEN SEEN.	Lat N.	Lon W.	VESSELS SEEN BY.	WHERE FOR OR ARRIVED AT.
Eliz. Bibby		45° 9'	35° 5'	Goodluck	Jersey.
Angerona	Sept. 22	48	33	Johanna	Drysyder, Alloa to St. John
Comte de Paris	Oct. 6	47	32	Soundrassorry	Cockerill, Hamburgh
Benjamin, br.	Oct. 28	27.7	74.3	of Frankfort	
Saml.—J. S.	Nov. 23	49	19	supposed Spry	or Spring, by Fair Arcadian
Elizabeth	Sept. 29	49	23	Catherine	Ellenwood, arr. Yarmouth
Herald	Oct. 28	46	25		
Agenoria	Sept. 26	59	6		see further.
Ant	Oct. 3	48	43	of Aberdeen	
Brig of Glasgow	Oct. 20	38	58	Harbinger	Brown, at Boston
Emerald	Oct. 13	46.7	29.5		
Neptune	Oct. 12	44	45	of Aberdeen	
Ann	Oct. 28	47	24	of Liverpool	
Cush la Macree	Oct. 16	47	27		
Cromwell	Oct. 12	46.6	19	by the N. Car	olina
Rosalama	Oct. 13	46.5	34		see further.
Clonmell	Oct. 17	46	26.7		
Sea Nymph.	Oct. 29	44.8	40.6	by Liverpool	Eldridge, at New York do.
Spring	Nov. 24	46	35.5	by Corsair	McGregor—see further.
Syra	Nov. 1	49	17	by Petrel	with crew in the tops.
Eliz. Bibby	Oct. 24	45.7	37	of St. Stephen	Hymen, London, arr. Falmth.
Large ship	Dec. 3	46.4	21.2	Mountaineer	Poole, or barque. (a)
Large barque	Dec. 4	46.2	20.0	Mountaineer	Poole. (b)
Unknown	Dec. 11	47	21.0	Greenlaw	Downs. (c)
A brig	Dec. 14	46.6	13.0	Eolus	Downs. (d)
Atlantic	Nov. 23	48.2	22.0		
Nile	Dec. 7	45.9	24.0		
Farwell	Nov. 27	40.0	55.2		
Unknown	Nov. 25	48.6	24.0		

- (a) Had high poop deck; main and mizen masts gone; fore mast and fore-top mast standing.
 (b) Had bright masts with white rings painted up and down; stem stove in; "3 P" visible; bulwarks painted flesh colour.
 (c) Painted ports, &c., broad yellow streak, and a raised quarter-deck.
 (d) About 150 tons; white figure head; name worn off by sea too much to be readable.

We have compiled the foregoing table from the columns of that valuable paper the *Shipping Gazette*, with the view of laying before our readers the floating dangers of the Atlantic. They are mostly included between the bearings of N.E. and N.W. (true) from the Azores, and the following, which are reported more than once, are interesting, as shewing how a floating wreck will drift about the ocean to the great danger of ships on their voyages. In our last January number, (p. 42-3), we recorded some curious instances of the same kind, along with the case of one ship (the *Brutus*) having struck one of those vessels. We would, therefore, recommend those of our readers who are outward bound to lay down the foregoing on their charts, assuring them they will find it both an interesting and useful occupation.

The *Agenoria*, reported above, on the 26th September, N.W. of Cape Wrath, appears in a table in our last volume, p. 491, about 5° further west on the 25th July. On the 11th December, she is stated to have drifted on shore at Hartlepool. She thus forms an interesting example of the set from the Atlantic round the northern shores of these islands into the German Ocean.

In the vessel named the *Spring*, seen on the 1st of October, and afterwards on the 24th of November, about a hundred miles to the S.W., a drift is shewn different from that generally accepted; and this is confirmed by the *Sea Nymph*, seen on the 29th September, and again on the 29th of October, an interval of drift corresponding with that of the *Spring*; and, again, she is seen on the 4th of December, having drifted down towards the Azores.

The *Cush la Macree* appears in our last volume, (p. 615,) about 10° to the westward of her present position, and the *Rosalama* appears in three distinct positions, viz.—the 13th of October, the 17th of November, when she was set on fire by the *Eagle*, and still floating about on the 8th December, having drifted about 12° of longitude from where first seen.

The following are the positions of the floating wrecks seen more than once:—

The Agenoria seen

July 25, Lat. 59° N.—Long. 11° W. by the *Numa*.
 Sept. 26, " 59 " 6 "
 Dec. 11, drifted on shore at Hartlepool.

The Spring seen—

† Oct. 1, Lat 47° N.—Long. 34° W., belonged to Shields.
 Nov. 24, " 45·8 " 35·5 " drifted to S.W.

The Sea Nymph seen—

Sept. 29, Lat, 45° N.—Long. 37° W., of St. John, N. B.
 Oct. 29, " 44·5 " 40·5 " drifted to W.b.S.
 Dec. 4, " 41 " 31 " drifted to S.E.

The Rosalama seen—

Oct. 13, Lat. 46·5—Long. 34° W.
 Nov. 17, " 45·8 " 29·2 drifted E.b.S., set on fire by *Eagle*.
 Dec. 8, " 46·0 " 21·8 drifted E.b.N.

* Vol. for 1845, p. 491.

† Ibid.

The Cromwell seen—

Sept. 24, Lat 46° 5'—Long. 33° 8' abandoned.
 Oct. 4, " 43° 8' " 27°
 Oct. 12, " 66° 5' " 19°

The foregoing are but a portion of the wrecks which have been drifting about the last three months in the Atlantic Ocean, as, with the exception of five, we have not noticed the numerous reports of those without names.

We shall conclude these remarks with the following extract from the *Montreal Herald* giving some account of this last ship.

Cromwell from Quebec for Liverpool.—Annexed we give an interesting account of the loss of the above vessel, furnished to the *New York Herald* by Capt. Eldridge, of the *Roscius*, who fell in with her, and took off thirty persons and brought them to New York.

Report of ship *Roscius*, Capt. Eldridge, arrived from Liverpool, Sunday, Sept. 20, lat. 46° 20' long. 31°, commenced with strong winds from the westward, and clouds. At 4 P.M. the wind canted into the W.S.W. and S.W., and soon increased to a gale, so that by 8 P.M. we were obliged to furl everything but the main top-sail close reefed. The gale lasted but 60 hours, and, long hours they were, and although the *Roscius* rode it out under the main top sail close reefed, it was nevertheless a hard gale, a bare chop sea, and as high as I ever saw it in the Atlantic ocean. After the gale moderated, there was a general rejoicing amongst all, and particularly amongst the steerage passengers. After being battened down for two or three days, we accordingly made sail and proceeded to the westward.

When on the morning of Sept 24th raining hard, very thick and squally, ship under double reef top-sails, at about 8 P.M., lat. 46° 30' long. 33° 46' we fell in with the British ship *Cromwell*, from Quebec, bound for Liverpool, water logged, crew wished to be taken off. I immediately shortened sail, rounded to, backed the main-top-sail, and with some difficulty launched our boat; and under the judicious management of Mr. Moore, the first officer of the *Roscius*, after making four successful trips, they were all taken on board, 30 in number, safe and sound, with the exception of the first officer, who had been previously hurt very badly indeed, by one of the logs of timber.

The *Cromwell* was considered a fine ship, two years old, built at Quebec, was deeply laden, and a heavy deck load on her, to which I attribute the loss of the ship, as the sea was so high they could not scud her, and in lying to, she shipped great quantities of water; the timbers got adrift on deck, and all the logs that could wash off, on account of their length were soon gone, but tearing, and ripping everything to pieces that came in their way; her lee rail was off, and most of the stanchions; one side, the front part of the poop entirely gone, and every part of the cabin knocked into a cocked hat, and the furniture, stoves, clothes, chests, and instruments all gone to David Jones' locker. Fore and main yard gone, and a number of other spars. The ship full of water, above and below decks, and working to pieces in every part of her, and what with the sea and several large logs, some 50 feet long, and 22 inches square, going fore and aft, every pitch and roll knocking and shattering to pieces,—she cannot last long. There was not a dry spot in any part of her, excepting the top, where the crew were living under cover of some of the sails spread over them. They had no provisions, it had all washed away, and entirely without water—consequently they could not have held out a great while, as their situation was, I think, as bad as could be. I, therefore, consider Capt. McDougal, his officers and crew, very fortunate indeed in having so fine a ship fall in with them, and able to take them on board without

any inconvenience at all to us, not only to feed, but to clothe them, although we had 400 souls on board previous to receiving them.

Minerve, this ship arrived at New York from Palermo, and we learn from her captain the following dreadful particulars of the loss of the brig *Renzie* of Boston, with sixteen of her crew:—

Log Book of the Minerva, Saturday, Sept. 26.—Sea account.—These twenty four hours commenced with light winds from the S.W. At 5h 30m. P.M., made a wreck on the larboard bow, hauled the ship close by the wind, which brought her about three points on the weather bow.—The wind being light approached her very slowly, and at $\frac{1}{2}$ past 6, lost sight of her altogether, previously taking her bearings. The captain thought best to send the boat, to see if there were any survivors and rescue them should there be any, and likewise to ascertain the name of the vessel. After providing the boat with compass, signal lantern, and bucket of fresh water, the boat was manned by the first officer and four men, after pulling for about an hour says the first officer in the direction of the wreck, I smelt something similar to the carcass of a whale. I pulled directly to windward, and very soon discovered the wreck made the proper signal to the ship, as agreed upon previous to leaving the ship. The ship hove to under our lee, I then pulled round under the stern of the wreck, for the purpose of boarding her, and likewise to ascertain her name. when suddenly cries of distress broke upon our ears; we succeeded in rescuing the survivors, five in number, consisting of James S. Dyer, 2nd officer; George Buntiff, seaman; George L. Howe, do; Appleton Lathe do; Lloyd Brown, do. The poor fellows were mere skeletons, one being delirious, and would probably have died before morning without relief. We took the survivors on board, and administered to their wants. We were in lat. 37° 30' N. and long. 48° 30' West.

Shifting of sandbanks in the Bristol channel—The master of one of the steamers asserts that a change of a most serious character has occurred in the position of the Sandbanks of the upper part of the Bristol Channel, and that recently where he thought the track to be clear, he could only find eight feet of water upon a moderate ebb. The vessel upon that occasion took the bottom, and all the steamers have frequently felt the bottom within a short space of time.

PROMOTIONS AND APPOINTMENTS.

Admiralty Dec. 10.—This day, in pursuance of Her Majesty's pleasure, the following flag-officers of Her Majesty's fleet were promoted, viz.:—Ad. of the White, J. E. Douglas, to be Ad. of the Red—Ad. of the Blue, J. Bullen, to be Ad. of the White—Vice-Ad. of the Red, Sir E. W. C. R. Owen, KCB, GCB, to be Ad. of the Blue—Vice-Ad. of the White, T. J. Malling, to be Vice-Ad. of the Red—Vice-Ad. of the Blue, B. Curry, CB, to be Vice-Ad. of the White—Rear-Ad. of the Red, T. Browne, to be Vice-Ad. of

the Blue—Rear-Ad. of the White, Sir F. Mason, KCB, to be Rear-Ad. of the Red—Rear-Ad. of the Blue, Sir E. Chetnam Strode, KCB, KCH, to be Rear-Ad. of the White.

[The above promotions are consequent on the death of Lord Amelius Beauclerk, GCB, GCH.]

Admiralty, Dec. 14.—The name of Capt. W. I. Scott is to be included in the list of Captains on the half-pay of 1l. per day. Capt. G. R. W. Trefusis on the half-pay of 14s. per day.

PROMOTIONS.

CAPTAINS—S. H. Ussher—H. Mangles Denham.

COMMANDERS—G. Blanc, J. A. Monds, and G. C. Adams.

SURGEONS—L. C. Urquhart, MD—M. M. C. French.

APPOINTMENTS.

REAR-AD. Sir J. Louis, Bt. to be Superintendent of Plymouth Hospital.

CAPTAINS—T. Dench (1828) to out-pension of Greenwich Hospital—Sir W. F. Parry, Knt. (1821), to be Superintendent of the Royal Clarence Victualing Yard and Haslar Hospital—A. Elliot (1841) to be Comptroller of Steam Machinery.

COMMANDERS—T. Wilson (1843) to *Canopus*—J. Steads (1841), and J. H. Gennys (1845), to study at Naval College—E. A. Inglefield (1845), and J. W. Finch (1845), to study at the Steam Factory, Woolwich—H. Loring (1845), to *Superb*—H. R. Foote (1845), to study at the Royal Naval College, Portsmouth.

LIEUTENANTS—A. Porcher (1845) to *Sidon*—H. G. Simpson (1846) to *Rattlesnake*—R. Berington (1846) to *Belleisle*—S. J. Brickwell to *Albatross*—W. Swinburn (1846), and W. W. Morris, (1846) to *Penelope*—G. Morris (1823), to *Torch*—E. F. Roberts (1841), to *Myrmidon*—J. W. Tomlinson (1826), to *Harpy*—Hon. J. W. S. Spencer (1841), Flag—Lt. to Rear Ad. Parker, Superintendent of the Dockyard, Portsmouth—H. D. Rogers (1837), to *Vengeance*—P. Cracroft (1841), and H. Bullock (1843), to study at the Steam Factory, Woolwich—J. Moorshead (1836), to *Caledonia*—W. Swainson (1815), to *Penguin* packet—J. de C. Agnew (1843), and W. H. Rushbrooke, to *St. Vincent*—S. Athorp (1845), to *Recruit*—A. S. Booth (1836), to *America*—H. B. Gray (1844), to *Resistance*—H. Croft (1841), to *Spartan*—L. R. Place (1842), to *Amphion*—W. R. Davies (1815), to *Cherokee*—C. S. S. Stanhope (1846), to *Queen*—W. L. Part-ridge (1844), to *Superb*—G. C. Fowler (1841) to *William and Mary*—J. A. Dunbar (1842), to *Geysier*.

MASTERS—P. C. Bean to *Tortoise*—J. Roskelly to *Firefly*—R. T. Saunders to *Resistance*—E. Maunder to *Mutine*.

SECOND MASTERS—R. Michael to *Zephyr*, Holyhead steam-packet—J.

Ribby to *Urgent*—A. J. Samuel to *Birkhead* steam-frigate—T. O. Crout to *Naiad*—W. W. Riddel to *Medusa*, st-packet.

MIDSHIPMEN—M. Craigie to *Excellent*—A. O. Sutton to *Raleigh*—E. Barkly to *William and Mary*—F. J. Young to *America*—G. Temple, and C. Andrews to *Hibernia*—H. C. Pritchard, and J. A. Cary to *Penelope*—T. E. Smith to *Vengeance*—W. N. Nurse to *St. Vincent*.

NAVAL CADETS—W. Stubbs to *Geysier*—G. H. Barnard, and H. T. Marsden to *Rosamond*—E. A. Pierson, G. W. Stone, and L. Delacheroio, to *St. Vincent*—J. R. Palmer to *Albatross*—J. S. Murray to *Queen*—J. J. Barlow to *Endymion*—F. M. Kelsall to *President*—W. H. Liddell to *Mutine*.

MASTERS-ASSISTANTS—T. May to *Amphion*—A. Speer to *Penguin*—E. Mourilyan and H. Kelly to *Victory*—H. Pelch to *Neptune*—E. A. Carey to *Columbia*—J. G. Morgan to *Albatross*—C. Saunders to *Lightning*—J. E. Scudamore to *Vengeance*—R. Dean to *Penelope*—J. Alder and J. S. Hames, to *Birkhead*—H. C. Jackson to *Naiad*—E. J. Kellow to *Caledonia*,

SURGEONS—D. Shea to *Albatross*—J. Wilson to *Caledonia*—G. King to *Devastation*—J. S. Davidson to *Royal William* for rank—T. B. Elliott, surgeon and agent at sick quarters at Kilrush—T. B. Gett, surgeon and agent at sick quarters at Donaghadee.

ASSISTANT-SURGEONS—P. Slevin to *Thetis*—T. J. Barnes to *Rosamond*.

PAYMASTERS AND PURSERS—J. J. Rutter to *Birkenhead*—J. Thompson to *Vernon*—J. France to *Eagle*.

CLERKS—J. Bowman to *Cuckoo*—A. Young to *Ocean*—E. Mareom to *Caledonia*—W. Nayler to *Lightning*—H. T. Read and W. De Carteret to *Birkenhead*—J. Holden and G. Battershall to *Medea*—B. W. Reed and Spark to *Crocodile*—A. Gordon to *Resistance*—H. Gray to *William and Mary*—J. D. Gilpin to *Andromache*—J. J. Lindsay to *Queen*.

COAST GUARD.

Appointments—Mr. J. Seacombe to Sulworth—Lieut. Westbrook to command a station—Lieut. Poynter to Penzance—Lieut. Moss to Roberts Cove—Lieut. P. Campbell to command r c. Wickham—Lieut. J. Boyd to Mothercombe—Mr. J. E. Webb to command a station.

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES—NOVEMBER 1846.

	AM.		P.M.																						
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
1	SE	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	SSE	15	15	12	17	15	14	5	S	4	5	5	12	12	12	15	10	11
3	5	5	10	12	5	5	5	.	.	.	4	5	5	5	.	.	SSW	15	10	5	5	5	5	5	11
4	.	.	10	5	10	.	12	12	16	12	15	11	15	11	SE	.	.	15	10	5	5	5	5	5	11
5	.	.	.	.	.	10	12	15	15	15	17	15	15	12	.	.	.	5	5	5	4	4	4	4	5
6	4	4	5	5	12	10	12	12	12	15	17	15	12	12	ENE	10	10	5	5	5	4	4	10	10	10
7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11	11	10	10	10	10	10	10
8	.	.	.	.	11	11	13	12	12	12	12	12	10	12	15	12	ESE	12	5	5	5	5	5	5	5
9	4	5	5	5	5	5	5	5	10	10	10	10	4	5	5	5	5	15	15	12	10	12	13	12	10
10	10	.	.	.	.	.	17	20	20	22	20	17	17	12	12	15	15	17	20	20	20	20	20	20	17
11	17	17	20	15	5	5	5	5	15	15	20	17	25	20	27	25	17	NNE	17	15	15	12	10	10	10
12	10	10	10	10	10	12	12	20	20	22	25	25	22	22	20	17	20	20	20	17	15	15	10	10	10
13	.	.	.	5	10	10	10	10	10	11	5	11	12	12	16	17	12	10	10	10	13	15	10	10	10
14	.	.	.	12	16	12	12	17	17	17	22	20	22	22	20	20	.	.	.	10	13	10	10	10	13
15	15	20	25	22	17	15	10	10	22	22	22	22	20	20	20	20	17	15	12	10	10	10	12	12	11
16	11	12	15	12	12	17	15	15	17	16	15	12	15	15	10	12	10	10	10	10	12	10	12	15	SE
17	12	12	15	17	12	12	12	12	12	13	5	5	10	5	10	10	10	11	10	5	5	12	12	15	20
18	.	.	.	.	.	.	.	.	.	17	20	17	15	12	10	10	12	15	17	15	12	12	12	17	20

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—NOV. 1846.

	N.	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	NNW	NW	NNW
No. pr } hour }.	299	216	1418	634	487	161	159	1119	140	690	37	1234	.	.	.	83
Velo. } pr hr. }	11	12	100	52	47	14	14	68	13	43	7	56	.	.	.	4
Amt. } Rain, }	28	18	14.1	12.1	10.3	11.4	11	16.4	10.8	16.2	5.2	22	.	.	.	20.3
	.	.	.	.	.	.	.	189	439	.06	1169	.	336	.	.	.

Considering from 6 AM. to 6 PM. *day*, and from 6 PM. to 6 AM. *night*, we have 3637 miles the amount of wind during the *day*, and 2964 during the *night*. 1.367 inches the amount of rain during the *day*, and .826 during the *night*. Total wind 6697 miles, and the rain 2.193 inches. The greatest amount of rain was from the SW. The number of hours during which rain fell was 74; and the number of hours during which the amount of wind is recorded was 451. During 269 hours it was calm.

The foregoing tables are the results of the Self-registering Anemometer and Rain Gauge of Mr. W. Foster, at Stubbington, near Fareham, Hants. Our usual Meteorological Register at Greenwich with these will be continued at present.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

December 1, at East Greenwich, the wife of Robert M. Jeffery, Esq., RN., of a son.

November 25, the wife of W. T. Mainprize, Esq., RN., of a son.

December 4, at Southsea, the lady of Com. J. N. Strange, RN., of a son.

Marriages.

At Bytown, Canada, Henry Aylmer Esq., son of Capt. John Aylmer, RN. to Eliza, daughter of the late James Atkins, Esq., Cork.

On the 2nd Dec. at Stoke Church, Lieut. Symons, RN., to Georgiana Ellen, youngest daughter of Samuel Kerwill, Esq., of Devonport.

On the 3rd Dec. at Stoke Church, Robert Reid, Lieut. RN., to Miss Elizabeth J. Coles, of Stoke Terrace, Devonport.

On the 3rd Dec., at Bath, Lieut. Peregrine Henry Fellowes, RN., to Caroline

Elizabeth, only daughter of Major-Gen. Forbes, Royal Artillery.

On the 28th Dec., at St. Peter's, Dublin, John Scudamore, Esq., to Anne, widow of John Holland, Lieut. RN.

Dec. 8, at St. John's, Margate, Lieut. F. Short, RN. to Anne, daughter of Lieut. Benson, RN.

Dec. 8, at Langton Place, Rear-Ad. Earl Waldegrave, CB., to Sarah, widow of the late E. Milward, Esq., of Hastings.

Deaths.

On the 6th Dec. at his house in Arundel street, Thomas Stilwell, Esq., Navy Agent, aged 85 years.

Nov. 21, at Etla Cottage, Plymouth, the daughter of Com. H. D. Burney.

Dec. 10, Capt. J. Locke, one of the Elder Brethren of the Trinity-House.

Dec. 16, W. Colvin, Esq., Deputy-Inspector of Hospitals, RN.

Dec. 13, at Southsea, Henrietta Anne, daughter of Com. C. Holbrook, RN.

Dec. 9, at South Devon Place, Plymouth, Lieut. W. G. Everest, RN.

TO OUR FRIENDS AND CORRESPONDENTS.

CAPT. MCKENZIE'S paper on Australian Navigation; CAPT. MARTIN'S on Tidal Phenomena; CAPT. BEDFORD, R.N., on Mirage; and the late MASTER OF THE AUDAX on Temporary Rudders and Hurricanes, in our next.

HUNT, Printer, 3, New Church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

FEBRUARY, 1847.

NOTES ON EAST INDIA ISLANDS.—*By Capt. M'Kenzie.*

BALI STRAITS are much preferred by all the coasting and country vessels to the straits of Lombok, as the tides and rippings are not so violent, and there is anchorage on both sides as far up as half way through the narrows. If beating through Bali Straits to the southward, it is requisite to enter with the first of the tide which sets to the southward at about 12h. full and change, (if off the entrance, and the tide is foul, stand close in to the Bali shore where there is little tide, and heave to, or make short tacks under the point), when the tide turns five or six tacks, will carry a vessel through the narrows. If the straits have been entered at the last of the tide, there is anchorage to be had as far north as the bight to the northward of the large tree on the Java shore, but close in; the depth 12 or 15 fathoms.

When approaching Banjoewangie, care must be taken to avoid the two reefs which lie to the westward and north-west of it, also the shoal bank southward of the point. This bank lines the coast and is three or four miles long, and about four miles off shore. From its outer edge Goonory Ekan bears S. $\frac{1}{2}$ W., the first point south of Banjoewangie, and shutting it in N. $\frac{1}{2}$ W., distance five miles; the large tree north of Banjoewangie on with the eastern brow of mount Sadana, and a village S.W. $\frac{1}{4}$ S.; to clear this do not bring the hill of Goonory Ekan more southerly than S.b.W., or the large tree farther east than on with the middle of mount Sadana.

The Bali shore is the best to work along, and if calm, there is good anchorage all along the coast from 12 to 18 fathoms, and the land winds are tolerably regular. In the west monsoon this strait is preferable to the others east of it; as one tide will take you through the narrows into

the widest part of the strait, where you will not have to contend against the same strength of tide setting to the northward as in Lombok straits, during the west monsoon. The tides in all these eastern straits set both stronger and longer to the northward in the west monsoon, and to the southward in the east monsoon, the tide running often seven and eight hours one way.

On the south-west side of Bali is the roadstead of Balli Badong, which is safe in the east monsoon, and is in $8^{\circ} 42'$ south, and long. $115^{\circ} 12'$ east; it is high water at 11h. full and change, rise 8 or 10 feet. To sail into it from the southward, round the south-west point at about one mile, and steer to the north-east for five or six miles, when a reef breaking, will be seen: it runs north and south along the coast and is about two miles off shore in some places. Keep along the edge of the reef in about 8 fathoms when a little farther up a flag-staff and white house will be seen to the north-eastward; when this bears east you will be abreast of the extreme of the reef. There are two detached rocks close to the point of the reef, which do not always break, having six feet at low water springs.

To the northward of the flagstaff is a large tree which may be known by a number of white canoes being under it. When this tree bears east it is on with the shoalest part of a bar, which lies to the northward of the southern reef, and has $1\frac{3}{4}$ fathoms low water, spring tides. There is a passage of 3 and $3\frac{1}{2}$ fathoms between this and the south reef, but it is only used by those accustomed to the place, the best channel is with the tree E.S.E. to S.E.b.E.; by crossing it with this bearing there will be 4 to 5 fathoms, least water. The depth outside the bar is 8 fathoms, and decreases gradually as it is neared; when over, the water deepens to 7 fathoms, and it will be necessary to make a tack or two standing to north-east inshore to $5\frac{1}{2}$. On the other tack a smart vessel would fetch into the best anchorage, the tree S.E.b.E. flag staff, S.b.W., in 6 fathoms, soft bottom. The anchorage farther south is not so good, as the heavy swell that comes in from the southward is felt more there, the rollers breaking on the bar, and coming in with a deep and shorter swell. Several vessels have parted their chains when getting under way by the sudden jerk.

This roll generally comes in at full and change or after there has been a strong breeze outside. Boats land inside of an inner reef off the flag-staff. There is no landing for boats from this to thirty miles north, as in the finest weather there is a heavy surf. This place is safe in the east monsoon, and refreshments may be procured abundantly. Many vessels load rice here for Singapore and China. Abreast of this and on the east side of the island is the harbour used in the west monsoon, called Tanjong Timour, or east point, the west side is Pantie Barrad, or west beach. The entrance is narrow and winding formed by coral reefs, and the tides run three and four knots at springs. When inside a vessel may lie with a warp ashore quite secure from all winds.

To enter this from the southward pass the two small islets east of Table Point, about half a mile distant; steer N. or N. $\frac{1}{2}$ E. for a low island to the north-eastward of a bluff point with a flag-staff on it, and the

reefs forming the entrance of the harbour will be seen ; pass the first one which extends from the point to the S.E. (the extreme is about north from the islets,) in not less than 6 fathoms, and steer for north reef, which lines the shore of the low island, and is steep to, 8 or 9 fathoms. The bluff point west, northerly, and the islets to southward, south, is a good berth for the outer anchorage. The north reef trends to the south-westward, and then takes a sharp turn to the northward for a few hundred yards, and then off to the westward again, round the point where the anchorage is; the depth close in is 12 and 15 fathoms, the soundings near the reefs outside are from 8 to 10 fathoms; in the first reach 6 and 5 near the southern, and 9 near the north reef; in the second reach there are overfalls, rocky bottom, 10 and 18 fathoms. There is said to be a rock in mid-channel, but it is not likely, as it has not been seen by any one that I have met. The reefs are plainly visible. The southern reef is not so safe to approach, as there are several rocks at the extreme with 5 fathoms round them, and the ebb out of the second reach sets strong over the tail of it to the southward. It is high water about 11h. To the west of the point there is a large shoal bay of 3 or 4 miles across, which mostly dries at low water, and as very little water escapes by the shoal passage to northward of the low island, there is a strong rush of tide through the reefs. The soundings along the coast to the northward at about half a mile distance are 12 to 20 fathoms. There are several places frequented by the native proas along the coast Cassoomba, Padang Cove, and Carrang Assam: there is a safe passage inside of Green island.

The north coast is not much known, and there is only one port sheltered from the west monsoon; the principal places on it are Sangsit, Bleling and Tumbuncos. Sangsit is round the most northern point of Balli; there are soundings of 8 and 12 fathoms, sand, for half-a-mile off shore; this is good anchorage in the east monsoon. To the westward of this is Bleling, where the water is deep close inshore; the Heroine at anchor here in 15 fathoms swung with the sea breeze into 2½ fathoms. There is a reef between Bleling and Sangsit one mile off shore, with 8 feet coral rock. There is a passage inside of it. To the S. W. of Bleling is Tumbuncos, a reef harbour, and sheltered from the west monsoon. To the westward is Pateman, beyond this to the westward there are no harbours until Hart island is reached. Some of the reefs stretch off shore a good distance: about ten miles east of Hart island there is a patch having 3 fathoms, and perhaps less, two miles off. The water is deep to the southward of Hart island, and there is a very narrow passage between it and Bali; the water is deep close inshore to the entrance of the straits.* The passage between Gilboan and Java is safe, and there is anchorage in 10 fathoms on the Java shore, a little to the northward of Gilboan: this passage is often used by the country vessels. The Heroine passed over the shoal between Gilboan and Cape Sadana with 5 fathoms; there may be less water on some of the rocks.

* There are two places on the west side frequented by native proas, the first is a little to the northward of Banjoewangie, has a reef entrance, and 5 and 6 fathoms inside, and Djimbrana, a river with a bar about one-third the way to Badung fit for proas only.

The strait between Banditte and Bali is quite safe and preferable to the eastern strait between the former and Lombok, as the heavy rippings which are common in the east strait do not often occur there, neither are they so violent. The advantage of anchorage in light winds is also great, as vessels bound north in the south-east monsoon, taking the east strait, are often drifted to the southward, and detained several days in the entrance.

An extreme case occurred to the brigantine *Planter*, commanded by an old hand about there. She was twenty-one days from West Badong to Ampanan, being drifted to the southward every time she made the entrance, there not being wind enough to stem the tide. There is, however, a bank of soundings some way in the straits, known only to few; it was found in the *Heroine*, which vessel anchored on it, after having been three days in the straits, sometimes not more than holding her own, though a fresh south-east breeze was blowing. It bears N.b.W. from the first island round the north part or point of the south-west point of Lombok, distant three miles; it has 10 fathoms, least water, coral sand, and deepens to 25 fathoms and no bottom. There is also 10 and 12 fathoms to the southward of the north point near a sandy beach, but very close in.

In the southern part of the large bay of Ampanan are five or six islands abounding in deer and wild pigs, the channels between them, having more than 5 fathoms water. There is a reef detached from the eastern island and two small sandy islands farther east about half way to the cove. There would be good anchorage under these in the west monsoon in bad weather, if a vessel could not fetch into the cove Laboan Iring. This even is farther to the north-eastward and has three good berths for anchoring in the west monsoon; the most convenient is close under the east side of the sandy point which forms the north side of the entrance, care being taken not to run beyond a small rocky islet in the east part of the bay. The water is deep off the point, there is 9 and 10 fathoms close to; inside the point there is 6 and 7 fathoms, muddy bottom. The other anchorages in the southern bay are good in either monsoon; there is a reef in the middle of this bay, to avoid which, borrow to the western shore. The eastern strait of Lombok has often very strong rippings and eddies, which will turn a ship round, though a strong breeze may be blowing, and the seas in it resemble heavy breakers, and break on board continually.

The island of Banditte has a small sandy beach on its north-west side where there is anchorage; but this island is generally avoided, as the tides run with great velocity along its steep rocky sides, and some vessels have been carried between it and the small islands on its west side.

On the south coast of Lombok is a deep bay, the peak of Lombok bearing N. $\frac{1}{2}$ E. from the entrance; the east side is formed by high cliffs, and has 20 fathoms water between the heads; inside there is 15 decreasing to 7 fathoms. Allas straits, formed by Lombok and Sumbawa, are convenient, having anchorage all the way through on the Lombok side. Off the south-east point of Lombok there are 25 fathoms, and about the same soundings are found skirting the bay up to Pegu, where there is a

good roadstead for both monsoons, having the south-east point shutting in the end of Sumbawa, and abreast of the flag-staff, but not too close in, as there is a rock with only 6 or 7 feet, on which several vessels have touched when turning. Further north is Loboagee, a place of some trade. The native proas, which draw little water, lie inside the reefs, which are rather more than half a mile off shore, with 2 and 3 fathoms inside of them. The anchorage outside is not good in the east monsoon, as the tides and sea are both strong, and vessels often drag. Segara and Lombok are farther north; the latter is a good harbour. The passage along the coast is good and safe between the Rocky islands and main, where there are 15 fathoms. About S.b.E. of the Rocky islands is a shoal with 3 fathoms or less on it distant two miles; this was passed over by the *Planter*. On the Sumbawa side there are few places with anchorage; one roadstead, Jelewang is about east from Saboagu, but a heavy swell sets in sometimes, as it is open to the south-westward; the anchorage is in 7 fathoms, mud, close round the north point of the entrance, but no communication can be had with the village inland before a day nearly.

In all these straits it is advisable to keep in soundings, as they are more or less subject to calms, especially between the land and sea breezes. Sapy, the next strait to the eastward, has strong tides and deep water. There is a shoal to the southward of Camara, rather in the bight, having only 6 feet, sharp pointed rocks; this was seen in the *Ida* when beating through. The passage between Flores and Soomba is clear, but the currents often set strong to the westward early in the west monsoon, therefore, if bound to the eastward with light westerly winds, it is better to go to the southward of Soomba. Opposite the straits of Mangery is a good harbour on Soomba, fresh water, and refreshments, and horses may be had there.

Coupang, the capital of the Dutch possessions in Timor, is in the southern bight of a large bay open to the west monsoon, but well sheltered in the eastern one. During the west monsoon it often, at full and change of the moon, blows hard into the bay, with a heavy swell, obliging vessels to leave the roads and run either to Semao, or the north part of the bay; in this last there is safe anchorage, sheltered by the north point of the bay, and adjacent reefs from the west and north-west. This is about ten or twelve miles from Coupang; to run from there to the anchorage pass inside of Sandy island, and the next island, Pulo Jekes (moderately high and round), farther north, and then steer for the other northern island, small and rocky (Pulo Boorong); keeping it a little to the eastward, come to about half a mile or more to the westward of it, where there will be 8 or 9 fathoms soft bottom.

Sandy island has also good anchorage under the lee of it in 12 to 6 fathoms sand. The anchorage under Semao is bad and rocky, the bank is steep, and it is not prudent to go nearer than 12 to 14 fathoms; and as the tides run very strong if the anchor once starts you are swept into deep water. These straits are narrow, but safe, the *Heroine* having passed them several times in the night. There is a small spit off the first northern point on the Timor side.

There is a good harbour on the north side of Rottee, called Rangoo,

formed by the adjacent islands and reefs; the passage in is westerly close round the reef that extends off the south point of the next island to Rottee; it then turns to the southward, and leads to a fine bay and sandy beach perfectly land-locked.

Dilli is the chief port of the Portuguese in Timor; its harbour is formed by coral reefs, and has two entrances, a western and eastern one. The western is the broadest, and the only one yet used, but the eastern one was found in the *Heroine*, which vessel passed out through it, as it is very difficult to get out by the western one if the land wind is not blowing. It may be entered night or day by the western entrance in clear weather by placing a boat with a light on the tail of the middle reef. To enter by this channel, round the end of the west reef, which extends off the point, and then steer for the custom-house (which is a large building on the beach to the westward of a large tree,) and keep it on with the door of the church behind it; by this you will pass close by a small coral patch of 10 or 11 feet, with a bamboo on it. When inside of it steer for the western part of the harbour, and when midway between the bridge on the west side and the custom-house come to, there will be about 9 fathoms; it is abreast of a white house: the beach is steeper and smoother here than off the custom-house. There are also two coral patches which both boat and vessels have touched on by being too far to the eastward. To come in by the eastern channel keep the large tree on with the house between the church and custom-house; this will lead in between the reefs. When abreast of the tail of the great middle reef round it close to avoid the shoals in shore near the custom-house, and come to when off the white house. This channel has the advantage of a leading wind in the west monsoon, which blows strait through the other, and saves a day or so, besides the risk and labour of kedging out, and which is often impossible.*

To the eastward of this is Manatoti an open roadstead, but a few miles farther east is a snug little cove sheltered by reefs from all winds, and 8 and 9 fathoms water inside. There is anchorage between Pulo Jackee and Timor, but the tides run very strong. The straits of Ombay are liable to calms, and the tides are much influenced by the monsoons. In fine monsoon weather, they run longest with the wind, though often in light westerly airs the tide sets for eighteen and twenty hours to the westward, particularly off Point Maubarra.

Port Essington is a fine and spacious harbour: if going in from the westward round Vashon Head, which is low with a range of trees, one part detached from the rest, keep in 5 or 6 fathoms, and no nearer, as several vessels have grounded on the shoal that extends a considerable distance off the point. The depth in the fair way is 7 or 8 fathoms. When nearly in a line with the heads steer for the eastern shore, and keep it on board, the soundings 8 fathoms; but when a low sandy point is approached, the water will deepen, and it must be passed close to, then steer a little to

* The soundings in the western channel are about 8 to 12 fathoms and in the eastern one 15 to 7 fathoms outside the reefs and to the north-eastward there are 25 fathoms for some distance out; the tides set strong round the N.E. Point, the *Heroine* drifted once very close to it though there was a light breeze.

the westward of the next headland to the southward; this will lead clear of the shoals on the west side of the bay, opposite Point Record; when about one-third over keep up for the settlement, and when the flag-staff on the pier is on with the black stone above it, come to in 3 or 4 fathoms mud. This is about the best anchorage,—fresh water is abundant in the west monsoon, but in the south-east it is sometimes not procurable without rolling casks a long distance, as the wells in the settlement are required for the use of the marines and stock. There is a small stone beacon on the easternmost point, (Smith) it is a good mark for the harbour, as the appearance of the land is similar along this part of the coast. Several have gone into Port Bremer by mistake. This would be a place of some trade with the eastern islands, if the natives received more encouragement, as it would have a leading wind in both monsoons to and from the islands adjacent.

Salawatty straits are full of small islands, and the tides are very rapid. The *Heroine* went some way up them, but found that the inhabitants would have no communication with the vessel. There is a village on the south side of Salawatty, under the Rajah of Ternate. The soundings on the coast are 6 and 7 fathoms, and to the eastward along by New Guinea the shore is lined by a shoal mud bank two or three miles off; there is 4 or 5 fathoms along the edge of it, but no opening was found in it though there were appearances in the land like the mouths of rivers.

From Slade island W.S.W., distant about three miles, is a reef partly above water; there is 5 to 7 fathoms all round, and between it and Slade island is a good passage. After passing Macluers inlet the coast to the southward is high and rocky, with deep water close to. A few miles northward of the south-west point is a high island close inshore, and inside of which is a bay and anchorage, the bay well wooded, and some streams of water. Round the south-west to the eastward is another high island, and about twelve miles east of it is a long and rather low island. S.b.W. $\frac{1}{2}$ W. distant three or four miles from its eastern end is a reef 6 feet coral rock. Between the east point and the main is a small island, Pulo Tinga, moderately elevated; near to and connected to the main by a reef with 10 and 12 feet water on it; near the island Pulo Tinga, on both sides, there are 20 fathoms mud, and the same depth extends through this strait, which is, in some places, two miles broad, to the western entrance which is narrower. The anchorage is safe on either side of Pulo Tinga, according to the monsoons. This place is called Cowpou by the natives; there is plenty of wood and water here; the boats could come in and out of the river loaded at both high and low water. To the south-eastward of this is a high island, Pulo Condi, separated from the main by a narrow shoal strait, only used by the small proas. This island abounds with a large bird called Boorong Coondi, slate-coloured, with a comb on the head. Farther to the E.S.E. is a place called Carrasse; it is a large bay fronted to the westward by an island of considerable size, which forms two channels in, one northward and the other south. To the eastward of the north end of Pulo Laut, are two small high islands about a mile apart. Round these and between them there is deep water, no bottom being found in either the north or south channels, or between

the islands with 50 fathoms. The usual anchorage is on a steep spit of coral and sand, that runs off the north point of Middle island; the anchor should be let go in about 18 fathoms, as, if closer in, the vessel in swinging would touch in shore, as the bank is very steep. The village is on this part of the island, and the other village is on the south part of north island, which has deep water close to it; no bottom was found in the boats all round north island with 7 and 8 fathoms. The best anchorage for the east monsoon is on the west side of Middle Island, off a sandy beach with a grove of cocoa nut trees; there is a fine sandy bottom and 10 or 12 fathoms water.

On all these islands there are fresh-water streams, and close to the village on Middle Island, the water may be led into the boats by a hose at high water. In the west monsoon there would be good anchorage either under Middle Island or Pulo Laut, along the east side of which there is soundings from 25 to 15 and 12 fathoms. The channel to sea south is several miles broad, and apparently clear of danger. The coast to the southward towards Cape Katoman is bold and rocky, and about thirty miles to the southward of Pulo Laut is a large fall of water over the high cliffs into the sea, visible fifteen or twenty miles. When the sun is shining, it appears very brilliant; there are three or four small rocky islets near it and close in shore. After rounding Cape Katoman, a few miles to the eastward, there are two rocky islands said to have a passage inside of them. Some distance farther east, the water is of a dark green colour, but no bottom was got with sixty fathoms of line. Farther east is Pulo Adi, a low well-wooded island, separated from New Guinea by a strait of about six miles wide. This point of New Guinea is low and sandy, and the land trends back into a deep bight to the north-westward, and the natives say there are three high islands in it. There are several small islands or islets off the north and north-west side of Pulo Adi, and amongst them there was no bottom found with 6 fathoms line, in the Heroine's boat sent to see if there was a safe passage on the north side of the island. From the western side a bank of soundings extends off for about six or seven miles, having from 20 to 5 and 6 fathoms in shore, sand and coral; along the south coast the soundings for two or three miles off are 20 to 25 fathoms, and in the passage between Adi and the sandy island on its south side, there is 17 and 18 fathoms, sand and shells.

Pulo Adi has numerous streams of fresh water, and is well wooded, there are a great quantity of pigeons and ducks, also a kind of goose, similar to that which abounds on the north coast of Australia. There are not many inhabitants, none being seen on the west side. The Sandy island on the south side is low and woody, abounding with turtle, the natives call it the Egg Island. About forty miles to the eastward of this is Aduma; to the northward of it there was formerly a Dutch settlement, but it has been abandoned for some years. Ten or twelve miles east of Aduma is a deep bay fronted to seaward by a long rocky island; the western entrance is the broadest—about half a mile wide: when in the narrowest part of it the water shoals suddenly to 7 and 8 fathoms, rocky bottom, and then quickly deepens to 30 and 25 fathoms mud.

This is the average depth all over the bay, which is about six miles across, interspersed with small rocky islets which are mostly steep to. The east entrance is narrow, and there are several islets and rocks in it, and as the tide runs strong with eddies it could only be used in case of necessity.

These places in New Guinea produce wild nutmegs, massoy bark, biche-le-mer, tortoise-shell, and birds of Paradise. The nutmeg trees are plentiful, growing in the forest amongst the other trees, and the nutmegs are generally gathered and dried by a fire under the tree, and afterwards collected. The New Guinea birds of Paradise are more valuable than those of the adjacent islands, being a much brighter golden colour.

The inhabitants are generally savage, treacherous, and indolent, and not to be trusted. Coarse cloths and iron are in great request amongst them; the iron they make into spear and arrow heads and swords, broad at the point, and narrowing at the hilt; gunpowder and musketry has been introduced, but is generally kept as part of the riches of the possessor. Cocoa-nuts and other tropical fruit have been introduced by the Malays, and are only found where they have been. They spear their fish the same as the North Australian, and paint their bodies and discolour their hair with lime. There is often a great deal of rain during the night with sharp squalls, and in the day it is very sultry and oppressive, so much so, that double awnings were required, and several of the Malays, who formed the crew, had severe fevers. The current sets with the monsoon between Kii and New Guinea, at about one mile per hour, but much depends on the strength of the previous winds.

The monsoons blow here as regularly as in the Timor sea; sometimes the west monsoon is late in coming, but that has been the case the last two years, as far west as Java; yet, in 1843, the west monsoon blew strong as late as May, the Heroine having to beat up from Arru to Goram, and found a strong set to the eastward. The water is generally very deep on the New Guinea coast, opposite Kii, and there are often large shoals of sperm whale about there.

N.B.—When the east and west monsoon are mentioned, N.W. and S.E. are meant, the monsoons being usually called so by the country traders.

M. M'KENZIE.

EFFECTS OF WIND ON THE TIDES AT RAMSGATE.

Royal Harbour Office, Ramsgate, Dec. 16th, 1846.

SIR.—I reserved the four diagrams of October and November for comparison, as the tides in these months are generally very strongly marked, *as far as my experience goes*; and, in this instance, we have remarkable fluctuations, and one of the lowest ebbs on record. It has always

appeared to me, that the tides with us at Ramsgate are more influenced by *local* than *general* causes.

October.—A heavy gale of wind from the southward on the 5th, no doubt accelerated the stream of ebb, and retarded the following young flood, for, you will perceive, it ebbed eight hours, and flowed little more than four hours; the following high water shewing a decrease in lieu of an increase, of the tidal column, which the moon's age would have warranted, and the succeeding ebb left our harbour almost dry at low water, a very unusual occurrence. The weather moderated, and the tides immediately regained their course for a few days; but, on the 14th, a heavy gale from the southward and south-west, succeeding to the previous light breezes from the northward, had an extraordinary effect upon the flood tide, as the gale of the 5th had upon the ebb. At high-water we had little more than a foot above the mean level, and the effort of the tidal column to regain its equilibrium on the 15th and 16th is very strongly marked, and, I think, renders this diagram from the 5th to the 17th of October, a very interesting one.

On the 20th October (new moon), with fine weather, the high water was at an average level, and, on the 21st, it would have increased, but a heavy storm from the southward held it in check, and the flow was much below the average, till the 24th, when a shift of wind to the northward, with moderate weather, again restored the tides to their course.

The first fortnight in November was very fine, as is evidenced by the beautiful uniformity of that diagram, but, on the 20th, the wind flew out suddenly in a squall to the south and S.S.W., and the tidal column was instantly affected. The 21st should have been the highest tide of the springs, but it was three feet below the average.

With our Ramsgate boatmen and pilots, the rise and fall of the water in the harbour is an unerring barometer. With a breeze from the N.W., they may be heard to say, "We shall have a hard gale to-night," and if asked, Why?—"Why! look at the tide, there is *no* flow; *southerly gale coming*;" and, by the same reasoning, in the height of a heavy gale from S.W., they will say—"Soon over! soon over! the wind'll fly in to the northward; see how the tide is running in to the harbour." I never knew them mistaken, and hence it follows, that the rise or fall of the quicksilver with us appears to have no effect upon the tidal column. Northerly winds with us invariably produce a rapid rise of the tidal column, and as quick an elevation of the mercury, and, consequently, they rise together, and fall together; but I imagine that the effect at Guernsey may be *the reverse of this*, as a south-west gale increased the level to a great degree at high water in that locality. Again, I have often been surprised to read in the newspaper of a very high tide and the flooding of wharfs and quays in London, when we have had *at the same time* a tide rather *below the average*; and, at other times, a high tide in the Thames, *corresponding* with a very high tide at Ramsgate. This has perplexed me much, and I could only reason it out by supposing, that, in the *first* instance, the cause was confined to the German Ocean by a storm acting upon the waters of its area, and propelling them towards the northern entrance of the Thames, without extending its effects

to *our locality*; and, in the *second* instance, that the cause proceeded from the British channel through the medium of the *southern* entrance of the Thames, and affecting our harbour in its passage; but the highest tide I remember at Ramsgate, was in (I think) 1816, arising most probably from a combination of these causes. The storm was S.W. at Ramsgate, and N.W. in Yarmouth Roads, flying suddenly into N.E., and surprising us by the arrival for shelter here of several vessels which had been blown away from that roadstead. This tide covered our walls which separated the inner from the outer harbour, and took a vessel that was building off the stocks. It was six feet higher than the average spring-tides, shewing 26 feet in the harbour entrance.

As Chairman of the Commissioners of Salvage, I often elicit some very curious opinions on the tides. Last week, a Norwegian captain attributed all his misfortunes to *the tides*. He had got hold of the indraught of the Thames tide, saw the Knock Light in the S.E. of him, and supposing it to be the Galloper, shaped his course accordingly, and became entangled in the sands. But I ask, Where was the lead? The soundings are so decisive in that locality, that a cast of the lead and the bearings of the light-vessel would be all sufficient. While I am writing this, a fine Grecian brig is going to pieces on the Goodwin Sands, with a valuable cargo from Antwerp bound to the Mediterranean. The crew landed at Broadstairs, and they state, that being very thick, they saw no light, but fancied they were too near the Flemish banks, and, in keeping over this way to clear them, sheered on shore upon the Goodwin. Where was the lead? Navigation and pilotage are at a low ebb indeed if vessels cannot leave the Scheldt, and with a fair wind get through the Straits of Dover.

Dec. 11th,—Before sealing this, yet another case arrives. The brig *Flavia* of Exeter, from Exeter bound to Yarmouth, from off the Knock Sand, severely damaged; drawn out of his course by the tide. The same excuse, and, no doubt, the same cause—neglect of the lead.

I remain, &c.,

K. B. MARTIN, *Harbour-Master*.

To the Hydrographer of the Admiralty.

OBSERVATIONS ON THE PHENOMENA OF TERRESTRIAL REFRACTION.

I HAVE been induced to make the following remarks, from the perusal of a paper on this subject, by Doctor W. Kelly, R.N., and which appeared in the August Number of the *Nautical Magazine* for the last year.

The result of the Doctor's observations seems to me to accord so well with the established theory of refraction, depending upon the transmission of the visual rays, through mediums of varying densities, that it may perhaps be interesting to some of your readers to trace the connexion which I have attempted to establish in this paper.

When the superincumbent air is in a state of comparative equilibrium;

and the vapour contained in it is impartially distributed, I apprehend that no perceptible distortion of image will take place. The air may be denser or more rarefied according to its temperature, and the moisture may be in excess or defect of its mean quantity, so as to increase or diminish the refraction; but so long as these conditions were equally diffused over that portion under examination, there would be no apparent distortion, and, indeed, the observer, without the aid of an instrument, could scarcely detect the presence of any unusual cause of variation. Immediately, however, this state of equilibrium, or equal diffusion of the refracting medium is destroyed, the visual rays, instead of describing nearly uniform curves, will be deflected variously, according to the condition of the mediums through which they are transmitted.

By reason of the highly elastic nature of the atmosphere, no very partial effects from varying causes, could, I imagine, be maintained: and therefore, it seems to me that, the principal causes of unusual refraction arise from the changes produced in the *aqueous* portion of the atmosphere, by alterations of temperature: and these changes will be more or less remarkable, according to the quantity of moisture present. Where the air is saturated with moisture, it will require but a small change of temperature to produce a perceptible effect on the refraction, compared with what would be required when the air was dry.

Let us now see what would be the effect assigned by theory to that condition in which the surface water was *colder* than the incumbent air. The moisture in the latter would be condensed, and from its increased gravity would descend and augment the refracting power of the medium, so that rays transmitted through it, from any distant object, would reach the eye under a greater angle of elevation. The moisture so affected, frequently rests upon the land or water in a strongly defined stratum; and when its height is less than the object seen through it, distortion will be very evident, and sometimes very curious. In the North Sea during this state of the atmosphere, I observed the luff of the jib of a fishing smack, about two miles distant, to be bent and assume the shape of a jib-topsail.

A distant ship, seen at the same time, was affected in the following manner:—The hull appeared of its proper form and size, perhaps somewhat larger, and the courses were not so much contracted in height as the top-sails, whilst the top-gallant sails retained their usual appearance. Now, that part of the stratum of vapour which was near the surface of the sea, might, I conceive, be very nearly of the same density; and hence, rays proceeding from objects immersed in this medium, being affected nearly in the same degree, would bring to the eye an image but very little distorted from its real proportions, although the *direction* would be erroneous. The courses would be influenced much in the same manner, but with less uniformity; for, being in the higher and more rarefied part of the medium, they would be less refracted in their upper parts than in their lower, and a slight contraction would therefore be evident; but, in the case of the top-sails, whose upper portions were *above* the influence of the extraordinary refraction, the rays proceeding therefrom would reach the eye under the usual angle of elevation, whilst the lower

parts, being *within* the medium of extraordinary refraction, would be elevated above their true position, and hence give to these sails a very sensibly *contracted* appearance. The top-gallant sails being entirely above the defined stratum of vapour, would appear of their ordinary shape.

These phenomena were, in my opinion, concomitants of that condition of the air and water, in which the temperature of the latter was lower than that of the former.

When the surface water is *warmer* than the incumbent air, a contrary effort will generally be produced, and more particularly when the air is unusually dry. Under these circumstances, there is no tendency to *stagnation*, as in the former case, where the moisture descends and hangs on the surface in fogs or dense vapours, thereby increasing the refractive power; but the evaporation from the water being regulated by the demand in the air, is continually carried upward (*not accumulated*), until it meets with an arresting atmosphere, and is condensed in vapour and cloud. Calms are, therefore, more particularly favourable to the production of the mirage with elevated horizon; for a breeze, by disturbing and dispersing the stagnated medium, will, in most cases, destroy the phenomenon.

A variety of circumstances may occur in these partial affections to modify the results of general principles, and it shews us how very difficult it is, even with the help of a dip-sector, to obtain a true correction for refraction; for where these mirages are of frequent occurrence, as in the Polar Seas, and Gulf of St. Lawrence, owing to the presence of currents of unequal temperature, how often may the opposite portions of the horizon be under the influence of unequal intensities. From these variations of density in the different parts of the superincumbent air, it is almost impossible that the amount of terrestrial refraction will be the same at different times, for different places. The visual rays, instead of describing regular curves, may be deflected in a zigzag line; and this circumstance will sufficiently account for the wide difference in the values assigned by the several observers to the effects of terrestrial refraction.

For the same reason, the indications of the thermometer and hygrometer will be, in general, too partial to account for phenomena produced at a distance.

The occurrences of mirage during strong, or even fresh winds, can be, I imagine, but seldom, particularly of that kind with elevated horizon; nevertheless, the atmosphere, by being charged with an unusual quantity of moisture over a wide space, might continue for some time to produce mirage of the latter description, even in the presence of a strong breeze; while those with the depressed horizon might more readily exist whenever the air was unusually dry.

As the temperature of the sea is not changed by solar influence nearly in the same degree as that of the air, this circumstance, considered by itself, would be most favourable for the formation of mirage with *elevated* horizon, when the latter had attained its maximum temperature, or at some time in the afternoon; whereas, that of the former kind would,

from the same circumstances, occur more frequently in the morning. Again, as evaporation is usually more active during the heat of the day, it would operate against that *stagnation* which I have considered favourable to the production of mirage with an *elevated* horizon; but as the air became cooler, this activity would be checked, and a condensation of moisture near the surface of the sea, and increased refraction would probably take place. So that two circumstances combined would seem to point out the latter part of the solar day as the time when this kind of mirage will be most frequent. The light winds which often succeed to the fresher breezes of the day may also have their influence.

While employed in the North Sea survey, I had frequent opportunities of observing the curious and important effects produced in the atmosphere by the various causes above mentioned. Our operations when out of sight of land, depended very much on the horizon and the subtending angle of the Tender's mast, which are both materially affected by the changes in the state of the atmosphere near the sea. I have known the latitude of the same position to differ $2\frac{1}{2}$ miles by meridian observations on two consecutive days; and the longitude would necessarily share in the error of the latitude as well as in the originating cause. The use of the dip-sector, and the method of observing the altitude, north and south, should therefore be resorted to; for, although (as I have before remarked), even these might give erroneous results, they would materially serve to decide our judgment as to the value of the observations.

The subtending angles were, from the same causes, very materially and frequently affected, and the distances deduced therefrom incorrect. In the case of an elevated horizon, the lower part of the vessel being more refracted than the upper, the observed angle is therefore smaller and the assigned distance proportionally greater than the truth; and this error increases as the object is nearer to the horizon. Hence the propriety of great caution in using this mode of obtaining distances; and the preferable method of a base found by two objects, especially in establishing the several positions of the stationary vessel.

At present, I despair of seeing these fluctuating causes and effects brought under the subjection of any law that could enable us to assign its true amount, and to correct those observations which come under their influence.

G. A. BEDFORD, *Commander R.N.*

THE MASTER OF A BRITISH MERCHANT SHIP AND HIS EXAMINERS.

1, *Turner Street, Commercial Road,*
Dec. 24th, 1846.

SIR.—In the various numbers of your valuable Magazine, I have observed, from time to time, a list of the Masters and Mates who have voluntarily come forward in conformity with the regulations, on the subject of examination, issued by the Board of Trade.

In the last number of the *Nautical Magazine*, the number, made up for the year, from the time the order was promulgated, appears to be but 123 "Masters" and 34 "Mates. That this number bears so small a proportion to the whole of the Masters and Mates of our merchant navy, neither "gives rise to many nor serious reflections" on the subject, to those more immediately conversant with the feeling that is abroad relative to this matter. Not that the majority of the officers in the merchant navy are either deficient in nautical skill or education to stand the test of examination; but I know the question arises among the masters, By whom am I to be examined, after a long apprenticeship of tried experience? By parties who, in many instances, are not themselves practical seamen, and holding their appointments either by interest or favour. A ship-master of any spirit and experience, must feel it humiliating to stand before such persons to be catechised in a crude theory, on seamanship, which, however scientific it may sound before the Board of Examiners, to three-fourths of them would be but a stumbling block in practice.

This feeling leads me to think the system will prove a failure; besides it is neither politic (nor, in this case, expedient) to make any law retrospective, which, by meddling with rights, or privileges which habit has confirmed and sanctioned as rights, are sure to arouse the jealousies and prejudices of men against them, no matter however judicious and salutary their object may in the end prove to the community at large, as well as to the party immediately meddled with. This particularly applies to the examination of Masters and Mates in the merchant service, and I do not know if there is any class of men more jealous of their professional pride, than the genuine old and experienced "tars" are generally found to be. I do not anticipate any mighty results that will arise for the improvement of our merchant marine, or that it will add either to the security of life or property; as a close investigation of facts, and experience leads me to entertain serious doubts on this head. But if it should tend to allay the public clamour, and give it confidence, and above all, to raise the masters and officers in the merchant service to that standing and respectability in society to which the anxiety and responsibility of their duty justly entitle them, I wish the system every success. For this purpose I think it would not only be a just, but wise amendment, to the order of the Lords of the Privy Council for Trade, on the examination scheme, that all Masters who could produce certificates of good conduct and service as Master in the southern foreign trade, for six years and upwards, should entitle them to a first class certificate; to those of three years, and under six, a second class certificate; while masters in the coasting trade, should also receive second and third class certificates in proportion to services and good conduct. This would at once obviate the present prejudice; and the rising candidates for promotion would come forward without the feeling that keeps back the old and experienced. And I have no hesitation that if this mode was put in practice, the next yearly return would shew a very different result; as it is to be hoped that the majority of the Masters in command of merchant ships are able and willing to have and to meet a full

investigation of character, however jealous they may feel at touching their professional capacity. And, it is to be hoped that this investigation would lead to a more respectful consideration to the *ship-masters' claims on society at large*.

On this head, every shipmaster who has constantly perused the *Nautical Magazine*, must feel grateful for the fair and manly way in which you have ever advocated their claims on the consideration, both of their countrymen and their employers. The latter, we are sorry to observe, in a majority of numbers, treat this class of their servants with a distance and even disrespect, which but ill accords with the value of their services, and the trust they have to confide in the masters of their ships. We have long been taught how to account for this seeming anomaly, and, in my humble judgment, it admits of but one solution, which we cannot pronounce as creditable to this class of owners; and, in the hopes of their having to adopt a speedy amendment in this respect, I shall suppress the mention of it, feeling assured that, ere long, by the revolution of events, if not corrected, it will manifest itself.

It would be really a difficult matter to point out a class of men of whom so much is required, and to whom so much is confided, and which is so poorly remunerated for services, as the ship-master. Hence, perhaps, (the cheap rate at which his honesty is purchased,) the cause of his being so little respected in the presence of his employers; and when worn out by age, or the effects of pestilential climate, his having neither retiring pension nor allowance; while a copying or corresponding clerk in his owner's counting-house, enjoys, in addition to a comfortable home and his good night's rest, an equal, if not larger salary. I have often felt the degrading position of a poor ship-master's family when standing in a broker's office;—the widowed wife and mother, whose partner is abroad on the ocean, watching with anxiety and toil over the fortunes of his employer, and a portion of the wealth of his country,—subjected to the jeers and titterings of the owner's young clerks perched on their trees at the desk, when drawing her monthly money, which, at the most, does not generally exceed £5. per month; while the wonder goes the round of these gentry how *she manages to dress so spicey on her monthly money*, and such other most obnoxious remarks. But I have trespassed too long on your valuable time and patience, and shall leave these crude observations to your own good-will and disposition, as to whether or not they may merit a place in your *Nautical Magazine*.

I remain, &c.,

AN OLD SAILOR.

[“An Old Sailor” may be assured that one of the first objects of this Journal is to expose the abuses of the merchant seamen of all and any kind, either afloat or on shore, with a view to their correction. And as they must be made known, and the system which permits them, as well as the perpetrators of them exposed, before they can be corrected, he will be aiding us in our object by pointing them out to us as opportunity offers.—ED.]

AUTO-BIOGRAPHICAL SKETCHES, by a Merchant Sailor, illustrative of the State of the British Merchant Service.

(Continued from page 33.)

AFTER remaining six days in Loch Boisdale, the approaching summer, long days, and fine weather, induced our frightened skipper to depart, and we reached our destination at Westport without any accident worthy of being recorded, the usual routine of discharging and loading occupied the time during the first few days, without any event occurring worthy of remark, Sunday brought the usual relaxation from labour, and I went to the church, in the Marquis of Sligo's grounds, close to the harbour. There, accident brought me into contact and acquaintance with a family residing about two miles from the harbour, with whom I invariably spent my evenings afterwards, and both skipper and shipmates were astonished at the regularity with which I used to dress after the day's work was over, and hurry off to my friend's house, where I enjoyed many a happy hour, in the midst of a numerous family all musical, and extremely hospitable. The master resolved to fill the whole hold with oats. We were soon turned out of the fore-castle, which, with the cabin, was completely filled. Our chests were all bundled on deck, and there remained during the passage, while we all lived in the square of the companion hatchway aft, the skipper first getting his meals, and then the crew. There was barely room for one watch at a time to crawl into a hole on the top of some fitches of bacon which were stowed in the steerage, and formed our beds during the passage. The master was continually grumbling about something or other, and the grin of discontent was never off his countenance. He was the most unhappy, discontented, and miserly man, I ever knew, constantly fancying he was robbed and cheated, and evidently annoyed if he thought any of the crew could enjoy themselves rationally. He attempted to interfere with my nightly visits to my friends, but as I was always at my duty, he found I would neither tell him where I went, nor discontinue going to enjoy a society which proved the only consolation I had, while on board a vessel, under such a disagreeable master.

Our cargo was laden in about three weeks, and leaving my friends with great regret, we sailed, pursuing the route round the south end of Ireland to Liverpool, where we arrived, glad to get quit of a disagreeable master and a very uncomfortable vessel. While the vessel was being hauled into dock, my shipmate, the southern-going tar, amused himself at the expense of those harpies who visit all vessels just as they arrive, to coax the seamen to their lodging-houses, where he may be conveniently plucked. According to the length of voyage, and the probable amount of money the men may have to receive, (for they can calculate the whole very nicely), they use more or less energy to get the men snared. Beer is conveyed on board while the vessel is yet in the river, or entering the dock, under the clothes of the women, who are employed generally as the decoy ducks. As we were busy hauling through the basin, a party of these characters were standing on the quay, anxiously awaiting our com-

ing within hail, when they asked where we came from; my shipmate promptly answered from the Cape of Good Hope. In a moment the whole were in commotion, striving who should first get a boat and get on board, when we were supplied liberally with beer and grog, the greatest inducements meanwhile being held out for us to choose a lodging-house. After getting, what he alone contemplated, a good drink, and hoaxing the sharks, as he called them, my shipmate told them the truth. They could not at first believe it, but an appeal to the master confirmed the man's statement, when so great was the rage of the disappointed, that I thought they would have commenced an assault on the deceiver. He, however, only laughed at them, and they retired much chagrined; but, I have no doubt, mentally resolved to make up for the present loss and disappointment, by an extra plucking of the next victims.

This abominable system by which men are daily hurried into these dens of iniquity, is still continued, and will, I am afraid, be continued until some more stringent police regulations are established. It is a point, however, of great importance to the sailor's well-being, and it is to be hoped that the Sailor's Home Committee, when that Institution is ready, will devise some means of enabling the sailor to have a chance of deliberately choosing that as a residence.

This voyage to Ireland occupied a few days more than three months, just as long as I was in making the next voyage to and from the West Indies. A voyage which ought, under ordinary circumstances, to have been made in three weeks, was thus protracted over as many months, through the want of decision and energy on the part of the master, who could not make up his mind to avail himself of the shelter of a harbour at the commencement of the gale, and was thus driven into danger, and to a greater distance from his port of destination, than he was when he first started from Liverpool. I recollect coming to these conclusions at the time, as it was a source of conversation frequently in the fore-castle; sailors are not so inattentive to what is passing around them as their masters too often suppose.

I had only been a day or two in Liverpool, when I met my old master, Jemmy, apparently quite well. He spoke very kindly, told me he was going to the West Indies in a brig belonging to the same owner as he formerly sailed for, and invited me again to sail with him. Notwithstanding the resolution I made on the conclusion of the former voyage, I at once agreed again to accompany him, and in a few days joined the brig, when hauling into the river, bound to the West Indies with a cargo of stores for the planters, and to receive in return a cargo of sugar and other West India products. The master wanted me to become second mate, but I declined, as I had no experience in stowing sugars, which the second mate in these vessels always superintends. I found our chief mate a fat, red-faced, blustering Welchman, not at all sparing of his oaths, or particular about his expressions; I got a large share of both 'ere the vessel was in the river, in consequence of something having jammed the bunt gasket of the main-topsail, which I was loosing, and preventing my getting the sail clear as soon as it should have been.

The second mate was a quiet, easy-going man, of no energy and little experience, the crew just such a collection of thoughtless, careless, but good seamen, as generally go in such vessels.

Notwithstanding her sufferings on the former voyage Mrs. M. again accompanied her husband, and kept him sober all the passage out, which passed over quickly and quietly, in the ordinary routine duties, keeping rigging and sails in order, and when in the trade winds, preparing our boats and gear for discharging and loading our cargoes.

We arrived in the magnificent Bay of Kingston in the island of — after a very fine passage of twenty-nine days. Jemmy and his wife landed, with their traps, and took up their abode with his relation, a planter, the mate was left in full charge, and I heard the master, among the last words he said, tell him to send to the consignee's store for any thing he wanted. We had no spirits on board on the passage out for the crew, the master saying that it had been forgotten in Liverpool. This may account for the quiet manner in which the passage out passed over, at least it is a fair inference, as the relation of the events occurring during the other part of the voyage will prove. The master was scarcely an hour out of the vessel when the mate ordered the boys to go on shore and bring on board a small cask of rum, a glass or two of which was served out to the crew as soon as it came on board. We were very busy till dark mooring ship, unbending sails, getting out the boats, rigging the derrick and otherwise preparing for discharging the cargo, which is done in the vessel's boats.

Soon after supper the mate sent forward a friendly invitation to the crew to come aft and enjoy themselves, which, of course, was a proposition too congenial to the habits of sailors to be refused; aft we accordingly went, when we found the mate very much excited from drinking. He proposed having a spree, grog was served out, the quarter-deck cleared away for a dance; and the dance and song went on alternately, the deck being illuminated with lanterns, till the mate became drunk, and all the crew more or less excited, the scene finishing sometime after midnight. From this time the mate remained in a constant state of excitement through drinking but while he was so, he was careful that the crew should never relax in their attention to their duties. Next morning we were called at daylight, and commenced discharging cargo. The mate appointed the second mate to superintend getting the cargo out of the hold, while he caused me to take an account of the marks and numbers, and when the boat was loaded, sent me in charge of her to the beach. The method of landing goods was a wet one, but in that climate it was no inconvenience to be constantly in the water. Our plan was to let go the boat's anchor just outside the surf on the beach, and veering away cable until she came as close as it was prudent, a stern-line was made fast on shore; we then took the packages on our shoulders or heads, and breast-high in the water waded on shore, where we deposited them on the beach. During the time we were discharging the mate remained intoxicated, but still on deck; he insisted on my keeping the cargo-book, and, in a week after we came in, wanted me to write up his log; this, however, I refused, but kept a copy on paper. He also entrusted me with the keys

of the lockers in the cabin, as he seemed to fancy they would be safer in my possession than that of any other person or himself, at the same time he became excessively jealous of me; as I never took grog, he seemed to fear my informing the master; however, such a thought never entered my head, as I considered I had nothing whatever to do with his conduct.

The crew, a good-natured jolly set of fellows, relished the constant evening amusements very much, and continued dissipation soon began to tell on them. With one exception, they drank freely, and it is only astonishing, they did not oftener fight and quarrel than they did. The exception I allude to was the cook, an old man of great experience, whose career had been a chequered one. He was a Guernsey man, had been sailor and smuggler; pressed on board a man-of-war, he had been a petty officer in more than one of the most brilliant frigate actions in the war, had left the service with a pension, again became smuggler, was taken, deprived of his pension, and thrown upon the world without support. He had travelled over great part of the Continent with an organ, an itinerant musician, could speak several languages, but ended in his present capacity as cook of a merchantman. Many an hour, during the dog watches at sea, and in the evening in harbour, I spent in the old man's company, listening to his stories, and asking questions about his former life. On one point alone I could never get him satisfied, that smuggling was a crime. He was a free trader in the widest meaning of the term, and his eyes would glisten with pleasure as he recounted the deeds of daring he had been engaged in, in his smuggling career. The old man never entered with zest into the dissipation going on on board; he would take a glass or two, but never too much; he would sing a song occasionally, but always went to his hammock early, and gave me much good advice, assuring me that there would be some queer work 'ere long. In all the difficulties I had, in consequence of the mate's jealousy, I referred to the cook, who always gave me judicious advice.

It may be wondered at by those unacquainted with the West India system, why the master never discovered the mate's misconduct, but he lived constantly on shore, and only came on board once in the forenoon, accompanied by some of the merchants or planters. The mate was always ready at the gangway to receive him, touched his hat, and in answer to the few questions asked, gave suitable replies, never betraying his own half intoxicated state, or the irregularities going on at night. The master and his visitors would then descend into the cabin, get lunch, for which purpose they came, and go on shore immediately; the one visit thus daily made being the only time the skipper was seen. To myself, who had former experience to guide me, it was very evident that Jemmy had returned to his old habits. There was the old unmeaning vacancy in his stare, the evident indecision in his manner, and want of interest in every thing connected with the vessel, which shewed that brandy had again reduced him to a state fast verging towards his former insane condition. The crew did their work during the day, and danced and sang at night; all sorts of mad pranks were resorted to for amusement; fortunately, all was carried on good naturedly for a time.

Amongst other matters which tended to keep up an excitement amongst the crew, was a jealousy existing between Jemmy and the captain of another brig lying in the bay. It is a custom in the West India trade for the oldest trader to wear a broad pennant, which was generally saluted by the other vessels with a few guns, when he arrived or departed from the bay. On our arrival the pennant was flying on board this other vessel, which was commanded by a Creole, (at least so said report, although he denied it,) and although an older trader than our master, he was not considered legitimately entitled to the privilege. A sensible man would never have noticed the matter, but rather treated it with contempt. Not so Jemmy, however, who made some remarks to the mate, who, in his turn, mentioned the subject to the crew; taunts and jeers passed between the respective crews on shore, and very little would at any time have caused a fight between them. Our mate one evening said, in the hearing of the men, that he would give a gallon of rum for the envied pennant, which was kept flying day and night by the brig. This was sufficient inducement, and I, as much interested in the matter as any other man on board, agreed with one of my shipmates to go and get it; we waited till the others had turned in, after midnight, we then got into the jolly-boat, and sculled quietly under the brig's counter, and got up by the main chains; the negro who had the watch was walking the opposite side of the deck, and watching an opportunity when he turned to walk forward, I got up the main rigging, secured the flag, and slipping down the topmast-backstay as he was again walking forward, got into the boat unseen and unheard.

In the morning great was our exultation and as great the mortification of the brig's crew. The circumstance was reported to her master, who threatened to search for his flag on board our vessel, while a pennant was seen that morning flying from our top-gallant masthead. Angry words passed between the masters on shore, and one or two fights between individuals of the two crews; much excitement and many bickerings ensued, which might and should have been checked by a little exercise of common sense by either master.

To enable the reader to understand the events which occurred on board our vessel, during our stay, it will be necessary to explain the custom of the trade as regards loading the cargoes of produce. The sugar and other articles are all collected at the various estates by small cutters and schooners, carrying from twelve to twenty hogsheads; at some places they are loaded at small jetties, at others, the hogsheads are carried to the droger singly, in a boat constructed on purpose, and called a Moses boat. When there is a strong trade wind, the drogers cannot get the produce loaded in consequence of the surf being too high to permit the Moses boat to land. They, therefore, take every opportunity of procuring sugar during favourable weather, and, in order that no time may be lost, it is the custom for the ship's crew to commence taking in sugar from the droger whenever she comes alongside the vessel, whether Sunday or week-day, day or night. These drogers are all commanded by white men, respectable and trustworthy, generally old mates of vessels; they are well paid, and looked on as a very respectable class; the crew

is always composed of negroes, and always numerous from the heavy nature of the work, the hogsheads weighing often one ton each. When the droger goes alongside to commence discharging, the greater part of her crew generally go on board to assist in heaving the sugars on board, which is done by the capstan, (or, at least, was done at the time I am writing of, now, the double winch is often used, and some vessels have regular cranes, which they set up on deck when taking in or discharging,) the negroes singing the whole time a variety of songs, and beating time with their feet. Many of the negroes are improvisatoires of no mean talent, and many a severe remark is passed while singing, upon both mate and master, if not favourites. On some of the beautifully still, calm, clear, evenings enjoyed in the tropics, when no sound is heard save the chirping of the cricket amongst the rigging, or the dull murmur of the distant surf, the sudden commencement of the negro song, on board some vessel in the bay, taking in sugar, would rouse the mind from its lethargy, and recall the wandering thoughts to the realities around.

STEAM FROM SINGAPORE TO SYDNEY.*

As it is very probable that steamers will ply between Singapore and Sydney, the following remarks may be useful to them. From Singapore to the eastern end of Java nothing need be said, it is about three days steaming. It would not be necessary or advisable to go into Sourabaya as the straits have little water and are not good for navigation; any mails for that place might be waiting at Port Pauka ready to be put on board. From here a course should be steered northward of all the islands, passing between Ombay and Pulo Canebing and calling at Timour Dilli for coals. I should recommend the north side of the islands, as there is smooth water, comparatively, in both monsoon, in comparison with the south side, where there is nearly a long south-west swell, and a beam sea is one of the worst possible for a steamer, at least so say those who have sailed them. Another thing I would remark is, that all the country vessels beating to windward, choose the north side of the islands on account of the smooth water and land winds, which they find there. I recommend Dilli for a coal depot, as it is easy of ingress or egress, at any time, is safe in either monsoon, has deep water close to the beach, and belongs to the Portuguese. These are its advantages over Coupang, which is open in the west monsoon.

From here a straight course for the west entrance of Torres' straits may be steered, and at Whale Island or Cape York, another coal depot might be placed, sheltered from both mousoons, and easy of access. From there the inner passage, in my opinion, is the best for the down trip, as the smooth water there would fully compensate for the few nights anchoring. I have named Dilli and Whale Island or Cape York as being the best places for coal depots, because, with proper precaution,

* See further on this subject in our last number, p. 40.

they could be entered day or night, and are protected from both monsoons, and have good anchorage, and vessels may lie close to the shore. The distances between the depots are good, that from Cape York to Sydney the longest, but in that part of the passage the water is likely to be smooth, and the islands abound in good wood. The distances might be more equalized by making Cape Flinders or Snapper Is!and the depot, but that would oblige the vessel to come up the inner passage on her return trip, which I do not think would be so quick, in the south-east monsoon, as the outer route. Another point in favour of Cape York is this,—a station there would be of infinite value to mariners; for, if wrecked in the straits, there would be a place of refuge close at hand, which there is not now, excepting Booby Island, where a little mouldy bread and damaged meat may fortunately be had. Port Essington is five or six days sail, in boats, from the west side of the straits, and is so little frequented by ships, that there is a very poor chance of getting from there, if late in the monsoon when wrecked. At Cape York every vessel would be seen that went through, and a wrecked crew soon forwarded to India. Port Essington would not make a good point for a coal depot, as that ought to be a place where a vessel could go in and out quickly and easily; now the settlement is nearly eighteen miles up the bay, which is too much for quick dispatch. Port Essington is well situated for trading with the Banda sea, and if natives were encouraged to settle, cotton, coffee, maize, and tobacco could be produced abundantly; but they are much mistaken in the Malay character, who suppose they would buy land, and bring provisions for a year to Port Essington, where they must raise everything, and where water, that necessary, and luxury, of the Orientals, is by no means plentiful; if they could merely get their rice and salt in their own island they would prefer it.

The distance from Singapore to Dilli is	. 1500 miles.
From Dilli to Cape York	. 1005
From Cape York to Sydney	. 1800—4305

This distance divided by 192, for a day's run, or eight knots an hour, which is the average rate allowed generally for steamers, will give	. 22½ days
A twelve hour's stoppage at Port Pauka, if the Java mails are taken	. 0½ "
Coaling at Dilli, two days, ditto Cape York, two days	. 4 "
Six nights anchoring in the inner passage (likely to be four only)	. 3 "
	30 days

The whole time being thirty days, most probably three less, as there would be much smooth water steaming.

M. M'KENZIE.

AN ACCOUNT OF THE FINE DUST WHICH OFTEN FALLS ON VESSELS IN THE ATLANTIC OCEAN.—By *Charles Darwin, Esq., F.R.S., F.G.S.*

MANY scattered accounts have appeared concerning the dust which has fallen in considerable quantities on vessels on the African side of the Atlantic Ocean. It has appeared to me desirable to collect these accounts, more especially since Professor Ehrenberg's remarkable discovery that the dust consists in considerable part of Infusoria and Phytolitharia. I have found fifteen distinct statements of dust having fallen; and several of these refer to a period of more than one day, and some to a considerably longer time. Other less distinct accounts have also appeared. At the end of this paper I will give the particular cases, and will here only refer to the more striking ones and make a few general remarks.

The phenomenon has been most frequently observed in the neighbourhood of the Cape Verd Archipelago. The most southern point at which dust is recorded to have fallen is noticed by Capt. Hayward (*a*), on whose vessel it fell whilst sailing from lat. 10° N. to $2^{\circ} 56'$ N.; the distance from the nearest of the Cape Verd Islands being between 450 and 850 miles. Respecting the northern limit, the water for a great distance on both sides of Cape Noon (in lat. $38^{\circ} 45'$) is discoloured, owing in part, according to Lieut. Arlett (*b*), to the quantities of falling dust. Hence the phenomenon has been observed over a space of at least 1600 miles of latitude. This dust has several times fallen on vessels when between 300 and 600 miles from the coast of Africa: it fell, in May 1840, on the *Princess Louise* (*c*) (in lat. $14^{\circ} 21'$ N. and lon. $35^{\circ} 24'$ W.) when 1030 miles from Cape Verd, the nearest point of the continent, and therefore half-way between Cayenne in South America and the dry country north of the Senegal in Africa.

On the 16th of January (1833), when the *Beagle* was ten miles off the N.W. end of St. Jago, some very fine dust was found adhering to the under side of the horizontal wind-vane at the mast-head; it appeared to have been filtered by the gauze from the air, as the ship lay inclined to the wind. The wind had been for twenty-four hours previously E.N.E., and hence, from the position of the ship, the dust probably came from the coast of Africa. The atmosphere was so hazy that the visible horizon was only one mile distant. During our stay of three weeks at St. Jago (to February 8th) the wind was N.E., as is always the case during this time of the year; the atmosphere was often hazy, and very fine dust was almost constantly falling, so that the astronomical instruments were roughened and a little injured. The dust collected on the *Beagle* was excessively fine-grained, and of a reddish brown colour; it does not effervesce with acids; it easily fuses under the blowpipe into a black or grey bead.

In 1838, from the 7th to the 10th of March, whilst Lieut. James, in H.M.S. *Spey* was sailing, at the distance of from 330 to 380 miles from the continent, between lat. $21^{\circ} 10'$ N., lon. $22^{\circ} 14'$ W., and lat. $17^{\circ} 43'$

N., lon. 25° 54' W., considerable quantities of dust fell on his vessel, four packets of which, together with a written communication, I owe to the kindness of Mr. Lyell. The dust which fell on the first day (or the 7th) was preceded by a thick haze, and it is coarser than that which fell on the succeeding days: it contains numerous irregular, transparent, variously coloured particles of stone about the $\frac{1}{1000}$ th of an inch square, with some few a little larger, and much fine matter. The fact of particles of this size having been brought at least 330 miles from the land is interesting, as bearing on the distribution of the sporules of cryptogamic plants and the ovules of Infusoria. The dust which fell on the three succeeding days resembles in appearance and in its action, under the blowpipe, that collected by myself off St. Jago, and is so excessively fine, that Lieut. James was obliged to collect it with a sponge moistened with fresh water. As the wind continued nearly in the same direction during the four above-mentioned days, and the distance from the land was only a little increased after the first day, it would appear probable that the coarser dust was raised by a squall with which the breezes on this coast so often begin blowing.

With respect to the direction of the wind during the falls of dust, in every instance where recorded, it has been between N.E. and S.E.; generally between N.E. and E. In the case, however, given by the Rev. W. Clarke (*d*), a hazy wind which had blown for some time from E. and S.E. first fell calm, and was succeeded for a few hours by a S.W. wind, and then returned strongly to the east; during this whole time dust fell. With respect to the time of year, the falls have always occurred in the months of January, February, March, and April; but in the case of the Princess Louise in 1840, as late as on the 9th of May. In the one year of 1839, it has chanced that dust has been recorded as having fallen in the Atlantic (as may be seen in the references) on the 14th and 15th of January, and on the 2nd, 4th, 9th, 10th, 11th, 12th, and 13th of February. I may add, that Baron Roussin (*e*), during his survey of the north-western African coast, found, that whilst the wind keeps parallel to the shore, the haze and dust extend seaward only a short distance; but when during the above four specified months the harmattan blows from the N.E. and E.N.E., accompanied by tornados, the dust is blown far out, and is raised on high, so that stars and all other objects within 30° of the horizon are hidden.

From the several recorded accounts (*f*) it appears that the quantity of dust which falls on vessels in the open Atlantic is considerable, and that the atmosphere is often rendered quite hazy; but nearer to the African coast the quantity is still more considerable. Vessels have several times run on shore owing to the haziness of the air; and Horsburgh (*g*) recommends all vessels, for this reason, to avoid the passage between the Cape Verd Archipelago and the main land. Roussin also, during his survey, was thus much impeded. Lieut. Arlett found the water so discoloured (*h*), that the track left by his ship was visible for a long time; and he attributes this in part to the fine sand blown from the deserts, "with which everything on board soon becomes perfectly caked."

Professor Ehrenberg* has examined the dust collected by Lieut. James and myself; and he finds that it is in considerable part composed of Infusoria, including no less than sixty-seven different forms. These consist of thirty-two species of siliceous-shielded *Polygastrica*; of thirty-four forms of *Phytolitharia*, or the siliceous tissues of plants; and of one *Polythalamia*. The little packet of dust collected by myself would not have filled a quarter of a tea-spoon, yet it contains seventeen forms. Professor Ehrenberg remarks, that as thirty-seven species are common to several of the packets, the dust collected by myself, and on four successive days by Lieut. James, must certainly have come from the same quarter; yet mine was brought by an E.N.E. wind, and Lieut. James's by a S.E. and E.S.E. wind. The Infusoria are all old known species, excepting one allied to a Hungarian fossil; and they are of freshwater origin, with the exception of two (*Grammatophora oceanica* and *Textilaria globulosa*), which are certainly marine. Professor Ehrenberg could not detect any of the soft parts of the Infusoria, as if they had been quickly dried up, and hence it would appear that they must have been caught up by the wind some time after having been dead. The greater number of the species are of wide or mundane distribution; four species are common to Senegambia and South America, and two are peculiar to the latter country: moreover it is a very singular fact, that out of the many forms known to Professor Ehrenberg as characteristic of Africa, and more especially of the Sahara and Senegambian regions, none were found in the dust. From these facts one might at first doubt whether the dust came from Africa; but considering that it has invariably fallen with the wind between N.E. and S.E., that is, directly from the coast of Africa; that the first commencement of the haze has been seen to come on with these winds; that coarser particles have first fallen; that the dust and hazy atmosphere is more common near the African coast than further in the Atlantic; and lastly, that the months during which it falls coincide with those when the harmattan blows from the Continent, and when it is known that clouds of dust and sand are raised by it, I think there can be no doubt that the dust which falls in the Atlantic does come from Africa. How to explain the enigma of the absence of characteristic African forms and of the presence of two species from South America, I will not pretend to conjecture. Finally I may remark, that the circumstance of such quantities of dust being periodically blown, year after year, over so immense an area in the Atlantic Ocean, is interesting, as showing by how apparently inefficient a cause a widely extended deposit may be in process of formation; and this deposit, it appears from the researches of Professor Ehrenberg, will in chief part consist of freshwater *Polygastrica* and *Phytolitharia*.

* These microscopic organized bodies have been described in the "Monatsberichten der Berlin Akad. der Wissens, Mai 1844; u. 27 Februar 1845." In the latter paper a full list of the names is given; the column marked St. Jago includes those selected by myself.

List of References.

(a) Nautical Magazine, 1839, p. 364. The dust fell from the 9th to the 13th of February, 1839, whilst sailing from (lat. 10° N., long. $29^{\circ} 59'$) to (lat. $2^{\circ} 56'$ N., long. $26^{\circ} 30'$ W.). The wind on the 9th was E.N.E., on the 10th, N.E.b.E., and on the three succeeding days, N.E.

(b) Geographical Journal, vol. vi. p. 296, "Survey of some of the Canary Islands and part of the coast of Africa, by Lieut. W. Arlett, R.N."

(c) Edinburgh New Phil. Journal, vol. xxxii. p. 134. The account is taken from Berghaus's Almanack of the dust which fell on the Princess Louise on Jan. 14th and 15th, 1839, between (lat. $24^{\circ} 20'$ N., long. $26^{\circ} 42'$ W.) and (lat. $23^{\circ} 05'$ N., and long. $28^{\circ} 18'$ W.); and, again, in 1840, from the 6th to the 9th of May whilst between (lat. $10^{\circ} 29'$ N., long. $32^{\circ} 19'$ W.) and (lat. $16^{\circ} 44'$ N., long. $36^{\circ} 27'$ W.). During the voyage of a vessel of the same name, in which Dr. Meyen was a passenger (Reise um Erde, Th. i. s. 54) on the 27th of October, 1820, the sails were observed to be stained by a powder, which Dr. Meyen considered to be a minute Cryptogamic plant. The date would lead me to believe that in this case the phenomenon was different from that of the dust described in this paper.

(d) Proceedings of the Geolog. Soc. vol. iv. p. 145. The dust described by the Rev. W. Clarke fell February 2nd to the 4th, 1839, when between (lat. $21^{\circ} 14'$ N., long. $25^{\circ} 6'$ W.), and nearly (lat. $12^{\circ} 36'$ N., long. $24^{\circ} 13'$ W.). The direction of the wind has been already given in the paper; as it also has been, when the dust was collected by Lieut. James and myself. Mr. Clarke has since written a communication on the subject for the "Tasmanian Journal," (vol. i. p. 321,) to which I am indebted for two references.

(e) Nautical Magazine, 1838, p. 824.

(f) Nautical Magazine, 1837, p. 291. Mr. Burnett, on February 12th to 15th, in sailing from (lat. $4^{\circ} 20'$ N., long. $23^{\circ} 20'$ W.) to (lat. 8° N., long. $27^{\circ} 20'$ W.), a distance of 300 miles, with the wind N.E., preceded by a S.E. squall which veered to E.S.E. and then to N.E., had the sail, rigging, and mast covered with red dust. The dust began to fall as soon as the wind became N.E.; the atmosphere was very hazy. The nearest land was 600 miles distant. The same phenomenon was observed by Mr. Burnett in April 1836.

Mr. Forbes gives an account (Sharon Turner's S. Hist. of the World p. 149.) of dust which fell on a ship when 600 miles from the coast, between Cape Verd and the river Gambia; the wind all the previous night had been N.E.

In the Edin. New Phil. Journal (vol. vii. p. 402) there is another account of dust which fell in considerable quantities on March 29th, 1821, in lat. $11^{\circ} 3'$ N., when 300 miles from the nearest part of Africa.

In Howard Malcolm's Travels (vol. ii. p. 200,) there is a similar account of dust which fell during several days in February on a ship north of the equator, when more than 1000 miles from the coast of Africa; the wind was N.E.

(g) Horsburgh's East Indian Directory, p. 11.

(h) In Tuckey's Narrative of the Congo Expedition (p. 10,) a discoloured sea and a hazy atmosphere are described on the 9th of April in lat. 22° N., and long. $19^{\circ} 9'$ W., when 32 leagues from the main land.

It may be worth here recording, that Sir A. Burnes (Travels in Cabool, p. 223) in describing Khoten, a region of Upper Asia, adds, "it is said that its productiveness depends upon clouds of red dust, which always fall or are blown in this part of Asia." But he thinks that the statement requires confirmation.

**EXTRACTS FROM THE REMARKS OF H.M.S NORTH STAR.—By
Capt. Sir E. Home, Bart.—From Botany Bay to Hobart Town.**

(Continued from page 17.)

THE *North Star* left Botany Bay on the 12th of May, and on the 27th anchored off Hobart Town. The wind was moderate, with fine weather, until the 14th, at night, the wind had blown from N. and N.N.E., shifting in that day to N.W., W.b.S., W., N.W., and W. again, blowing hard at W.S.W., W., and N.W., from 5 P.M. on that day until 4 P.M. on the 16th, the wind shifted round to S.W., it moderated, and increased again as the wind came to S.W.b.W. and W. On the 18th it got round to S.W.b.W., and W.b.S., and W.S.W., blowing as heavy as I had ever known before; it moderated on the afternoon of the 19th, the wind coming round from W.S.W. to S.b.W., returning to S.W., it again blew strong. At noon of the 20th, it was N.W., moderate and cloudy, and in the evening returning to W., and on to S.W., came on to blow hard with violent squalls and rain, which moderated to fine clear weather by noon of the 21st, the wind continuing at S.W. In the afternoon it was N.W., with light airs, and at midnight calm, and so continued during the 22nd. On the following day there was a breeze from the S.W. and S.; on the 24th it was calm again; on the 25th there was a breeze from the N.W., and on the 26th we arrived in port. The passage, as has been usual, being detained by strong winds against us, or when fair, so light as to be scarcely perceptible.

During this passage the barometer ranged between 30.40 and 29.38, and the thermometer between 72° (on leaving Sydney,) and 47°, decreasing for the first week after leaving that place about 3° every day, and then going on regularly between 63° and 47°, but it is impossible to give a clear idea of the action of the barometer or thermometer by words; a table ruled for the purpose is the only means by which such changes can be shown.

Marie Island is first seen, a large high island, passing which, at a few miles distant from the land, we come to Cape Pillar and Tasmans Island, a high flat-topped rocky island, steep to. Passing the entrance of Port Arthur, and rounding Cape Rowel, the next point, distant about eight miles from Tasmans Island, a course is shaped for the lighthouse called the Iron Pot, north-west of that cape. Cape Rowel is most remarkable for its basaltic columns; it is high and barren; the lighthouse stands on the extremity of a long low line of rocks, the light is about 60 feet above the surface of the water, and might be more brilliant. Having passed the Iron Pot, there is good anchorage in 10 or 15 fathoms all the way to Hobart Town, a distance of about twenty-four miles. The channel is quite clear, and when about eight miles from the light the town opens, standing in a valley at the foot of a high mountain called Mount Wellington. In winter the top of this height is covered with snow; there are near its top some remarkable basaltic rocks. The an-

chorage for large ships is off the battery in 10 fathoms water, the battery bearing W.b.S., the entrance to Double Bay, S.E.b.E.

The watering-place is in Sullivan's Cove which is near the market-place, a short distance from the ship, and the water runs from the wharf into the boat. Supplies and stores of all sorts are to be procured from the commissariat, but the latter are by no means equal to those supplied from the dockyard. This harbour is of great extent and security, and there is anchorage for large ships up the Derwent for more than five miles above the town. The tide runs at the rate of about two-and-a-half knots, the rise and fall about seven feet. Gales and strong breezes are of frequent occurrence in the winter season. The winds during our stay, from May 27th to June 8th, were from N., N.N.E., N.N.W., N.N.E., N.W., varying by the N.; the weather, for the greater part, fine with moderate and sometimes fresh breezes and squalls with rain; the barometer ranged between 29.52 and 29.94; the thermometer from 47° to 61°.

Hobart Town is well built and very pleasantly situated, the streets wide, and the shops good; the public offices are fine buildings, built of stone. The free population of this colony, in 1843, was, males, 21,972, females, 15,116: total, 37,088; convict population, males, 24,870, females, 3,508, and on board the *Anson*, hulk 547: total, 28,933. There were troops in the colony, 1,653, and to superintend the convicts, and police, 437; superintendents and overseers, 89 and 130, in all 222; district constables, 47; police magistrates, 17; mounted police, 20; on board the *Anson* there are 23 officers to superintend.

At a village called New Norfolk, about 22 miles from Hobart Town, there is a good hospital and lunatic asylum. In this hospital, in the course of the year, 10,621 patients were treated for various complaints, of which the greatest number were for diseases of the stomach and bowels: the next, abscesses and ulcers, and wounds and injuries; the next greatest number was for diseases of the eyes, and the smallest number for complaints of the liver and dropsy; of the 10,621 patients received, 243 had died. At New Town, a short distance from Hobart Town, are the Queen's Orphan Schools for the education of the children of the convicts, in which were 240 boys and 250 girls, they are extremely well-conducted, the ages of the children from 1 to 15.

The Magnetic Observatory adjoins the Botanical Garden, and is about two miles from the town, on the right bank of the Derwent. I here found the dip of the needle to be 70° 46'. The mean dip, by the Observatory instruments, for the month of May being 70° 34'.

Of the aborigines formerly inhabiting Van Diemen Island, none now remain upon it, the few which had been left having been brought together and transported to Flinders Island, in Bass Strait. It is not believed that the total number on the island ever succeeded 300; the number now remaining on Flinders is 43, and they are rather increasing lately. No cross breed between the native and European survive childhood.

In Van Diemen Land horses endure greater labour than in England, eighty miles being an ordinary journey in a day, and fifty miles a day

for several successive days. The sting of bees is by no means so violent as in England. Fruits and vegetables grow most luxuriantly, but they are not considered to have so much flavour as in England, and flowers have less fragrance. Care should be taken in visiting Mount Wellington as persons have frequently been lost upon it.

TEMPORARY RUDDER AND CIRCULAR STORMS.

Cowes, Dec. 26th, 1846.

Sir.—Having read your last number, and being a subscriber from 1832, I offer you a few remarks on steering ships with temporary rudders, in continuation of those of your correspondent, "Merchant Sailor," taken from my Journal when in command of the schooner Dash, from Algoa Bay, bound to London, in 1840.

"Aug. 2nd.—Commences a complete hurricane from W.N.W., hove to under close reefed sails, lat. $36^{\circ} 25'$ S., long. $18^{\circ} 41'$ E. At 10 P.M., were struck by a heavy sea, which broke the rudder off at the water's edge. At noon hoisted up the upper part of the main piece that was left, took off the upper pintle, and commenced making a rudder out of a spare topmast, with the fid hole for the tiller, and backed with plank to the form of an ordinary rudder. And as I did not see any chance of the weather abating so as to ship a rudder over the side, we made it just the size of the rudder trunk, put on the upper pintle, and rove a chain through the back of the topmast, which served for the main piece, crossing the chain and seizing it at the fore part, so that the chains led on to the opposite sides, up to tackles in the fore chains. The rudder then, with attention to keep a fair strain on both tackles, worked upon the crossing of the chain with ease, a piece of wood being bolted on the fore part of the rudder to keep it from working against the braces, at the lower parts. We were five days before the weather moderated sufficiently to ship it, during which time we steered very well on a wind with a spar towing astern, led to outriggers on each quarter, but having occasion to wear, it had not power enough though we had only the jib set. We then paid over the lee quarter 10 fathoms of the bower chain which had the desired effect. The next day attempted to wear again, and though we paid more chain over than before could not succeed, which was probably owing to the current, which was running strong round the edge of the Lagullas Bank, and made a heavy confused sea. Finding all attempts at wearing ineffectual, and seeing the vessel made considerable drift when head to wind, in attempting to stay her with the spar, towing astern, which soon brought the spar on the weather bow, we hauled the spar alongside, put a rope on the other end of it so as to sling it amid-ship, and led the hawser forward, gathered way by hoisting the jibs and veered away on the spar, hauled the jibs down, which brought her head to wind, and the leeway and drift brought the spar on the weather bow, and being slung at both ends would not now drag through the water, but hauled the vessels head round. The first trial after these trials the weather moderated, and we shipped the temporary rudder by lowering it down the rudder trunk, and securing it by the chains before described, with a small lashing at the head to keep it down in its place; and though it had not sufficient power to steer the vessel with all her after sail set, it still worked well and stayed ship with ease, and in five days we were enabled to reach Simons Bay in safety.

The chains, on unshipping the rudder, were much corroded by contact with the copper, and probably would not have lasted above 10 days, but which might have been remedied by their being well parcelled and tarred to keep

the copper from getting into contact, or probably a rope well parcelled and served, would answer for any short time as well. You will see there is nothing essentially new in this, but merely experience, and the fact of crossing the chains at the back of the stern-post, doing away with the necessity of a lower pintle. I am glad to see you so frequently enforce the necessity of masters of ships studying the law of storms; in my opinion, it ought to be made part of their examination. I have proved them constantly from that time (1840,) to the present, and have many instances in my journals where the knowledge of their course was turned to good account, both in preventing damage while crossing their path, and in taking advantage of the last quarter to make my passage, some of which I shall be happy to forward if you should hereafter have a spare corner not better filled.

I should be glad to see you take the subject up again, and, from time to time, give simple illustrations with diagrams, that all may understand, for sailors do not like much trouble in thinking, and with their old prejudices, I have found it very difficult, (at least, in the majority of instances), to get them to trouble themselves about it; but they must, 'ere long, come to it, as public opinion gains ground, and with our large Atlantic steamers, it becomes a matter of consequence, if, by keeping farther to the northward in steaming to America, through a succession of these rotatory storms, they may not only avoid the strength of the gale, but, in many instances, have the eastern side of the circle, where the wind is southerly, and the contrary on the return voyage.

I have not seen the log of the *Great Western* when she encountered that terrific storm, which placed that noble ship, with the lives of all on board, in imminent peril, but I have no doubt, that, with attention to this theory, and a careful noting the height of the barometer, which, in these storms, is, as it were, a clock falling gradually till the centre of the storm be passed, and then rising till its finish, that she might by a deviation for a steam-ship, comparatively small, have avoided the centre of the storm, and found in reality, though the longest way round, the shortest way home. Indeed, Mr. Editor, it seems to me awful to think of a noble steam-ship with crew and passengers wilfully steering towards the centre of that whirlwind which threatens to engulf the whole in one common ruin, and which they may avoid if they would but attend to the experience and labours of those who have toiled to obtain results of which they may receive the benefit. I hope your pen will not relax in its efforts till all Steam Companies insist on their Commanders being acquainted with this theory, as, sooner or later, the public themselves will take the matter up in their own defence, if it is not now attended to for them. If you think these remarks worthy please to insert them.

I remain, &c.

LATE MASTER OF THE AUDAX.

ABOLITION OF THE LIGHT DUES.

Memorial to Her Majesty's Government, proposed by the Association of Ship-masters for the Abolition of the Light Dues, submitted to the General Public Meeting of Shipowners, held at the London Tavern, Bishopsgate Street, on Thursday, Jan. 7, 1847.

Respectfully sheweth—That the shipping of this country is heavily taxed in various ways, and has been in a state of great depression for many years past.

That the railroads already completed have encroached considerably on the coasting trade of the country, and when those now forming, and rapidly extending to all parts of the coast, shall have been completed, a further reduction of the coasting trade is sure to take place; as, with increased traffic, the proprietors of railroads will be enabled to reduce their rates of carriage, which, of course, must take away more and more of this trade; hence a number of vessels will cease to find employment, and the consequences will be most injurious to the maritime community at the various seaports of the kingdom.

That your Memorialists entreat your Lordships' earnest and immediate consideration of this subject on grounds of the highest importance to the public welfare; for your Memorialists need scarcely remind your Lordships that the coasting trade has ever been a source from which a race of hardy seamen have been reared, either for commercial enterprise or for national defence.

That it appears to your Memorialists, that one of the most direct and immediate means of relief that could be afforded to the shipping interest, would be the Abolition of the Light Dues, in accordance with the recommendation of the Select Committee of the House of Commons appointed in the year 1845, to inquire into the state and management of lighthouses, &c.

That it appears by the report of the said Select Committee, that, in the year 1843, there was paid for light dues, by the coasting trade:—

In England,	£126,673	
In Scotland,	27,743	
In Ireland,	19,991	
Total amount paid by the coasting trade, ———		£174,407

During the same period, there was paid by the British oversea trade for light dues:—

In England,	£97,454	
In Scotland,	11,601	
In Ireland,	24,718	
		£133,773

There was also paid by the foreign vessels in the oversea trade, during the same period, for light dues:—

In England,	£33,648	
In Scotland,	4,496	
In Ireland,	10,580	
		£48,724
		<u>£356,904</u>

That your Memorialists respectfully represent to your Lordships, that the charges now levied on British shipping, for the professed purpose of maintaining the coast lights, are much greater than is really required for that object,—are partial, unjust, and oppressive in their operation,—and press with peculiar severity on the coasting trade, which, in many cases, pays four times more than its fair proportion of the expense necessary to maintain the lights.

That your Memorialists beg leave to represent their opinion, and in which opinion the Select Committee of the House of Commons of 1845 entirely concurred, that the light dues form a serious impediment to the freedom of commercial transit, inasmuch as if there is the smallest quantity of goods paying freight, the light dues are levied on the entire tonnage of the vessel; consequently, ships are sent in ballast rather than take a small quantity of cargo. This injury is not confined to the coasting trade, but extends to the

trade with Gibraltar, Spain, and other places on the Continent, in fact, to all the short foreign trades, as the evidence taken before the Select Committee of the House of Commons in 1845 clearly proves.

That your Memorialists likewise respectfully represent that the safety and facility of navigation is an object of *public* concern to a maritime country like Great Britain; the whole naval force of this country, and also that of foreign powers, deriving all the advantages from lighthouses and lightships, while the burden of their support falls solely on the commercial marine; and, therefore, the cost of maintaining lighthouses, floating-lights, buoys, and beacons, amounting to about £100,000 per annum, ought to be defrayed out of the *public* revenue, this principle being recognized and acted on by other great maritime nations, such as France and the United States of America.

That the Select Committee of the House of Commons aforesaid, having in the Session of 1845, after an elaborate investigation of the subject, recommended "That all the expense for erection and maintenance of lighthouses, floating-lights, buoys, and beacons, on the coasts of the United Kingdom, be henceforth defrayed out of the public revenue: and that as the Trinity House had incurred a debt under the authority of 6 and 7 Wm. IV. cap. 79, in purchasing the right of private individuals for their leases and possessions of lighthouses, the Government ought to take upon it that debt:"—

Your Memorialists therefore entreat your Lordships will be pleased to take the allegations herein set forth into your consideration, and sanction a measure to afford relief to the shipping interest, by giving effect to the recommendations of the Select Committee of the House of Commons in the year 1845, appointed to inquire into the state and management of lighthouses, &c.

And your petitioners will, as in duty bound, ever pray.

THE GREAT BRITAIN STEAM SHIP.

Mr. Brunel has addressed to the proprietors of this vessel a report, dated December 14th, of which the following is a brief analysis:—

The ship is at present comparatively little injured. The strains and damage sustained are entirely local, and not communicated to the whole hull, as would have been the case in a wooden vessel, under similar circumstances. All the injuries done to the Great Britain might be repaired if she could be got into dock.

To this object all attention ought to be turned, as the ship would scarce pay the expense of breaking up; and if she were brought into port exactly in her present condition, she would be worth from £40,000 to £60,000. It would require, at least, three months to complete the means of floating her, and in the interim it is necessary that she should be protected against the effects of the sea. To this end, Mr. Brunel proposes to erect—not a fixed breakwater, which has been already proved impracticable—but a mass of fagots, used as in the protection of sea banks in Holland. The strongest conviction of the cheapness and efficacy of this plan is expressed, though "few persons who have not seen the effect of a sea beating against fagots will share in it." The fagots are to be packed closely against the ship's exposed side for a considerable thickness and up to the level of the deck. The whole is to be bound into a compact mass by rods, driven through the fagots vertically, and is to be attached tightly to the ship by iron chains. About 10,000 fagots would be required.

So much for the means of protecting the vessel—next, as to the mode of subsequently raising her. Mr. Brunel is of opinion that this cannot be well effected by flotation. There are only 10 feet of water at ordinary high tide, and she has worked herself 5 or 6 feet into the rock and sand. The weight to be raised is 2000 tons, and, therefore, if the buoyancy of floating camels were resorted to, the apparatus would have to be of enormous magnitude.

It is recommended that, instead of hydrostatic, mechanical power should be employed, and that, when the ship is raised sufficiently to allow the repairing of her bottom, she should be rendered water-tight, and then be towed to Liverpool or Bristol.—*Civil Engineers' Journal*.

THE SHIP TRIMMER.

4, Somerset Street, Portman Square, Jan. 7th, 1847.

SIR.—I should esteem it a very great favor your allowing to be inserted in the *Nautical Magazine*, the accompanying paper descriptive of the newly proposed instrument, called "The Ship Trimmer," in order that through the medium of your excellent and valuable journal the nautical community may be acquainted with the means of ascertaining that, which I am quite sure you, as a naval officer, will consider of great moment, viz. a ship's trim at sea or in port.

I remain, &c.,

To the Editor, &c.

ADDERLY W. SLEIGH.

Placed parallel to keel of
Length of Load Water Line, feet.

Angle of Inclusion.	Feet.	Inches.	Angle of Inclusion.	Feet.	Inches.	Angle of Inclusion.	Feet.	Inches.
			° /			° /		
5			1 . 5			2 . 5		
10			1 . 10			2 . 10		
15			1 . 15			2 . 15		
20			1 . 20			2 . 20		
25			1 . 25			2 . 25		
30			1 . 30			2 . 30		
35			1 . 35			2 . 35		
40			1 . 40			2 . 40		
45			1 . 45			2 . 45		
50			1 . 50			2 . 50		
55			1 . 55			2 . 55		
1 . 0			2 . 0			3 . 0		

Example:

Angle of Inclusion, by the Stern.

2

(See Table)

Trim

by the Stern.

Few things are of more consequence at sea than to facilitate the speed of vessels, and as this can be effected by regulating, on scientific basis, the

draught of water, or *trim*, it is important that there should be at all times the means of ascertaining the slightest variation from *the trim* which experience has proved to be the best.

To obtain this desirable end an instrument called the *Ship Trimmer* has been constructed by order of the Lords Commissioners of the Admiralty, and it is now under trial on board H.M.S. *Thetis*.

The chief feature of this instrument is a heavy pendulum only nine inches long, acting as a compound lever, and giving all the required advantages of a pendulum five feet in length. Being intended for all classes of vessels it is so arranged, that those who use it require not the slightest mathematical knowledge. One of its novelties is the peculiar method of graduating the arc which gives the angle of inclination, each division being necessarily of a different size.

The *Ship Trimmer* being secured (according to given directions) by its suspending links, it shews the *angle of inclination*; then having the *length of water line*, the exact difference of draught, or *trim*, is found, and also the lateral inclination or rolling motion at the same time.

The length of keel will answer for all common purposes, as in a vessel of 115 feet, at an angle of one degree, an error of five feet in the length only makes a difference of one inch in *the trim*. Thus, under all ordinary circumstances, a most important object is gained, and with an accuracy at least equal to such other nautical contrivances as the log, the lead, &c.

Common Pendulums, of several feet in length, answer well on canals and rivers, but can only be used on board ship for occasional experiments. Tubes of liquid are frequently fitted for this purpose, and several of H.M. ships are supplied with *clinometers* invented by a talented Lieutenant of the Royal Navy, which register also the number of oscillations in any given time.

Nevertheless, there is no instrument in common use for adjusting the weights received on board, or ascertaining the trim of a ship at sea, and, therefore, seamen are quite incapable of regaining a lost *best trim* in regulating the balance so as to make a vessel as easy as she can be in bad weather.

It is stated that a *Ship Trimmer* can be made on board at the trifling cost of a few shillings, if this is the case we may expect to see it brought into general use.

LOSS OF HER MAJESTY'S STEAM SLOOP SPHYNX.

ABOUT five o'clock on Saturday morning, the 16th inst., the weather being very thick, this vessel going between eleven and twelve knots (she was going thirteen knots three hours previously, but had been eased), suddenly struck on a reef of hidden rocks off Compton Bay, near Freshwater, Isle of Wight; the midshipman of the watch directly called out, "Stop the engines," but the master, imagining the bump to be caused only by a shoal, gave the order, "Go on; she'll clear it." The engines were consequently not stopped, she therefore continued to clear ledge after ledge, or reef after reef, until she finally rested about 600 yards from the shore, leaving her nearly high and dry when the tide is out, but unapproachable by boats from the shore on account of the rocky nature of the coast. Soon after striking, the rudder became unshipped, the greater part of the keel was knocked away, and also a large portion of the stern, giving free ingress to the water from abaft. A sail was then drawn over the stern in the usual manner; the water was started from the tanks, the fore-yard got down on deck, and every other means adopted to lighten the ship. Guns of distress were constantly fired,

and also blue lights burnt, which, after a short interval, were answered from the Coast-Guard station, a little to the eastward, by a blue light and a rocket.

As the mist cleared away, the shore was observed crowded with people apparently anxious, but unable, to render assistance, from the continued heavy surf breaking towards the shore. A boat from the ship (the first cutter) was sent, in charge of Mr. Sullivan, a midshipman, to communicate with the shore, and with orders to send off a pilot, and then proceed to Portsmouth (about twenty-five miles) overland to the Admiral, which he did. When the pilot came on board he said a communication might be effected with the shore by about eleven o'clock, A. M. Soon after a boat was observed to seaward, labouring to approach the vessel, which, after great difficulty, she accomplished, and another pilot went on board, who observed that unless the guns, shot, and other heavy things were moved from the port to the starboard side, the vessel must fall over to port and fill. His suggestions were acted upon.

The starboard paddlebox-boat was then lowered, but swamped, owing to one of the "falls" being lowered before the other. It was, however, soon righted and baled out with ease, and a hawser which communicated with the vessel being made fast to the bow and also to the stern, the women, including Mrs. Cragg, the captain's wife, with the purser of the *Tyne*, and the surgeon of the vessel, were lowered into the boat, but unfortunately soon afterwards a piece of wood fell, and cut Mrs. Cragg's face and forehead so severely as to render her insensible for a short time. They were then landed; the bow hawser was given to the people ashore, and at a signal from those in the boat, the boat was hauled back to the ship by means of the hawser astern. As soon as she returned, a party of marines and a few blue jackets from the *Tyne* were landed in the same manner, and, in succession, those of the ship's company of the *Tyne*, who had taken a passage in the *Sphynx*, and also the sick of the ill-fated vessel, were safely landed.

A waggon, carrying a life-boat, was brought by the Coast-guard men to the beach, speedily launched, and put alongside the vessel, returning with some of the officers' luggage and the Marines' accoutrements. During this time large portions of the keel and stern were observed floating towards the shore.

The First Lieut., Fowell, was in the sick list at the time of the accident, and the Second Lieut., F. Marryatt, was officiating in his stead with great coolness.

A cutter belonging to the *Scourge*, under the charge of Mr. Harris, gunner of that vessel, while in the act of endeavouring to reach the *Sphynx*, was caught in the curl of the surf, instantly capsized, and Mr. Harris and six men were drowned. Two were with difficulty saved, mainly by the exertions of Mr. Wallis, master of the *Sphynx*, who was severely cut about the face, and had two of his ribs fractured, in this act of humanity. The body of Mr. Harris has been found, and sent to Haslar Hospital for interment.

The *Sphynx* is about 300 yards to the eastward of Brook Coast-guard station, and is forming herself a bed in the clayey soil of the beach, close to the face of the cliff. No hope remains of saving her. The steamers in the offing cannot approach her near enough to attempt to drag her off; and although the wind has been light ever since she grounded, yet, at high-water, when an attempt might only be made, the rollers set in most awfully.

Friday.—In consequence of the southerly wind which set in yesterday, the vessels in the offing were prevented by the heavy surf from communicating with the shore, and were obliged to seek shelter. The whole returned to Portsmouth last evening.

The rollers came into Freshwater Bay yesterday most awfully; one occa-

sioned a terrific surf at the top of high water; it struck the *Sphynx* under the counter and completely canted her round, driving her further up the beach. Her bow now fronts seaward. A number of seven and ten inch hawsers, fast to anchors, which had been laid out, and hove taut to her stern, snapped like rope yarns. Mr. Bellamy, the Sec. Master-attendant at Portsmouth, who went down to her on Saturday last, still remains at work with the greatest perseverance, and he is now employed with a number of seamen, shipwrights, and engineers, in assisting Com. Cragg in landing, when opportunities permit, the stores, heavy weights, the gear of the engines, and every thing moveable that can be got out of the vessel.

The *Porcupine* is coaling, and the spare anchors, hawsers, cables, and purchase gear, are to remain on board. The *Scourge*, also, is ordered to be held in readiness to proceed again when the weather is fair, for at this exposed position nothing can be done in bad weather. *Stag*, rev. v., had her two galleys knocked to pieces in the surf, but the men escaped on shore.

Four o'clock, P.M.—*Dragon* and *Scourge* have both got under way, and proceeded to the westward.

The *Sphynx* is a beautiful vessel, built only last year, of 1,056 tons, and 500-horse power, with engines upon the oscillating principle.

BOATS, Life Boats, and Buoys, for Seagoing Vessels and Steamers.—*Liverpool, Jan.*—On New Year's Day, the very first vessel that was intended and earnestly expected to be "Cleared Outwards Foreign," was stopped clearing *sine die*, to say nothing of others in the same predicament—precisely as we over and over again predicted. Doubtless, this great disappointment will be but one out of hundreds. Owing to profound ignorance of the new law—which took effect imperatively yesterday—the parties in question were unprepared with the legal certificate to testify that their vessel had the prescribed quota of boats; and boats, too, of the given dimensions. For some time past, a public notice has been posted at the Clearance-office, Long Room, that all parties intending to clear British registered ships must make a written request to the Tide-surveyor's office, to have their boats surveyed and legally "certified." A pre-requisite, however, is indispensable in too many instances,—the majority will have to provide one or more boats of proper dimensions, either built, or bought ready-built. Until this certificate is produced, however desirous the principal officers may be to give the utmost possible dispatch.—THEY CANNOT! No one can. The law is peremptory; and although mortifying detentions and individually ruinous delays may arise, still the legislature and most reflecting men agree that all such individual disadvantages will be more than counterbalanced by the general good secured.—*Liverpool Mail*.

ARCTIC EXPEDITION.—We understand that Sir John Ross has volunteered his services to proceed in search of the Arctic ships under the command of Sir John Franklin. No intelligence either from the Sandwich Islands or from Kamchatka has arrived, from which it is inferred that the ships are locked in the ice for this winter. By the most favourable calculations we were able to make, intelligence might have reached this country of them, *via* Panama, about October last, but we do not think that any well-founded apprehensions need be entertained yet of their safety from their non-appearance.

HUMANITY OF BRITISH SEAMEN.—Lately, whilst her Majesty's steam-sloop *Bloodhound* was lying at anchor in the Bosphorus, a Turkish *caïque*, or small skiff, laden with *pappucci*, or slippers, was observed from on board the steamer to have capsized off the Seraglio Point, and three men and a boy were seen buffeting with the current. Half a dozen British tars, as though with one accord, immediately plunged overboard to rescue these unfortunate beings from a watery grave. A stoker, of the name of Rowe, shewed himself to be the most expert of the party, being the first to reach the spot when he had the satisfaction of seizing two men by the hair, whom he contrived to keep afloat until he reached the steamer. The third man was also saved; but the boy, from his diminutive size, was lost sight of by the seamen in the water. Not so, however, by the seamen in the vessel. Capt. Phillips, seeing that there was not a moment to be lost, threw off his coat, instantly jumped overboard, and making direct for the urchin, reached him at the very moment he was sinking into a watery grave. This act of humanity was for several days the sole subject of conversation in the Turkish capital; but, strange to say, his highness the Sultan—by no means parsimonious of costly gifts for services of much less importance—did not mark his sense of the gallant act in the manner which it richly merited.—*Times*.

SHIPWRECKED FISHERMEN AND MARINERS' BENEVOLENT SOCIETY.—We learn from the report just issued of the Southampton branch of this excellent institution that the amount of donations and subscriptions for the past year was £106 6s., and the number of cases relieved were 144. This week ten poor fellows, wrecked in the Bay of Biscay, and brought home in the *Charles Napier*, were assisted by the society. The honorary secretary, W. H. Woodin, Esq., Shirley; Messrs Coster and Alveys, agents at the Quay; and Messrs. Maddison's Bank, will give every information and gladly receive subscriptions.

THE FRENCH NAVY.—*Loss of a French Frigate.*—Advices received from Mulgrave Island, dated August 3rd, announce the total loss of the French corvette *La Seine*, twenty guns, which took place on the night of the 4th of July, on a sunken reef of rocks, near Balade, on the coast of New Caledonia. The ship, it appears, on striking, heeled over on her larboard side and partly filled. Fortunately, the boats were preserved, by which the whole of the crew and officers, amounting in all to near 200 persons, were saved. Every exertion was subsequently used to save the vessel. Her guns and heavy ammunition were thrown overboard, and her masts cut away, with a view of floating her off, but all to no purpose; consequently she became a complete wreck.

SIR.—As your *Magazine* touches upon all matters useful to nautical men, perhaps some advantage may be gained from the following, which, I believe, is not generally known or practised.

It is usual to boil fish, potatoes, and other vegetables in salt or sea water, both on board and on shore, but sea water is equally good for boiling a fowl, a joint of mutton, rice, a fruit pudding, or any thing that has no farther to do with the water, than the simple act of being boiled in it, the water in which it is boiled not being received into the stomach. Many a gallon of fresh water may thus be saved on long voyages, as I well know from frequent experience.

I remain, &c.,

PEREGRINE PICKLE.

WRECKS OF BRITISH SHIPPING.

(Continued from page 44—*cs* crew saved, *cd* crew drowned.)

Vessels' Names.	Belong to.	Masters.	From.	To.	Where.	When.
Adventurer	61	Gray	Pr. Edw. I.	Liverpool	Magdalen	Dec. 5]
Apollo	Dundee	passed	dismasted	abandoned	39° N. 20° W.	Dec. 12
Arctusa	Nova Scotia		Liverpool	Halifax	58° N. 20° W.	Nov. 4
Cornelia	Glasgow	passed	abandoned	in	34° N. 50° W.	—
Empire	65	Gillies	Quebec	England	Matanes	Dec.
Eliza Walker	Glasgow		Bombay	China	China Sea	Sept. 12
Fairy	Whitby	Walker	abandoned	sinking	North Sea	Dec. 19 <i>cs</i>
Idea	reported by	Ruth	Quebec	Cork	49° 5' N. 14° W.	Dec. 28
Lanark	reported by	Ruth	Quebec	Cork	40° N. 25° W.	Dec. 21
Nile	70	Sunderland	boarded	abandoned	46° N. 24° W.	Dec. 7
Northampton	timber ship	long deser	ted seen by	Shiller	47° N. 31° W.	Dec. 5
Pavilion	Jersey		Paspablo	abandoned	45° N. 44° W.	Dec.
Recovery			England	Mirimiohl	Pr. Edw. I.	Dec. 1
Renewal			St. John	Newcastle	Brier I.	Nov. 23
Resource	75		London	Quebec	48° N. 14° W.	Dec. 26
Richmond Lass	Stockton		Quebec	abandoned	48° N. 14° W.	Dec. 28
Robert Burns			Bombay	London	45° N. 13° W.	Dec. 8
Royalist	Dartmouth	Hole			47.2' N. 8.3' W.	Dec.
Sirius			Dublin	Cork	Ballycotton	Jan 18 164
Siren	80	Sunderland	Hertch	Falmouth	abandoned	Dec. 24
Sunderland		Davidson			Sheringham, I.	Jan. 15 <i>cs</i>
Superb	Greenock	Lacey			Harris S.	Dec.
Syrian	Passed	abandoned	by the	Brocklyn	47° N. 44° W.	Dec. 20
Terrier		Davidson	Cienfuegos	London	Jardinillos	Oct. 26
Vancouver	85		London	St. John NB	40° 3' N. 69° W.	Dec. 14

PORT OF HAVRE TIDE SIGNALS.—The rise and fall of the tide is shewn by signal of balls at the lower and topmast heads and yardarms of a mast and yard placed for the purpose.

Immediately on the signal being made from the Tower Francois 1er, it is repeated from the station on the Heve.

A pendant *under* the ball at top-mast head will indicate 6 metres. A pendant *over* the ball at the top-mast head will indicate 7 metres.

Port yard-arm.	Lower mast-head.	Top mast-head.	Star-board yard-arm.	Rise of tide in ft. in.
—	—	—	1	10 6
1	—	—	1	11 2
1	—	—	2	11 10
2	—	—	2	12 6
—	1	—	—	13 1
—	1	—	1	13 9
1	1	—	1	14 5
1	1	—	2	15 1
2	1	—	2	15 9
—	—	1	—	16 5
—	—	1	1	17 1
1	—	1	1	17 9
1	—	1	2	18 4
2	—	1	2	19 0

NOTE.

The balls on the yard are run out (not hoisted), are made of canvass stretched on strong iron hoops, and when not required as signals *fold close to the mast head* by means of a cord passed through a block at the yard arm which hauls them into their right places, or returns them folded against the mast head.

A boy works this Semaphore, and its adoption will probably become general in the French Ports. Its system was proposed by M. Laventer.

NAUTICAL NOTICES.

SAILING INSTRUCTIONS as a Guide when Ships or Vessels are on the Coast of Oriza, or off the SANTAPILLAY ROCKS, with Notices of remarkable Land-marks denoting the true position of those Rocks.

1. Whereas a recent survey of the Santapillay Rocks, under the direction of Lieut. Fell, I.N., and a further inspection thereof by the Master Attendant, on the 6th inst., clearly prove that those Rocks comprise one of the most dangerous shoals in the Indian Seas, and as no well defined land-mark has hitherto been notified for the purpose of indicating their locality, and warning Commanders of Ships and Vessels of their near approach to those Rocks, it is therefore expedient to publish the following remarks for the guidance of all Mariners who may navigate the Coast of Oriza, and the Bay of Bengal.

2. The Santapillay Rocks are in

Latitude $17^{\circ} 59' 25''$ N.

Longitude $83^{\circ} 47' 37''$ E.

and are distant from the Coast between five and six miles. They are about ten feet under water, steep to on all sides, and their extent is not beyond 200 yards in length. When there is but little wind and a smooth sea, this shoal presents no indication by broken or discoloured water, as Lieut. Fell, when in search of it during very fine weather, brought the surveying brig *Kristna* to anchor within 100 yards of the Rocks before he could observe the slightest appearance of a shoal. He then proceeded in one of that vessel's boats over the Rocks, and found ten feet and a half on the shoalest part; on the eastern side seven and ten fathoms, and on the western limit $10\frac{1}{2}$ fathoms rocky bottom.

3. The Master-Attendant surveyed the Santapilly Rocks in the H. C.'s steam vessel *Hugh Lindsay*, on the 6th inst., during fine weather; and with a moderate breeze from S.W. and a ground swell, the breakers were clearly discerned from the mast-head at the distance of six or seven miles, bearing due S., and Santapillay Peak bearing W.b.N. in seven fathoms, off shore about two miles. The breakers were soon after seen from the deck; and at 11h. 45m. A.M., when the reef, which broke with considerable force, bore from S. 56° E. to S. 57° E. and Santapillay Peak was bearing N. 43° W., the *Hugh Lindsay* was anchored in nine fathoms and a half, coarse sand and shells, distant from the reef two miles; and from the coast three miles and a half—Latitude by an indifferent observation $18^{\circ} 1'$ N.

4. Two boats were sent, under Capt. Crawford, to examine the reef, and they carried regular soundings from the steamer of nine, and nine fathoms and a half, until within a quarter of a mile, and in less than 100 yards of the breakers, where they found ten and a quarter and ten fathoms and a half rocky bottom. The breakers were too high to admit of the boats crossing over the reef, but Capt. Crawford pulled round it, and gave as his opinion that the shoal, which lies N.N.W. and S.S.E., is in circumference about a quarter of a mile, with ten fathoms all round very close to the Rocks. From the *Hugh Lindsay* the breakers seemed to extend the length of 200 yards.

5. The inner channel is safe for ships and vessels of every class, as soundings of five fathoms within a mile of the coast, and nine and a-half fathoms within a quarter of a mile of the rocks, afford a clear space of nearly four miles in breadth.

6. In fair weather, and when the Peak of Santapillay is visible, that lofty and remarkable land-mark affords an infallible guide to the true position of the Santapillay rocks. This peak is at least 2,000 feet above the level of the

sea, and presents a striking contrast to all the hills in its vicinity. It bears N. 45° W. from the Rocks, and the base of the mountain is not more than seven or eight miles from the coast. In the event of cloudy weather, when the Peak may be obscured, there are two remarkable hillocks close to the beach, which the Master-Attendant has named the Great and Little Conara hills; and when the *Hugh Lindsay* had steamed to the S.W. about three miles beyond the position where she had anchored, those hills presented a remarkable change of form, having the appearance of a Saddle hill. The northernmost or Little Conara hill, is well situated for a light or obelisk, being not more than half a mile from the beach, and 150 feet above the level of the sea: it bore N. $\frac{1}{4}$ W., and the Santapillay reef was then plainly visible from the deck bearing E. $\frac{1}{4}$ N. distant four miles, and at the same time Santapillay Peak bore N. 29° W. in eight fathoms, and off shore about two miles.

7. But in thick weather, when no well defined land-mark is discernable, then it becomes absolutely necessary to approach the coast between Ganjam and Vizagapatam with great care and caution. Change of current, and the absence of all means, by night or day, of obtaining a single observation may, without strict and unremitting attention to soundings, place a ship or vessel in imminent peril close to, or upon the Santapillay Rocks, which should not be approached from the eastward, by day or night, under seventeen fathoms.

Master Attendant's Office, }
September 21st, 1846. }

(Signed) CHRIS. BIDEN,
Master-Attendant.

(True Copy)

JOHN J. FRANKLIN, *Secretary Marine Board.*

ISLAND OF SAMOA, SOUTH PACIFIC.—(From the *Polynesian*, August 22).—It is desirable that it should be extensively known that the harbour called Flagaloa, on the north-east side of the Upolu, affords but very unsafe anchorage. It was carefully surveyed and condemned by Commodore Wilkie, commanding the United States exploring squadron. If masters of vessels, with a knowledge of this fact, comply with the wishes of worthless foreigners, who contrive to get on board, to pilot them into that harbour, it will be at the risk of losing their insurance. Should anything of a disastrous nature happen, the masters of the said vessels will be held responsible.—John C. Williams U. S. Consul; Geo. Pritchard, H. B. M. Consul. *Apia Harbour, March, 1846.*

NOTICE TO MARINERS.—Rear-Admiral Davies, Commander-in-Chief at the Cape of Good Hope, has reported that he has caused two anchors of 30 cwt., and suitable cables, to be laid down as single anchor moorings, in Waterloo Bay, Fish River, with a view to decrease the damage and difficulty attending the communication with the shore, owing to the heavy surf which usually prevails upon the beach, and the rocky nature of the bottom snapping the cables of vessels waiting to discharge their cargoes.

Hydrographic-Office, Jan. 23rd, 1847.

FIXED LIGHT OF CEARA.—Notice has been received by Her Majesty's Government, that, on the first of the present month, a fixed light was established at Ceara, on the northern coast of Brazil.

The lighthouse stands on Point Mucuripe, on the eastern side of the Bay of Ceara, in latitude $3^{\circ} 41' 10''$ S, and longitude $38^{\circ} 35' 9''$ W., and being 37 feet above the level of the sea, may be seen at the distance of ten miles.

NO. 2.—VOL. XVI.

O

STATIONS OF HER MAJESTY'S SHIPS IN COMMISSION,

With the Years when Built, and the Dates of Commission of the Officers in Command.

Acheron, st.-v. 2 (1838) Lt.-Com. A. R. Dunlap, 1842, Woolwich—*Acorn*, 16 (1838) Com. J. E. Bingham, 1841, East Indies—*Actæon*, 26 (1831) Capt. G. Mansel, 1840, Coast of Africa—*Adder*, 1, st.-v. Mast-Com. J. Hammond, act. Pembroke—*Advice*, 1, st.-tug, Lieut.-Com. C. A. Petch, 1828, Pembroke—*Æolus*, depot-sh. Mast-Com. J. Thomas, 1826, part. serv.—*African*, st.-v. (1825) Mast-Com. J. King, (act.) Portsmouth—*Agin-court*, 72 (1817) Rear-Adm. Sir T. J. Cochrane, c.b., Kt., Capt. W. J. Hope Johnstone, 1823, China—*Alarm*, 26, Capt. G. G. Loch, 1841, North America and West Indies—*Alban*, 1 st.-v. (1826) Mast-Com. M. Bradshaw, 1842, part. serv.—*Albatross*, 16, Com. A. Farquhar, 1844, Portsmouth—*Albert*, st.-v. (1840), lent to Colonial Government at the Gambia—*Albion*, 90 (1842) Capt. N. Lockyer, c.b., 1815, Channel squadron—*Alecto*, st.-v. Com. V. A. Massingberd, 1842, S.E. Coast of America—*Alert*, 6 (1835) Com. W. Ellis, 1842, Coast of Africa—*Alligator*, 26 (1821) Hospital Ship, China—*Amazon*, 42, Capt. J. J. Stopford, 1841, Mediterranean—*America*, 50, Capt. Sir T. Maitland, c.b., Kt., 1837, Channel squadron—*Amphion*, Capt. W. J. Williams, 1841, Devonport—*Andromache*, store-sh. Mast-Com. T. Johnson, 1803, part. serv.—*Andromeda*, store-sh. Com. E. W. Gilbert, 1822, part. serv.—*Apollo*, 8, tr.-sh. (1805) Com. W. Radcliffe, 1830, Sheerness—*Ardent*, st.-v. Lieut.-Com. J. R. Baker, 1828, Mediterranean—*Asp*, st.-v. 1, Lieut.-Com. W. W. Oke, 1825, Portpatrick—*Astrea*, 16, st.-v. Master W. Yeames, 1810, Falmouth—*Athol*, 2, tr.-sh. Mast-Com. E. J. P. Pearn, 1827, Woolwich—*Avenger*, st.-v. Com. J. M. Potbury, 1844, Devonport—*Avon*, st.-v. Com. H. C. Otter, 1831, Woolwich.

Belleisle, 72, Capt. Kingcome, 1838, part. serv.—*Belvidera*, depot-sh. Capt. H. Layton, 1825, part. serv.—*Berkenhead*, st.-v. Capt. A. H. Ingram, 1841, part. serv.—*Bittern*, 16, Com. T. Hope, 1841, Coast of Africa—*Black Eagle*, st.-v. (1831) Mast-Com. S. B. Cook, act., 1831, Woolwich—*Blazer*, 3, st.-v. (1834) Com. H. E. Wingrove, 1846, Ireland—*Bloodhound*, st.-v. Lieut.-Com. R. Phillips, 1830, Mediterranean—*Bonetta*, 3 (1836) Com. T. S. Brock, 1842, Mediterranean—*Bramble*, 10 (1822) tender to *Rattlesnake*, East Indies—*Brilliant*, 22 (1814) Capt. Watson, c.b., 1842, Cape of Good Hope—*Bulldog*, st.-v. Com. G. E. Davis, 1842, Devonport.

Caledonia, 120 (1808) Rear-Adm. Sir J. Louis, Bart., Capt. H. Dixon, 1811, Devonport—*Caliope*, 26, Capt. E. Stanley, 1838, East Indies—*Calypso*, 20, Capt. H. J. Worth, 1840, Pacific—*Canopus*, 84 (1794) Capt. F. Moresby, c.b., 1814, Channel squadron—*Carysfort*, 26, Capt. G. H. Seymour, 1844, Pacific—*Castor*, 36 (1832) Capt. C. Graham, 1830, East Indies—*Ceylon*, 2 (1810) Rear-Adm. Sir L. Curvis, Bart., Lieut. H. T. N. Chesshyre, 1846, Flag Lieut. rec.-sh. Malta—*Charon*, st.-v. (1827) Sec.-Mast. E. C. Rutter, act. 1837, Dover—*Cherokee*, st.-v. Com. W. N. Fowell, 1839, Lakes of Canada—*Childers*, 16, Com. J. C. Pitman, 1842, East Indies—*Cleopatra*, 26 (1835) Capt. Christopher Wyvill, 1832, Cape of Good Hope—*Collingwood*, 80 (1841) Rear-Adm. Sir G. Seymour, a.c.n., Capt. R. Smart, k.n., 1827, Pacific—*Columbia*, st.-sur.-v. Lieut. Com. P. F. Shortland, 1842, North America—*Columbine*, 18, Com. C. C. Grey, 1842, East Indies—*Comet*, st.-v. (1822) Lieut.-Com. C. R. Johnson, 1840, part. serv.—*Comus*, 18 (1826) Com. E. C. F. D'Eyncourt, 1842, S.E. Coast of America—*Confiance*, 2, st.-v. (1827), Sec.-Mast. J. Jagoe, act. 1842, Devonport—*Constant*, 50 (1846) Capt. Sir B. Walker, 1838, Pacific—*Contest*, 12, Com. A. McMurdo, 1843, Coast of Africa—*Conway*, 26 (1832) Capt. W. Kelly, 1844, on passage home from the Cape—*Cormorant*, 6, st.-v. (1842) Com. G. T. Gor-

don, 1840, Pacific—*Crescent*, 42, rec-sh. (1810) Lieut-Com. Hemsworth, Rio de Janiero—*Crocodile*, rec-sh. Lieut-Com. S. R. Protheroe, 1826, Curk—*Cruizer*, 16 (1828) Com. E. Peirse, 1842, East Indies—*Cuckoo*, st-v. Lieut-Com. A. Parks, 1815, Sheerness—*Curacoa*, 24 (1809) Capt. W. Broughton, 1831, S.E. Coast of America—*Cygnel*, 10 (1840) Com. F. B. Montresor, 1843, Coast of Africa.

Dædalus, 16, Capt. McQuhæ, 1835, China—*Daphne*, 18 (1838) Capt. J. J. Onslow, 1834, Chatham—*Daring*, 12 (1844) Com. H. J. Matson, 1843, North America and West Indies—*Dasher*, st-v. Com. W. L. Sheringham, 1843, part. serv—*Dee*, st-v. 2 (1832) Mast-Com. T. Driver, 1809, part. serv—*Devastation*, st-v. Commodore Sir C. Hotham, Coast of Africa—*Dido*, 20, Capt. J. B. Maxwell, 1837, Cape of Good Hope—*Dolphin*, 3 (1836) Lieut-Com. W. S. Miller, 1841, S.E. Coast of America—*Doterel*, st-packet, Mast-Com. J. Grey, act. Holyhead—*Dover*, st-packet, Master E. Lyne, act. Dover—*Driver*, 6, st-v. (1840) Com. C. O. Hayes, East Indies.

Eagle, 50, Capt. G. B. Martin, c.b., 1828, S.E. Coast of America—*Electra*, 18, Com. W. H. Maitland, 1842, North America and West Indies—*Endymion*, 44, Capt. G. R. Lambert, 1825, North America and West Indies—*Érebus*, bomb-v. Capt. Sir J. Franklin, 1822, Arctic Expedition—*Epiegle*, 12 (1844) Com. T. P. Thompson, 1841, China—*Espoir*, 10 (1821) Com. G. S. Hand, 1841, Coast of Africa—*Eurydice*, 20 (1843) Capt. T. V. Anson, 1841, Cape of Good Hope—*Excellent* (1810) Capt. H. D. Chads, c.b., 1825, Portsmouth.

Fairy, y^t (1815) tender to *Victoria and Albert*, Woolwich—*Fanny*, tender to *St. Vincent*, Master G. Allen, act. Portsmouth—*Fantome*, 16 (1839) Com. T. P. Le H. Rjy, 1837, Mediterranean—*Favorite*, 18, Com. A. Murray, 1840, Coast of Africa—*Ferret*, 18, Com. G. Sprigg, 1844, Coast of Africa—*Firebrand*, st-v. Capt. J. Hope, c.b., 1838, S.E. Coast of America—*Firefly*, 2, st-sur-v. (1832) Capt. F. W. Beechey, 1827, Irish Channel—*Figard*, 42 (1819) Capt. J. A. Duntze, 1829, Pacific—*Flamer*, st-v (1831) Lieut-Com. G. Lavie, Com., Mediterranean—*Flying Fish*, 12 (1814) Com. P. H. Dyke, 1844, Coast of Africa—*Fox*, 42 (1829) Commodore Sir H. Blackwood, 1837, East Indies—*Frolic*, 16 (1842) Com. C. B. Hamilton, 1844, Pacific.

Geysler, st-v. Com. F. T. Brown, 1840, Woolwich—*Gladiator*, st-v. Capt. J. Robb, 1841, Channel squadron—*Grampus*, 50, Capt. H. B. Martin, c.b., 1828, Pacific—*Grappler*, st-v. Lieut-Com. T. H. Lysaght, 1841, Coast of Africa—*Grecian*, 16, Com. L. S. Tindal, 1831, S.E. Coast of America—*Griffon*, 6, Lieut-Com. J. P. Thurburn, 1811, S.E. Coast of America.

Haslequin, 16, Com. J. Moore, 1843, Mediterranean—*Harpy*, st-v. Lieut-Com. J. W. Tomlinson, 1826, S.E. Coast of America—*Hazard*, 18 (1837) Com. F. P. Egerton, 1844, East Indies—*Hecate*, 4, st-v. (1840) Com. J. West, 1841, Coast of Africa—*Hecla*, 4, st-v. (1839) Com. C. Starmer, 1842, Mediterranean—*Helena*, 16, Com. Sir C. Ricketts, Capt., Cape of Good Hope—*Herald*, 26, sur. Capt. H. Kellett, c.b., 1842, Pacific—*Hermes*, 2, st-v (1835) Lieut-Com. Carr, 1821, North America and West Indies—*Herveine*, 6, Com. C. Edmunds, 1841, Coast of Africa—*Hibernia*, 120 (1804) Vice-Adm. Sir W. Parker, Bart., o.c.z., Capt. Peter Richards, c.b., 1828, Channel squadron—*Hound*, 10, Com. G. H. Wood, 1846, Coast of Africa—*Hyacinth*, 18 (1829) Com. F. Scott 1841, North America and West Indies—*Hydra*, 4 (1835) Com. A. Morrell, 1823, Coast of Africa.

Imaum, rec-sh. Jamaica—*Inconstant*, 36 (1836) Capt. C. H. Freemantle, 1825, Mediterranean—*Inflexible*, st-v (1844) Com. J. C. Hoseason, East Indies—*Iris*, 26 (1840) Capt. G. R. Munday, 1837, East Indies.

Jackal, st-v (1845) Lieut-Com. G. Western, 1837, Channel squadron—*Jasper*, st-v. Mast-Com. E. Rose, 1823, Pembroke—*Juno*, 26, Capt. P. I. Blake, 1841, Pacific.

Kingfisher, 12, Com. F. W. Horton, 1846, Coast of Africa.

Lark, 4, sur-v (1830) Lieut. Com. G. B. Lawrence, (1843) North America and West Indies—*Larne*, 18 (1829) Com. J. W. Brisbane, 1837, Coast of Africa—*Lightning*, 2, st-v (1823) Mast-Com. Petley, 1844, Woolwich—*Lily*, 16 (1837) Com. C. J. F. Newton, 1831, Coast of Africa—*Lizard*, st-v. Lieut. Com. H. M. Tylden, 1836, S.E. Coast of America—*Loonst*, 3, st-v (1840) Lieut. Com. E. R. Power, 1839, Mediterranean—*Lucifer*, st-sur-v (1825) Com. G. A. Frazer, 1841, Woolwich.

Madagascar, 44, Mast-Com. H. D. Burney, 1814, Ireland—*Mastiff*, sur-v. Com. A. B. Becher, 1841, Woolwich—*Medea*, st-v. Com. G. E. W. Hammond, 1843, Woolwich—*Medina*, 2, st-v (1840) Mast Com, W. Smithett, act., Liverpool—*Medusa*, 2, st-v (1839) Lieut. Com. J. F. Raymond, 1828, Liverpool—*Melampus*, 42, Capt. J. N. Campbell, c. s. 1827, S. E. Coast of America—*Mercury*, tender, Sec-Mast. J. Scarlett, Portsmouth—*Meslin*, 2, st-v (1839) Lieut. Com. E. Keane, 1815, Liverpool—*Meteor*, 2, st-v (1824) Lieut. Com. G. Butler, 1811, Mediterranean—*Minden*, 20, store-sh. Mast-Com. J. Mitchell, 1827, China—*Minoas*, st-v. Lieut. Com. J. Harper, act. 1845, Lake Erie—*Modeste*, 18 (1837) Com. T. V. Watkins, 1837, Pacific—*Mohawk*, Lieut. Com. John Tyssen, 1832, Lake Huron—*Mutine*, 12, Com. R. Tryon, 1841, Devonport—*Myrmidon*, st-v. Rear-Adm. Sir H. Pigot, Lieut. Com. E. F. Roberts, 1841, Cork.

Naiad, store-sh. Mast Com. W. L. Browne, 1831, Portsmouth—*Nautilus*, 10 (1830) Lieut. Com. W. T. Rivers, 1841, Channel squadron.—*Nereus*, store-dépôt (1841) Mast Com. F. W. Bateman, 1837, Valparaiso—*Netley*, 8, tender to *Caledonia*, Devonport—*Nimrod*, 18, Com. J. R. Dacres, 1841, Coast of Africa.

Ocean, 80 (1805) Vice-Adm. Sir E. D. King, k. c. h., Capt-Sup. D. Price, 1815, Sheerness—*Onyx*, st-v. Lieut. Com. R. Mudge, 1815, Dover—*Otter*, st-sur-v. Lieut. Com. E. Wyld, 1814, Holyhead.

Pandora, 6, Lieut. Com. J. Wood, (a) 1841, Pacific—*Pantaloon*, 10 (1831) Com. H. J. Douglas, 1845, act. Coast of Africa—*Penelope*, st-v. Capt. H. W. Giffard, 1841, Coast of Africa—*Perseus*, rec-sh (1812) Lieut. Com. Greet, 1840, off the Tower—*Persian*, 16 (1839) Com. H. Coryton, 1841, North America and West Indies—*Phœnix*, st-v. Com. J. S. A. Dennis, 1840, Mediterranean—*Pickle*, 2 (1827) Lieut. Com. H. Bernard, 1841, North America and West Indies—*Pigmy*, 1, st-v (1827) Lieut. Com. A. Darby, 1828, Pembroke—*Pike*, 1, st-v. Lieut. Com. A. Boyter, 1815, Portpatrick—*Pilot*, 16 (1838) Com. G. K. Wilson, 1840, East Indies—*Pluto*, 2 (1831) Lieut. Com. F. Lowe, 1837, part. serv.—*Poictiers*, 72 (1809) Capt-Sup. Sir T. Bourchier, k. c. s. 1827, Chatham—*Polyphemus*, 1, st-v (1839) Com. McCleverty, 1842, Lisbon—*Porcupine*, st-v. Capt. F. Bullock, 1838, River Thames—*President*, 50, Rear-Adm. Dacres, Capt. W. P. Stanley, 1838, Cape of Good Hope—*Princess Alice*, Mast-Com. L. Smithett, act. Dover—*Prometheus*, st-sloop (1839) Com. J. Hay, 1841, Coast of Africa—*Prospero*, 1, st-v (1829) Sec-Mast. P. Rundle, act., steam-packet, Pembroke.

Queen, 110 (1839) Adm. Sir J. West, Capt. Sir H. Leeke, k. h., 1826, Devonport.

Racehorse, 18 (1830) Com. E. S. Southeby, 1841, East Indies—*Racer*, 16 (1833) Com. A. Reed, 1837, S. E. Coast of America—*Raleigh*, 50 (1845) Capt. Sir T. Herbert, 1822, S. E. coast of America—*Ranger*, 6, Com. J. Anderson, 1841, coast of Africa—*Rapid*, 10, Com. Gallwey, 1841, coast of Africa—*Rattler*, 6, st-v. Com. R. Moorman, 1845, Devonport—*Rattlesnake*, 2, Capt. O. Stanley, 1844, Cape of Good Hope—*Recruit*, 12, Com. A. Siade, 1841, Devonport—*Redwing*, st-v. (1834) Com. Thos. Bevis, 1829, Liverpool—*Resistance*, (1805) tr. sh. Com. G. Lowe, 1840, Mediterranean—*Rhadamanthus*, 2, st. (1832) Mast-Com. J. Avlen, 1812, part. service—*Ringdove*, 16, Com. W. J. C. Clifford, 1842, China—*Rodney*, 92 (1833) Capt. E. Collier, c. s. 1844, Channel

squadron—*Rolla*, 10, Com. H. M. Ellicombe, 1841, coast of Africa—*Rosamond*, st-v. Com. J. Foote, 1845, Woolwich—*Royalist*, Lieut-Com. D. McD. Gordon, (act.) 1845, East Indies—*Royal Sovereign*, yt. (1804) Capt Sup. G. T. Falcon, 1813, Pembroke.

St. Vincent, 120 (1813) Adm. Sir C. Ogle. Bart., Capt. A. Milne, 1839 Portsmouth—*Salamander*, 4, st-v. (1832) Pacific—*Samarang*, 26 (1832) Capt. Sir E. Belcher, c.b. 1841, Chatnam—*Sampson* st-frigate, Capt. T. Henderson, 1840, Pacific—*Satellite*, 18 (1836) Com. Rowley, 1842, S. E. coast of America—*Scourge*, st-sl. Com. J. C. Coffin, 1842, Portsmouth—*Scout*, 18, Com. W. Loring, 1841, East Indies—*Seaflower*, 6, ct. (1830) Com. H. Dumaresq, 1842, Portsmouth—*Sealark*, 18 (1843) Com. T. L. Gooch, 1842, coast of Africa—*Shearwater*, 2, st-v. (1826) C.m. C. G. Robinson, 1838, surveying coast of Scotland—*Sidon*, st-frigate, Capt. W. H. Henderson, 1838, Portsmouth—*Siren*, 16, Com. T. Chaloner, 1845, Mediterranean—*Snake*, 16, Com. T. B. Brown, 1841, Cape of Good Hope—*Spartan*, 26, Capt. T. M. C. Symonds, 1841, Mediterranean—*Sphinx*, st-v. Com. J. B. Cragg, 1842, wrecked on the Isle of Wight—*Spider*, 6 (1835), Lt-Com. R. E. Pym, 1815, S. E. coast of America—*Spiteful*, st-v. 6 (1842) Com. Sir W. Hoote, 1843, China—*Spitfire*, st-v. Lt. Com. J. A. Macdonald, 1827, Mediterranean—*Sprightly*, 1, st-v. (1823) Mast-Com. J. P. Moon (act.) Holyhead—*Spy*, 3 (1841) Lt-Com. S. O. Wooldridge, 1837, Pacific—*Star*, 10 (1835) Com. C. L. Hockin, 1846, coast of Africa—*Stromboli*, 6, (1839) Com. Fisher, 1841, parv. service—*Styr*, 6, st-v. (1841) Com. H. Chads, 1835, coast of Africa—*Superb*, 84 (1835) Capt. A. L. Curry, 1821, Channel Squadron.

Talbot, 26 (1824) Capt. Sir T. R. T. Thompson, 1837, Pacific—*Terrible*, st-v. Capt. W. Ramsay, 1838, Sheerness—*Terror*, 7, Capt. F. R. M. Crozier, 1841, Arctic Expedition—*Thetis*, 36, Capt. H. J. Codrington, c.b. 1836, Portsmouth—*Thunder*, 6, surv-ves. (1829) Capt. E. Barnett, 1816, North America and West Indies—*Thunderbolt*, 6 (1842) st-v. Com. A. Boyle, 1842, Cape of Good Hope—*Torch*, st-v. Lt-Com. G. Morris, 1823, part. service—*Tortoise*, 12, guard-ship, Capt. F. Hutton, 1844, Ascension—*Trafalgar*, 120 (1841) Capt. J. N. Nutt, 1842, Channel Squadron—*Trident*, st-v. Lt-Com. G. G. Rigge, 1838, Mediterranean—*Tyne*, 26 (1826) Capt. W. N. Glascock, 1833, Devonport—*Urgent*, 2, st v. Lt-Com. A. S. Symes, 1816, Liverpool.

Vanguard, 80 (1886) Capt. G. W. Willea, 1814, Channel Squadron—*Vengeance*, st.f. Capt. S. Lushington, 1829, Mediterranean—*Vernon*, 50 (1830) Rear Adm. Inglefield, c.b., Capt. J. C. Fitzgerald, 1841, S.E. coast of America—*Festal*, 26, (1833) Capt. C. Talbot, 1830, China—*Vesuvius*, 6, st-v. 1840, Com. O. Callaghan, 1841, N. America and West Indies—*Victoria* and *Albert*, yt. (1840) Capt. Lord A. Fitzclarence, c.m. 1821, Portsmouth—*Victory*, 104, (1765) Rear Adm. H. Parker, c.b. Capt. J. Pasco, 1811, Portsmouth—*Vindictive*, 50 (1813) Vice Adm. Sir F. Austen, Capt. M. Seymour, 1826, N. America and W. Indies—*Viper*, 6; Lieut.-Com. E. G. Hore, 1846, N. America and West Indies—*Virago*, 6, st-v. (1843) Com. J. Lunn, 1840, Mediterranean—*Volcano* 2, st-v. (1836) Lieut.-Com. J. H. Crang, 1840, Mediterranean—*Vulture*, st.-v. Capt. J. M'Dougall, b, 1836, China.

Wanderer, 16, Com. P. H. Somerville, 1842, coast of Africa—*Waterwitch* 10 (1832) T. F. Birch, 1840, coast of Africa—*Widgeon*, 1, st.v. Lieut-Com. T. S. Scriven, 1822, Dover—*Wildfire*, 1, st.v. Sec. Mast. G. Brookman, Sheerness—*William and Mary*, yt. (1807) Capt. Sir J. J. H. Bremer, kcb. and kch, 1841, Woolwich—*Wolf*, 18 (1826) Com. J. A. Gordon, 1842, China—*Wolverine*, 16 (1836) Lt-Com. Hay, (act.) China—*Woodlark*, tender to *Mus-tiff*, Woolwich.

Young Hebe, 1845, East Indies—*Zephyr*, 1, st.v. (1827) Lieut-Com. C. P. Ladd, 1815, Holyhead.

HER MAJESTY'S PACKET BRIGS AT FALMOUTH.

Crane, Lt. Com. T. A. Lewis—*Express*, Lt. Com. T. James—*Penguin*, Lt. Com. W. Swainson—*Peterel*, Lt. Com. T. Creser—*Seagull*, Lt. Com. H. P. Dicken—*Swift*, Lt. Com. J. Douglas.

LOSS OF THE SIRIUS.—This ill-fated vessel was the first that ever crossed the Atlantic, she was then commanded by Lieut. Roberts, who was lost in the *President*. It appears that the *Sirius* arrived off Cork harbour from Dublin, on the morning of Saturday, Jan. 16th, but in consequence of a dense fog, she struck on a reef of rocks in Ballycotton Bay; Captain Moffat immediately backed the ship off the reef, but it was evident she was in a sinking state, she was again turned towards the land, and very soon after struck on a ledge called Smith rocks, when her destruction was apparent. The total loss of the vessel being thus inevitable, the attention of all on board was directed to the preservation of the crew and passengers, and, amidst the confusion and alarm that prevailed, the life-boat, which is usually carried over the paddle-box, was attached to the davits and lowered, though unfortunately on the wrong side of the ship. This boat, we understand, was not equal to accommodate more than eight, but, immediately she was launched, twenty crowded into her, principally deck passengers, and before she was clear of the steamer, melancholy to relate, she was swamped, and all her crew met a watery grave, save Capt. Archy Cameron, of the *Prince*, river steamer, who was a passenger from Dublin in the vessel. Retaining his presence of mind at such an awful and trying moment, he managed to keep himself afloat, and grasped a rope, by means of which he was hauled on board.

Meanwhile, the steamer continued to thump heavily on the rock, while the screams of alarm from the affrighted passengers, and the heavy surf breaking on her sides and on the deck, rendered the scene one of awful danger and intense anxiety. Soon after the Coast-guard boat, from Ballycotton station, under the command of Mr. Coghlan, chief officer, came alongside, and the ship's boats having by this time been also launched, the few remaining passengers also got into them, and safely landed, though with the loss of every portion of their luggage, &c. The extraordinary exertions of Capt. Cameron, of the *Prince*, (who was so providentially saved,) in superintending and assisting the landing of the passengers, have been described to us as beyond all praise. We regret to state that the country people plundered the ship and passengers, who arrived in town with barely the clothes on their backs. The number of crew and passengers on board the *Sirius* was, as near as can be ascertained, about ninety, seventy-one of whom have been saved. She had a very large and valuable cargo from Glasgow and Dublin, principally bale goods, groceries, musical instruments, books, furniture, packages, &c., and among them, it is said, five cases of theatrical wardrobes, worth a large sum, belonging to the celebrated comedian, Mr. Wild, of the Olympic Theatre, London. It is understood that the vessel is insured, though whether to her full value is not known; but it is thought none of her cargo is so protected, and that it will be a complete loss.

Ballycotton, Jan. 18.—This morning's tide literally smashed the *Sirius* into small pieces, and not a vestige of her framework, hull, rigging, or spars, now remains together. The only object discernible on the rock where she went to pieces, is the boiler and part of the engine, which has as yet resisted the lashing of the waves.

Under the Act 7 & 8 Victoria, cap. 112, entitled the "Merchant Seamen's Act," (which received the Royal Assent, 5th Sept. 1844; the following Regulations for the supply of Medicines, &c., to Merchant Vessels, came into operation on and after 1st January, 1845.

"§ 18 That every ship navigating between the United Kingdom and any place out of the same, shall have and keep constantly on board, a sufficient supply of medicines and medicaments suitable to accidents and diseases arising on sea voyages, in accordance with the scale which shall from time to time be issued by the Commissioners for executing the office of Lord High Admiral, and be published in the London Gazette; and every ship (except those bound to European ports, or to ports in the Mediterranean Sea) shall also have on board a sufficient quantity of lime or lemon juice, sugar, and vinegar, to be served out to the crew, whenever they shall have been consuming salt provisions for ten days, the lime or lemon juice and sugar daily, half an ounce each per day, and the vinegar weekly, at the rate of half a pint per week to each person, so long as the consumption of salt provisions be continued; and in case any default be made in providing and keeping such medicines, medicaments, and lemon or lime juice, sugar, and vinegar, the owner of the ship shall incur a penalty of twenty pounds for each and every default; and in case of default of serving out such lime or lemon juice, sugar, or vinegar as aforesaid, the master shall incur a penalty of five pounds for every default: and in case the master or any seaman shall receive any hurt or injury in the service of the ship, the expense of providing the necessary surgical and medical advice, with attendance and medicines and for his subsistence, until he shall have been cured, or shall have been brought back to some port of the United Kingdom, shall, together with the costs of his conveyance to the United Kingdom, be defrayed by the owner of the ship, without any deduction whatever on that account from the wages of such master or seaman; and, if paid by any officer or other person acting on behalf of Her Majesty, the amount, together with full costs of suit, shall be recovered as a debt due to Her Majesty: and every ship having 100 persons or upwards on board, and also every ship the voyage of which shall be deemed under the provisions of the Act passed in the sixth year of the reign of her present Majesty, intituled 'An Act for regulating the carriage of passengers in Merchant Vessels, to exceed 12 weeks, having fifty persons or upwards on board,' shall have on board, as one of her complement, some person duly authorized by law to practice in this kingdom as a physician, surgeon, or apothecary; and in default the owner shall incur a penalty not exceeding the sum of one hundred pounds."

[§ 62 Provides for the recovery of penalties under the Act, and application of the same in part to the benefit of the Seaman's Hospital Society]

SCALE OF MEDICINES, &c.,
According to Act of Parliament.

Quantity for 10 men.		No. in Chest.	Quantity for 10 men.		No. in Chest.
1 lb.	Castor Oil	34	4 oz.	Spirit of Hartshorn	17
4 lbs.	Epsom Salts	9	4 oz.	Paregoric Elixer	23
4 oz.	Powder of Jalap	2	1 oz.	Essence of Peppermint	18
4 oz.	Powder of Rhubarb	4	8 oz.	Alum	54
2 oz.	Powder of Ginger	65	4 oz.	Bluestone	37
8 oz.	Carbonate of Soda	46	4 drms.	Quinine	45
8 oz.	Tartaric Acid	47	4 oz.	Calomel	3
6 oz.	Senna Leaves	61	2 oz.	Dover's Powder	11
8 oz.	Sulphur	6	1 lb.	Mustard	62
8 oz.	Cream of Tartar	5	8 oz.	Mercurial Ointment	33
1 lb.	Nitre	10	1 bottle	Bullin's Blistering Fluid	66
4 oz.	Laudanum	22	(Instead of Blister Plaster.)		
8 oz.	Tincture of Rhubarb	19	2 yards	Adhesive Plaster	36
8 oz.	Balsam of Capivi	28	4 oz.	Lint	67
8 oz.	Opodeldoc	29	8 oz.	Simple Cerate	34
			8 oz.	Basilican Ointment	31

PILLS:—	Quantity for 10 men.	No. in Chest.	Quantity for 10 men.	No. in Chest.
4 dozen Purgative (Pil. Col. C. Ed. Phar.)	—	—	2 dozen Emetic, (each to contain 15 grains of Ipecacuanha, and 2 grains of Tartrate of Antimony)	64
4 dozen Blue Pills	—	—	2 dozen Sodorific, (each to contain 10 grains of Nitre, 10 grains of Cream of Tartar, and 5 grains of Dover's Powder)	— 14
2 dozen Opium Pills (Phar. Edin.)	—	—	2 dozen Injection, (each to contain 30 grains of the Acetate of Zinc)	13
POWDERS:—				
2 dozen Purgative, (each to contain 1 drachm of Compound Powder of Jalap, and 2 grains of Calomel)	—	—	One set of Scales and Weights—1 marble Mortar and Pestle—1 Tile—1 Graduated Measure—1 Funnel—1 small Pewter Cup—2 Pewter Tea-spoons—1 Spatula—1 pair Scissors—1 Syringe—2 Lancets—6 Bandages of different sizes—6 yards of Calico—a paper of Needles, Pins, and Thread.	

The Pills and Powders are to be carefully put up in tin or leaden boxes, and properly labelled.

The above are the quantities of medicines to be supplied to ten men, and are to be increased proportionally, for any additional number of men borne

By command of their Lordships,

ADMIRALTY, Dec. 16, 1844.

SYDNEY HERBERT.

DOSES OF MEDICINE

ADAPTED TO THE DIFFERENT PERIODS OF LIFE.

Suppose one drachm of the medicine to be a sufficient dose for an adult, (that is, for a person of 21 to 60 years of age); then the other ages will require as below.

Under 20 years,	will require only $\frac{2}{3}$ or 2 scruples.
- 14	· · · · · $\frac{1}{2}$ - $\frac{1}{2}$ a drachm.
- 7	· · · · · $\frac{1}{3}$ - 1 scruple.
- 4	· · · · · $\frac{1}{4}$ - 15 grains.
- 3	· · · · · $\frac{1}{6}$ - 10 -
- 2	· · · · · $\frac{1}{8}$ - 8 -
- 1	· · · · · $\frac{1}{12}$ - 5 -
- 3 months	· · · · · $\frac{1}{15}$ - 4 -

Above 65 years, the dose diminishes in a similar way. Women, also, will generally require rather smaller doses than those directed to be administered to men.

NEW BOOKS.

A NARRATIVE OF THE RECOVERY OF H.M.S. GORGON. *Charles Hotham, Esq., Captain, stranded in the Bay of Monte Video, May 10th, 1844. By Astley Cooper Key, Com., R.N., late Lieutenant of H.M.S. Gorgon. Smith and Elder, London, 1847.*

We congratulate the naval service on the appearance of this work, dedicated to its officers, who well know the importance of those resources by which the great achievement it relates was effected. The disaster which occurred to the *Gorgon* is well known, but the means by which she was recovered to the country, and the ingenious devices, their application, and that genuine seamanship by which it was effected are not so. We are glad to find them recorded by an officer of the vessel, who, with a becoming modesty, has ably executed the task which he undertook. We shall not attempt to compress into this notice any account of these proceedings, being satisfied that the work before us is a *service* book, one which will be read and discussed by every officer to whom it is dedicated. We particularly commend it to the junior branches of the profession, as affording them a splendid instance of how much may be effected by judicious measures, admirably planned, and ably executed, under the most trying and difficult circumstances, requiring the most patient and persevering exertion to ensure success.

NAUTICAL DICTIONARY, containing *Explanations of Terms and Phrases used in the Building and Outfitting of Sailing Vessels and Steam Ships, &c.*
—By Arthur Young, Dundee.

Mr. Young's object has been to compile a work "of reference for nautical expressions now in use, as well as to afford general information on maritime subjects important to seamen, and useful to those who are in any way connected with or interested in shipping." In the space of a small octavo volume of some 400 pages, he has succeeded in compressing a vast quantity of useful matter. Amongst the manifold articles of a ship's furniture, he has introduced, for the first time in works of this kind, a description of the several component parts of the marine steam engine. He has also kept his work completed with the various new additions, so that it has the advantage over others of containing much new matter, and thereby, in a great measure, keeping pace with the improvements of the day. We recommend it as a useful little manual on nautical matters.

LECTURES ON NAVAL ARCHITECTURE, being the substance of those delivered at the United Service Institution.—By F. Fishbourne, Commander R.N. I. Russel Smith, London. 1846.

We are glad to see these lectures of Commander Fishbourne in their present shape. His first object appears to be that of drawing the attention of naval officers to the forms and stowage of their ships, and their different draughts of water, and thence to the peculiarities due to each. If he succeeds in this, Commander Fishbourne will have lectured and written to some purpose. The wave system of Mr. Scott Russell is advocated by the Commander. He considers and reasons on all these points, and concludes with the form which he considers would insure all the important qualities of a man-of-war. The amateur of naval architecture will not be without this work.

GATHERINGS FROM SPAIN.—By the Author of the *Hand-Book of Spain*. Parts 1 and 2. Murray.

Notwithstanding certain becoming misgivings on the part of the author, he has succeeded in producing a most interesting little work, rich and racy, full of anecdote characteristic of the country, the people, and their manners. We will venture to say that an attention to the peculiarities of Spain so fully explained in this little volume, will save much disappointment on the part of travellers, and they will be all the better pleased at not finding what they were told not to expect. We cannot find room for a specimen of the author's style, but we will venture to assure our readers that they will be well pleased with his work, and that the visitor of Iberia who goes without it will miss a well-informed and entertaining companion.

TRIGONOMETRY, PLANE AND SPHERICAL, Part II; containing the principal formula with exercises and examples, &c.—By H. W. James, F.R.A.S., Royal Naval College. Longman, London, 1847.

In our volume for 1843, we noticed the first part of this work, and bearing in mind the observations which we then made, we may repeat our opinion that it is well adapted to the use of the student.

ROUGH NOTES TAKEN DURING SOME RAPID JOURNEYS ACROSS THE PAMPAS and among the Andes.—By Sir Francis B. Head, Bart. London: Murray, 1846.

This is a publishing age, so why should we not have a fourth edition of our old acquaintance of former days, when speculators would fain know some-
NO. 2.—VOL. XVI. F

thing of the *El Dorado* of which they were in search, and sent a cavalier *a la Guacho* to seek knowledge for them. We well remember frequently almost losing our breath at the mere reading of Sir Francis Head's narrative, as on he went and we after him in his almost restless race across the Pampas of South America.

THE FIRST PRINCIPLES OF ALGEBRA, published by command of the Lords Commissioners of the Admiralty, for the use of the boys of the Hospital Schools, Greenwich. London: Murray.

We do not know a work which will sooner initiate the young mind in the principles of "Universal Arithmetic" than this compact little volume.

NEW CHARTS.

Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.

MAZARI BAY.—*Mr. Jackson, R. N.* 1846, price 6d.

MALOODA BAY.—*Mr. G. Giles, R. N.* 1845, price 6d.

BALAMBANGAN.—(Entrance to the southern harbour.) *Mr. G. Elliott, R. N.*, 1845, price 6d.

CANTON RIVER.—*Sheet 1, from Lantao Island to Lankeet Island*, 1815 and 1840, price 3s.

SOUTH YARMOUTH.—*Com. Sherringham*, price 6d.

WHITEHAVEN.—*Capt. Denham*, price 1s. 6d.

PORTS STANLEY, WILLIAM AND HARIOT, FALKLAND ISLANDS.—*Capt. Fitz-Roy and Sullivan*, price 1s. 6d.

CHANNELS BETWEEN SUMATRA AND LINGA SINKEP.—*By Lieut. Carnbee, Dutch Navy*, 1843, price 2s.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

CAPTAIN—G. W. D. O'Callaghan.

COMMANDERS.—J. C. D. Hay—H. G. Austen.

RETIRED COMMANDER.—Master J. Turton.

LIEUTENANT.—E. W. Bridge.

APPOINTMENTS.

CAPTAINS.—S. G. Freemantle (1842), to *Raleigh*, bearing the broad pennant of Commodore Sir T. Herbert, K.C.B., as Commander-in-Chief of the South coast of America Station—R. F. Stopford (1840), to study at the Royal Naval College, Portsmouth.

COMMANDERS.—G. Ogle, to *St. Vincent*—A. C. Key (1846), H. S. Hawker (1846), E. M. Lyons (1846), J. B. West (1846), and C. Hadaway (1846), to study at the Royal Naval College—J. C. D. Hay, on promotion to *Spitful*—H. G. Austen, on promotion, to *Vesuvius*—H. Gould (1830), to the Ordinary at Ports-

mouth—A. P. Ryder (1846), to study at the Steam Factory, Woolwich—W. J. C. Clifford (1842), to *Rivdore*—E. Crouch (1843), to *Devastation*—Sir W. Hoste, Bart. (1843), to *Spitful*—J. M. Pothury (1844), to *Caledonia*—H. C. Otter (1844), and T. Smith (1844), to *Avon*, to continue their surveys at the Hebrides—B. Baynton, to assist in the distribution of provisions in the Highlands of Scotland—Forster (1815), to *Victory*—C. Hall (1841), to *Caledonia*—J. G. Gordon (1815), to *Ocean*.

LIEUTENANTS.—F. D. Yonge (1845), to *St. Vincent*—H. M. Baker (1841), to study at the Steam Factory, Woolwich—S. S. Skipwith (1846), to *Trafalgar*—J. T. W. French, to *Dasher*—W. Lory (1821), to *Swift*—A. D. W. Fletcher (1845), to be Flag Lieut. to Vice-Adm. Sir F. Austen, K.C.B.—Sir G. Webster, Bart. (1840), to *Shearwater*—R. Purvis (1846), to *Melea*—S. Pritchard (1843), to *Queen*—E. J. B. Clarke (1841), to *Rosamond*—S. F. Douglas (1845), and W. T. F. Jackson (1846), to *Siren*—H.

T. N. Chesshyre (1846), to *Hecla*—Parker (1846), to *Amazon*—C. Fellowes (1846), to *Superb*—F. Morris (1842), to *Hibernia*—E. B. Rice (1844), to *Vanguard*—J. Strettell (1841), to *Building*—T. Miller (1844), to *Caledonia*, 120, as Flag Lieut. to Rear-Adm. Sir J. Louis, Bart., Superintendent of Devonport Dockyard—A. M. Shairp (1841), to *Penelope*—G. C. Lloyd (1846), to *Terrible*—W. H. Phipps (1846), to *Caledonia*.

MASTERS—J. B. Tucker, to *Cockatrice*, victualing transport—T. Edwards, and A. S. Knight, to *Avenger*—R. Reid, to *Victory*—J. Jeffery, to *Avon*.

SECOND MASTERS.—H. J. Josephson, to *Tartarus*—J. Walker and R. B. Mudge, to *St. Vincent*—W. Brodie, to *Medea*—W. Betts, to *Avenger*—R. Reid, to *Thetis*—F. Skoad, to *Shearwater*—H. J. Cunningham, to *Penelope*—H. E. Crout, to *Naiad*, storeship.

MIDSHIPMEN.—J. H. Osmond, J. J. Onslow, and M. S. L. Peile, to *St. Vincent*—J. Marryat, and P. Barnwell, to *Queen*—W. F. Irwin, to *Geyser*—E. F. Loder, to *Sidon*—J. H. Howard, W. G. Jones, and W. E. Stone, to *Excellent*—R. Elliott, to *America*—G. V. Philipps, to *Hibernia*—W. K. Bush, to *Ocean*.

NAVAL CADETS.—J. Robinson, and R. M. Patten, to *Scourge*—W. M. B. Edwards, to *Alarm*—N. R. R. Wilson, to *Grampus*—D. McInroy, to *Superb*—F. Suttie, to *Melampus*—H. Corbett, to *Eagle*—H. T. Burgoyne, C. Baillie, and F. Mackenzie, to *America*—L. Gunsten, to *Geyser*—J. S. Keynell, to *St. Vincent*—J. H. Witshed, to *Thetis*.

MASTERS' ASSISTANTS.—J. F. Tomlin, T. Pounds, J. R. Ryan, C. P. Tuck, F. Sheard, E. Wilds, J. B. Willshire, and J. Jones, to *Ocean*—A. B. Martin, to *Porcupine*—J. Gregory, to *Acheron*—J. Thompson, and R. Coen, to *Birkenhead*—W. Wooldridge, J. R. Richards, W. J. Mitchenson, and G. Willoughby, to *Caledonia*—G. H. Farrant, to *Naiad*—C. J. Slaughter, to *Vengeance*—A. Ansell, to *Medea*—E. J. Kemp, to *Penelope*—F. Kirkman, to *Victory*—W. Millman, to *William and Mary*—R. Reid, to *Wildfire*—A. D. Martin, to *Poictiers*—W. Turton, and W. Hobbs, to *Avon*.

NAVAL INSTRUCTOR.—G. Foster, to *America*.

CHAPLAINS.—Rev. W. Bell, to *Tortoise*, for duty at Ascension—Rev. C. L. Bell, to *Vanguard*.

SURGEONS.—H. O'Hagan, M.D., to the detachment of Royal Marines at Port

Essington—W. T. Alexander, to *Dee*—J. S. Davidson, W. Crofton, L. C. Urquhart, M.D., and M. C. French, to *Penelope*, for service on the Coast of Africa.

ASSISTANT SURGEONS.—F. J. Whipple, to *Ocean*—S. Bowden, to *Spy*—P. Deegan, to *Carysfort*—F. F. Morgan, to *Kingfisher*—J. A. Harvey, M.D., to *Melampus*—S. M. Steele, to *Racehorse*—R. Wallace, M.D., to *Vengeance*—F. J. Brown to Haalar Hospital—T. F. Purchas, and H. French, to *Caledonia*, for service of Plymouth Hospital—F. Manger, F. Everest, J. Lilburn, and R. Mingle, to *Victory*—C. H. Morrison, to *Constance*—W. E. Kay, to the Plymouth Division of Royal Marines—W. Bainbridge, to *Acheron*—W. Dunbar, to *St. Vincent*—W. B. Christy, and E. W. Pritchard, to *Collingwood*—A. Elliot, M.D., to the Marine Infirmary, Portsmouth—A. Little, M.D., to *Terrible*—W. L. Gordon, to Plymouth Ho-pital—W. Thomas, D. L. Morgan, F. C. Sibbald, W. H. Clarke, and M. Walling, to *Penelope*, for service on the coast of Africa—T. Ayling, to *Avon*.

PAYMASTERS AND PURSERS R. Loney and W. O. Cox, to *Amphion*—J. Craut to be Secretary to Sir T. Herbert, KCB, in the River Plate—J. H. Cook to *Resistance*.

CLERKS—S. Watson and H. E. L. P. Bailey, to *St. Vincent*—W. Mugford to be Secretary's Clerk to Commodore Sir T. Herbert—P. C. Beale to *Sidon*—At Hellyer to *Devastation*—R. Bone to *Canopus*—G. H. Appleton to *Fantome*—J. Tweedie to *Avon*—C. J. Warne (Assist.) to *Vindictive*—H. H. Gilbert to *Avenger*—J. B. Martin to *Terrible*.

COAST GUARD.

APPOINTMENTS—Com the Hon. B. C. F. P. Cary, to be an Inspecting Commander, Folkestone District—Com. W. Boys, R.N., to be Inspecting Commander, Berwick District—Lieut. W. J. Lake, (1840), to be Chief Officer—Mr L. Rees, to Auchmithie Station—Mr. M. Brathwaite, to Fort Twiss Station—Lieut. R. J. Le M. McClure, R.N., to be in command of the Camber Station—Lieut. J. Johnson, R.N., to be in command of a station.

REMOVALS—Lieut. B. R. Owed, R.N., to Ryde Station—Lieut. R. J. Beviens, to Yealm Station—Lieut. J. Spurin, R.N., to Padstow Station.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

Dec. 23. At Falmouth, the lady of Com. J. Dick, RN, of a daughter.

Dec. 27. At Leamington, the lady of Com. H. A. Story, RN, of a daughter.

Jan. 7. At Paignton, Devon, the lady of Capt. MacIlwaine, RN, Inspecting Com. of Coast-guard, of a son.

Marriages.

Dec. 29. At Bellaghy Church, Henry Stewart Beresford Bruce, Esq., (late Lieut. Rifle Brigade), eldest son of Capt. H. W. Bruce, RN., to Mariette Julia Charlotte, third daughter of John Hill, Esq. of Bellaghy Castle, county of Londonderry.

Deaths.

On the 6th inst., John Dyer, Esq., formerly the much respected Chief Clerk of the Admiralty, and many years Secretary to Greenwich Hospital, died at at Upper Clayton, at the venerable age of 80 years.

Jan. 2. Lieut. Charles Peake, RN, aged 52.

Jan. 3. At Bridlington, suddenly, Com. W. E. Curlewis.

Dec. 20. At Plymouth, Mrs. Risk, wife of J. E. Risk, Esq. surgeon RN.

Dec. 22. At Milbrook, Ret. Com. W. Campbell, RN, aged 80.

Dec. 29. At Lancaster, John Denis De Vitre, Lieut. RN, in his 90th year, and late of West Knoll, Cumberland.

Dec. 27. At Buncrans, county Donegal, aged 56, Ellen Birnie, wife of Capt. W. E. H. Allen, RN.

Jan. 5. At Woolwich, at the residence of his brother, Dr. W. L. Methven, surgeon, RN., Cathcart, youngest son of the late Capt. Thos. Methven, RN, St. Andrews.

Jan. 11. At Woolwich, Catharine, wife of Dr. W. L. Methven, surgeon, RN, and youngest daughter of David Meldrum, Esq. of Craigfoodie, Fifeshire.

Jan. 14. At Cheyne Walk, Chelsea, Josephina Brewer, daughter of Capt. W. H. Smyth, RN, President of the Royal Astronomical Society.

Jan. 7. At Springfield, Cove, W. Lambert, Esq., Com. RN.

At Toronto, Upper Canada, aged 37, Jane, relict of the late Lieut. Chas. Jones, RN.

Jan. 1. At Sevenoaks, the residence of Capt. Nepean, RN., Margaret, relict of the late Rear-Ad. Stuart, and sister to the widow of the late Com. Field, RN.

At Dartmouth, on the 5th inst., after a short illness, Fanny Jane, only daughter of Mr J. Coaker, RN.

Quarterly Naval Obituary—The following officers' deaths have been officially reported since Sept. 29. 1846 :—*Flag Officers*—*Admirals*, Right Hon. Lord A. Beauclerk, C.B. C.B. (1830), P. Stephens (1837)—*Rear Admiral* E. W. Browne (1840)—Retired Rear Admiral T. White (1846)—*Captains* C. Dilkes (1802), J. Slade, (1810), W. Fletcher (1829), J. Wyborn (1840)—*Commanders* R. B. Young (1810), C. Anthony (1813), R. Pilch (1813), A. Nazer (1828), W. Maitland (1840), W. H. Smith (1831), J. A. Gardner (1832), W. Parsons (1836)—*Lieutenants* W. P. Green (1806), S. Allen (1807), B. J. Bray (1810), G. Argles (1810), J. W. Smith (1810), W. Venus (1814), F. Hire (1815), J. Franklyn (1815), J. Anderson (d) (1816), W. Dundas (1818), G. Wyke (1840), P. Parkhurst (1841), D. Lane (1841), C. F. Collett (1841), T. J. Smyth (1842), W. C. Alexander (1842), W. G. Everest (1842), P. W. Gibson (1844), O. Benthall (1845)—*Masters*, D. Swan (1794), G. Turner (1796), J. Brett (1808), S. Sheppard (1814), T. Richardson (1836), W. H. Langtry (1842), E. M. Fox (1843), J. D. Taylor (1845)—*Royal Marines*—*Colonel* R. Swale (1837)—*Captains* J. Morgan (1837), G. E. Balchild (1827)—*First Lieutenant* F. B. O'Dougherty (1793)—*Second Lieutenant* F. Fanning, (1813)—*Medical Officers*—*Surgeons* R. H. Beaumont (1795), P. Henry (1801), G. Hogan (1813), R. Austin, (1815), J. Kittle (1336), R. Butler, MD. (1843)—*Assistant-surgeons* A. Kift (1812), E. Pinkerton (1825), T. Wallace (1841)—*Paymasters and Purvers* Sir D. Forrest, Kt. (1795), J. Kneeshaw (1811), W. B. Borham (1814), S. Brookslay (1838).

TABLE SHewing THE HOURLY VELOCITY OF THE WIND IN MILES—DEC. 1846.

A. M. Day of Month	P. M.																							
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	N	.	.	.	.	.	.	.	.	11	5	.	5	11	5	11	12	12	10	10	4	4	4	5
2	.	.	SW	.	.	.	.	.	.	NNW	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	5	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	NW	.	.	.	.	.	.	.	WSW	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	10	10	10	10	10	10	10	10	10	10	10	20	15	10	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	W	N	W	4	4	4	4
7	4	5	5	4	4	4	4	4	10	12	16	16	17	20	20	17	22	20	20	20	15	12	17	10
8	.	.	.	.	.	.	.	4	4	4	4	10	.	5	5	.	.	.	5	.	.	.	.	.
9	5	5	.	.	.	.	5	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	W	10	15	18	25	25	22	22	27	25	27	N	W	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	.	5	12	10	10	10	.	.	.	.	5	.	.	.
12	.	.	.	.	.	.	.	.	12	12	12	12	11	11	10	10	.	12	.	.	.	.	.	.
13	.	.	4	.	.	.	.	.	.	.	.	.	N	N	W	.	.	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	WSW	.	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.	5	5	10	.	5	5	12	10	10	.	.	.	.	.	.
17	.	.	.	.	.	.	.	12	12	10	.	.	.	.	.	.	.	5	11	10	12	10	5	.
18	.	15	13	15	15	14	15	10	10	10	10	10	10	10	10	10	10	.	.	.	.	.	.	.
19	.	.	WSW	.	.	.	W	NW	22	23	20	27	20	10	15	.	.	.	.	.	.	.	.	.
20	.	10	12	20	20	15	10	10	10	10	10	10	10	10	12	12	12	10	10	10	15	15	17	17
21	20	27	25	35	35	37	45	30	30	25	27	.	.	.	.	.	.	.	.	.	.	.	.	.
22	.	.	.	.	.	.	.	.	.	.	17	15	15	15	.	.	.	.	.	.	.	.	.	.
23	15	10	ESE	.	.	.	.	15	15	11	12	10	12	4	.	4	4	4	4	.	.	.	.	.
24	.	.	.	NW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10	12	12	12
25	11	5	16	18	20	15	15	21	10	12	12	12	10	10	10	12	15	15	12	12	10	.	.	.
26	NNW	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
27	NNE	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
29	E	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—DEC. 1846.

	1	2	3	4	5	6	7	8	9	10	11	12
A.M.												
5	.	.	.	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.0430	.0086	.	.	.
20	.	.	.	.	.	.0172	.0086	.	.	.	.	.
21	.1634	.0258	.0258	.0086	.0086	.0430	.0688	.0516	.0516	.0172	.0172	.0172
23	.0344	.0774	.0430	.	.	.	.	.	.	.	.	.
Total	.1978	.1032	.0688	.0086	.0086	.0602	.0774	.0946	.0602	.0172	.0172	.0172
P.M.												
5	.	.	.	.	.0344	.0258	.0258	.0344	.0344	.	.	.
10	.	.	.0258	.0086	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.	.	.	.
21	.0258	.0774	.	.	.	.	.	.	.	.	.	.
23	.	.	.	.	.	.	.	.	.	.	.	.
Total	.0258	.0774	.0258	.0086	.0344	.0258	.0258	.0344	.0344			

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—DEC. 1846.

	N.	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	WNW
Miles	297	325	122	.	38	15	.	.	.	229	444	184	189	365	411	30
No. of } hours }	31	31	11	.	3	1	.	.	.	7	31	16	9	33	36	5
Velo. } pr hr. }	9.5	30	11	.	12	15	.	.	.	32.7	14	11	21	11	11.4	6
Amt. } Rain, }	.	.	.	.	.	.	.	.	.	.	.524	.541	.035	.052	.	.

Considering from 6 A.M. to 6 P.M. *day*, and from 6 P.M. to 6 A.M. *night*, we have 1698 miles the amount of wind during the *day*, and 927 during the *night*. .570 inches the amount of rain during the *day*, and .688 during the *night*. Total wind 2625 miles, rain 1.158 inches. The greatest amount of rain was from S.W. and W.S.W. The number of hours during which rain fell was 28; and the number of hours during which the amount of wind is recorded was 205; during 539 hours it was calm.

Stubington, near Fareham, Hants.

GALLANT AND INTREPID CONDUCT OF A MIDSHIPMAN.— We have pleasure in recording an act of great intrepidity on the part of a young midshipman Mr. Augustus Bullock, youngest son of Captain Bullock of the surveying service, at present resident at Woolwich. While skating on Friday last, with a young companion, the ice broke, and the latter was precipitated into deep water. While a dozen grown up persons stood by without attempting to give aid, young Bullock nobly went in after his friend, whom he succeeded in raising, and supported him till a ladder was pushed from the banks, and both were drawn safely ashore.

GRATIFYING TESTIMONIAL.—A substantial mark of respect has been paid to a gallant officer shewing the opinion entertained of his services, by the merchants and other leading inhabitants of Guernsey. The testimonial presented to the gallant officer consists of a very handsome silver Salver, which bears the following inscription :—“ Presented to Acting-Commander ROBERT WHITE, of H.M. steam-packet *Dasher*, by the Chamber of Commerce, and some of the inhabitants of Guernsey, in acknowledgment of his indefatigable zeal in conveying the mails to and from Weymouth to Guernsey, in most tempestuous weather, and of his particular attention to the safety and comfort of his passengers, during a period of twenty-eight years.”

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory.
From the 21 of November, to the 20th of December, 1846.

Month Day.	Week Day.	Barometer In Inches and Decimals.		Fahrenheit Thermometer In the Shade.				Wind. Quarter Strn.				Weather.	
		9 AM.	3 PM.	9 AM	3 PM	Min.	Max	AM	PM	AM	PM.	A.M.	P.M.
21	S.	29.68	29.64	46	43	44	50	SW	SW	2	3	bc	bcp 4)
22	Su.	29.46	29.46	42	43	41	45	SW	W	2	6	bcr (1 2)	qbcp (3)
23	M.	29.83	29.77	43	49	37	51	SW	SW	2	2	o	od 4)
24	Tu.	29.62	29.60	53	55	48	56	SW	SW	2	1	or (1)(2)	o
25	W.	29.66	29.44	50	52	49	55	S	S	2	4	or (1)(2)	or (3)
26	Th.	29.25	29.29	46	47	44	48	SW	SW	3	2	bc	bc
27	F.	29.31	29.31	35	41	34	42	SW	NW	1	2	of	o
28	S.	29.35	29.42	36	38	35	39	N	N	4	3	bcm	bc
29	Su.	29.74	29.76	32	35	30	36	NW	N	1	2	bcm	bf
30	M.	29.86	29.88	27	32	24	33	NW	N	3	3	bf	o
1	Tu.	29.86	29.76	28	31	27	32	SW	SW	2	1	of	bc
2	W.	29.40	29.36	32	34	27	35	N	N	1	1	gof	gof
3	Th.	29.57	29.63	34	35	33	36	N	N	1	2	om	bcm
4	F.	29.80	29.80	31	36	26	37	N	NW	2	4	bc	bc
5	S.	29.99	29.93	32	35	30	38	SW	SW	1	3	bc	bcr 4)
6	Su.	29.71	29.79	35	39	34	39	NW	N	2	3	bmr (1	bc
7	M.	29.88	29.89	37	41	34	42	NW	N	2	4	o	bcp (3)
8	Tu.	30.22	30.19	38	40	37	41	N	NE	2	3	o	bc
9	W.	30.19	30.15	40	40	38	42	NE	NE	2	2	o	od (3)
10	Th.	29.92	29.82	40	41	38	42	SW	W	2	2	od 2)	or (3s (4
11	F.	29.60	29.54	28	29	26	30	NW	N	6	4	qos 1)(2)	beps (3
12	S.	29.59	29.61	31	32	25	33	N	NE	3	3	o	beps (3
13	Su.	29.75	29.73	28	29	26	30	NW	W	2	2	o	bcm
14	M.	29.62	29.50	21	27	19	29	SW	SW	1	1	b	bm
15	Tu.	29.38	29.42	22	26	20	28	W	N	2	4	bcm	beps (3
16	W.	29.64	29.69	28	32	22	34	NW	NW	5	4	qb	bm
17	Th.	29.57	29.67	32	32	26	34	N	NW	2	2	os (2	bcm
18	F.	30.15	30.11	22	28	22	32	W	SW	1	2	bm	bc
19	S.	29.82	29.80	38	42	32	42	SW	SW	3	1	or (2)	o
20	Su.	29.78	29.74	44	42	42	46	SW	SW	2	3	o	bc

Nov. 1846.—Mean height of barometer—29.949 inches; mean temperature—44.7 degrees; depth of rain fallen—1.33 inches.

COMMUNICATIONS WITH THE BRAZILS —The screw steamship Antelope, we are informed, sails hence on her second trip to the Brazils in a few weeks. The trifling defects existing in her engineering department will, in the meantime, be remedied, and we may then anticipate, from her, results even more successful than those attained on her maiden voyage. Liverpool, we trust, will shortly hold within her grasp, permanently, the whole of the communications with the important markets of South America. Three new sailing vessels, of the Swordfish and Columbus class are now strengthening our communications with the port of Pernambuco.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory
From the 21st of December, 1846, to the 20th of January, 1847.

Month Day.	Week Day.	Barometer In Inches and Decimals.		Fahrenheit Thermometer In the Shade.				Wind.				Weather.				
		9 A.M.	3 P.M.	9AM	3PM	Min	Max	Quarter.		Strength.		A.M.	P.M.			
								A.M.	P.M.	A.M.	P.M.					
21	M.	In Dec	In Dec													
22	Tu.	29-18	29-00	46	48	43	49	SW	W	6	4			gor (2)		bc
23	W.	29-02	29-10	33	38	31	39	SW	S	2	3			bcm		bcm
24	Th	28-62	28-76	36	38	32	39	E	N	4	3			or (2)		ors 3 4
25	F.	29-18	29-28	34	34	33	35	NW	E	2	2			oer (1)		os 3 4
26	S.	29-58	29-76	28	28	27	30	N	N	3	3			b		b
27	Su.	30-22	30-24	29	33	26	34	NW	W	2	2			bc		bin
28	M.	30-40	30-42	32	34	27	35	N	N	1	1			bc		bc
29	Tu.	30-42	30-40	24	32	23	33	S	SW	1	1			bef		o
30	W.	30-44	30-46	31	35	30	36	SE	S	1	1			b		o
31	Th.	30-57	30-55	29	32	27	33	SE	E	1	1			o		bc
		30-53	30-47	21	27	20	28	E	NE	1	1			b		bc
1	F.	30-29	30-17	28	32	25	33	NE	NE	2	2			ofs 2		o
2	S.	29-96	29-84	32	33	29	34	E	E	3	4			os 2		os 2
3	Su.	29-70	29-72	28	33	26	33	E	E	3	3			bc		os 4
4	M.	29-78	29-75	38	39	31	41	S	SE	3	3			o		o
5	Tu.	26-86	29-85	42	44	41	45	SE	SE	2	1			or 2		o
6	W.	29-97	29-99	37	41	34	42	NE	NE	1	1			of		of
7	Th.	30-10	30-04	40	42	40	42	E	E	1	1			od 2		og
8	F.	30-10	30-12	38	38	37	39	E	E	4	3			og		og
9	S.	30-32	30-30	35	34	34	36	E	E	2	2			og		og
10	Su.	30-30	30-26	31	32	26	33	SE	E	2	2			bc		o
11	M.	30-14	30-06	25	29	24	31	E	SE	2	2			b		b
12	Tu.	30-00	29-92	27	33	26	34	SE	E	1	3			bm		b
13	W.	29-84	29-86	31	38	31	39	E	SE	1	1			o		bc
14	Th.	30-00	30-00	29	35	27	36	E	E	1	1			b		bf
15	F.	30-03	30-00	29	34	26	35	E	E	1	1			bf		b
16	S.	29-98	30-01	30	33	27	34	NE	NE	1	3			o		bc
17	Su.	30-10	30-06	28	29	27	21	NE	NE	3	3			o		o
18	M.	30-08	30-08	28	32	28	33	NE	NE	3	2			o		o
19	Tu.	30-15	30-12	32	33	30	33	N	N	1	1			o		o
20	W.	30-02	29-96	28	32	28	34	NW	SE	1	1			bc		os 4

December 1846.—Mean height of the Barometer = 29-793 inches; Mean temperature = 32-5 degrees; depth of rain fallen = 1-18 inches.

TO OUR FRIENDS AND CORRESPONDENTS.

We shall be always glad to hear from the MASTER of the AUDAX.
MR. FOSTER's papers received.

Hunt, Printer, 3, New Church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

MARCH, 1847.

OBSERVATIONS ON MAKING THE PASSAGE TO THE EASTWARD THROUGH TORRES STRAIT, AND THE MONSOONS IN THE TIMOUR SEA.—*By Capt. M'Kenzie.*

WHEN approaching Torres Strait from the westward, and bound to Sydney, after passing Timour, it is advisable to keep well to the northward, say lat. 10° or $9^{\circ} 40'$ S., as the winds during the north-west monsoon prevail greatly at north, and often N.E., and then there is a strong set into the Gulf of Carpentaria. As the reefs are approached the soundings will gradually diminish, and give timely warning, when a course may be steered for Booby Island. If night time, by keeping two or three miles south of the latitude of the island, and not in less water than 9 fathoms, no danger need be apprehended. The strait may be entered by Wallis Island passage, or the northern one, and courses steered for Cape York and Albany. From thence a true E.S.E. $\frac{1}{4}$ S. course for fourteen miles, will place you midway between reefs X, Y, and the sandbanks to the eastward. From here S.E. $\frac{3}{4}$ E. nineteen miles, will lead up to the sandbanks east of Arnolds Island, from which, close past a sandbank and reef to northward, about midway, and S.E. $\frac{1}{4}$ E. forty miles, will lead up to a sandbank, which is W.N.W., Ny. by sixteen miles from the first bank west of Raines Island. From Raines Island it is advisable to keep in about 12° S. lat., as farther south, the west monsoon does not blow so steadily or so strong as to the northward. In about this parallel the longitude ought to be run down to enable a vessel to lay across the trade up to Moreton Bay. When in about 156° E., the current generally begins to set to the eastward twenty or thirty miles a day. This I have found noticed in the journals of several ships bound from Sydney to China, by the outer route, in the mouths of December to March, and it sometimes extends so far S. as 14° and 15° .

After passing to the southward of Pandora Rock and Indispensable Reef, in lat. 13° S., and getting as far east as 165° , one stretch across the trade will lead up most likely to Sydney, especially as N.E. winds prevail from 26° and 28° S. lat. in these months, with a strong southerly set. This eastern passage might be advantageously adopted in the west monsoon, when coming from India, particularly as at that time of year easterly winds are prevalent to the southward of New Holland, and often render passages long when bound that way. The sea between Bampton Shoal and New Caledonia is clear, and the passage between that shoal and those to the south-eastward of it is broad. By passing between these a vessel would weather easily, all the reefs outside of Sandy Cape, and the N.E. winds and southerly set, will enable a vessel soon to reach Sydney.

It has been generally supposed that the navigation of the Torres Strait was much more dangerous in the west than east monsoon; but the approach from the westward is much more safe and easy, as the soundings extend a considerable distance out. Whilst coming from the eastward there is nothing to indicate the vicinity of the barriers which are not generally to be seen more than five miles, and a crank vessel, if not making the opening, may have some difficulty in working off, that she may gain time to ascertain her position correctly, especially if the flood be making. The weather is often thick in both monsoons, and I have seen as dirty weather during the east as the west monsoon, when in the strait; and during the west monsoon there is always good shelter any where under the land.

With regard to the monsoons in the Timour sea, and the sea between the Arrus and New Holland near Torres Strait, the south-eastern one blows with the greatest regularity. During the middle part, May to August, it hangs at E.S.E. to S.E., principally blowing fresh: this time is called "White Water," by the Malays. In the early and latter part the wind keeps more to the eastward, and often veers to E.N.E. During this monsoon the breeze is generally brisk, and steady at the quartering of the moon; and the calms and variable squally weather occur at full and change. I have noticed this also in the trade on the east coast of New Holland.

In Torres strait east winds prevail greatly. The west monsoon does not blow steadily there. It is often checked by easterly winds, when light and variable winds continue for several days, until it comes up again with fresh strength. In that portion of the sea between Papua and New Holland, in the month of January and the commencement of the west monsoon, the winds prevail greatly at N.E. and N. backing to the westward at times. In the inner passage winds from N.E. to W.N.W. prevail to about 14° S., past which they haul easterly and S.E.

Between the monsoons there are often long calms, and the seas at that time abound with water snakes. The time of changing from the S.E. to N.W. monsoon is the most liable to long calms. When the monsoon is about coming in, the west winds often blow for five or six days, and then dying away, are succeeded for the space of one moon, perhaps by light variable winds. After this, at full or change, generally the true

monsoon sets in, accompanied by thick rainy and squally weather, for two or three days. After which it clears up, and a moderate breeze continues for some time, with clearer, and I think finer weather than in the east monsoon; and it is an acknowledged fact that land is seen more distinctly in the west than in the east monsoon. At full and change two or three days bad weather may be expected, though sometimes there are five or six weeks of fair weather, without interruption, and vessels lie in the open roadsteads of Samarang, Ampanam,* and Coupang, &c., during the whole of the monsoon, at the two latter; if the weather looks threatening at full and change, they run for the safe anchorages of Laboan Iring and Pulo Boorong distant about ten miles; and when it is over, which is usually three days, return to the roads. I have once been kept in the Cove or Laboan Iring for ten days; but this is a very unusual case. For the first three or four days there was rain with heavy squalls, afterwards clear with a brisk gale, which a vessel might have easily faced; but the surf was too high for boats to land on the beach at Ampanam. In the vicinity of the land, there is always more rainy and squally weather than some distance to seaward. But at the limit of this monsoon in about 15° S., I have always found rainy and squally weather. The mean direction of the wind is about W.N.W., hauling to N.W. and S.W. at full and change; at the latter part the wind is often some time at W.S.W.

The *Heroine* sailed from Bali Badong on the 29th of December, 1845. Experienced light and baffling winds, until abreast the east point of Sandalwood; when strong west winds, with rain, came up. Arrived in Coupang on the 5th of January, 1846, and anchored under the lee of Sandy Island, in 10 fathoms; a heavy surf was running at Coupang, in which one of the boats capsized when landing there. Next day, ran through Semoa straits with strong west winds, which lasted all the way to Port Essington, excepting a few hours calm, on the edge of the Sahul bank, where we got bottom at 40 fathoms. Here the vessel was surrounded by a number of sharks, four of which were caught in a few minutes, and many of them shot, as they were exceedingly voracious, and boldly attacked their companions who were hauled alongside after being partly quieted by firing down their throats, the taste of blood I suppose being irresistible. We arrived off Vashon head, Port Essington, at 7 p.m., and anchored at 9h. 30m. off Victoria. Here we found Dr. Lichhardt and his exploring party, from Moreton bay, had arrived after having been sixteen months on the journey, and encountering great hardships and privations; one of the party also had been killed in a night attack by the natives, near the Gulf of Carpentaria. They were very anxious to return to Sydney (where there had been a *Monody* published and set to music, on their bleaching bones in the deserts of Central Australia), and as it was not likely that any vessel would arrive at Port Essington before the east monsoon set in, and then bound to India, where they would probably be some time before a vessel sailed to Sydney, I offered them a passage in the *Heroine*. We left Port Essington in the middle of January, and after a series of light westerly airs,

* See a sketch and account of this in our vol. for 1844, page 79.

sighted Cape Wesser. From there got light north and north-easterly winds, with a set of half to one mile per hour to the southward. When it was calm the kedge was always dropped, if the lead showed we were drifting the wrong way, and the current tried. As there was only about 30 fathoms water, quantities of fish were always caught by bottom fishing, the Malays being excellent fishermen, and well provided with hooks and lines. Amongst others, we caught a large shark; when I was ramming a capstan-bar down his throat, it struck against something hard in his stomach, he was immediately ripped up, and a fish, which Dr. Lichhardt called a coffer fish, was found. It was almost square, tapering to the extremes, and had a hard shell outside. I have often seen the men when hauling in their lines, (which have generally two hooks,) thinking they had two fish, bring up only the head and shoulders of one,* the second bite being that of a shark, who thus took his share of the spoil. There were a great number of snakes also, but though many were shot and apparently disabled, they always managed to dive when the boat was sent to pick them up. The Malays assert that they are very poisonous.

The light northerly winds and southerly currents set us into the Gulf of Carpentaria and delayed us some days, as we had to work up along the east shore of the gulf. When off the north-east point, and standing to the northward with a light land wind in 3 fathoms, we touched on a shoal spot, but backed her off, and kept a little away to westward into 4 fathoms. After trying to get through to the southward of Wallis Islands, and being always prevented by the shoal water, stood for the west extreme of the shoals, on which we found 6 feet from the boat. We now got light westerly winds, and came to near Entrance Island till daylight, when the long-boat was sent in the direction of the shoal where we struck last voyage, with orders, if not speedily finding it to proceed to Possession Island and fill water. Two boats after that went on the same errand, but not being able to find it, as there was a strong ripple on at the time, and a fresh breeze blowing, we wayed, and stood for Possession Island, to pick up the watering party. The breeze now dying away, we were drifted between the small islands off Possession Island, and at the turn of tide came to off Cape York. At 4 A.M., weighed with light west airs, and at 8h. rounded Albany Rock with the boats ahead towing. Here we saw several natives in bark canoes, apparently spearing turtle. I sent one of the small boats with the Port Essington natives as crew, but they would not communicate with them, but pulled in shore. About 10h. the west breeze freshened, and hauled more northerly. We passed Cairn Cross in the evening, when the wind died away and came light off the land. We made little progress this night, being only abreast of the Hannibal Island at daylight, when I steered over for the wreck of the Archibald Campbell. Passed over a streak of light-coloured water 16 fathoms on it, about one mile west of the reef. Both of her masts were standing, though I since have heard they have been taken out.

* The same circumstance has been witnessed by the Editor at San Blas on the coast of California.—Ed.

From there I went to Sir Everard Home Islands, under the south side of which I came to at 10 P.M. There is snug anchorage inside of these islands, going in between the north one and the main, and on the main there is plenty of good fresh water. Here the schooner Ariel lay for some time when trepanging, or fishing *biche-le-mer*.

WATERLOO BAY, *South Coast of Africa.*

[The following extract concerning this anchorage from the remarks of H. M.S. *Apollo*, Commander Radcliffe, may serve as a useful caution to others.]

Aug. 27th, stood in for the land about the Kowie River, on the star-board entrance of which is a large house, and on the post a flag-staff. Steered along shore to the eastward, keeping at a distance of three or four miles; at sunset passed the Black Rocks, about ten miles west of Great Fish River; they are three in number, and an excellent land-mark very correctly placed in the chart. The centre one is like a wedge, the other two round at the top. On the evening of the 28th we were within six miles of the Fish River, but not deeming it prudent to run into an unknown place during the night, hauled to the wind, intending to stand off and on till daylight; but it falling calm, and finding by the lead, the current and swell were drifting the ship fast in-shore, and hearing the surf breaking heavily, let go the bower anchor in 35 fathoms, which brought the ship up, and on trying the current found it setting W.b.N. $1\frac{1}{2}$ mile per hour, which with the swell would have soon placed the ship in a most dangerous position. At 3h. 30m. next morning, a breeze from the eastward sprung up, attempted to weigh the anchor, but carried away the messenger, when the cable ran out to the clench, carrying away stoppers and running through both compressors. Shackled the messenger and hove the anchor up, when we found both flukes gone and nothing but shank and stock remaining. At daylight found the current had set us to the westward of the mouth off the Kowie River; after this we had a fine working breeze from the eastward, but could do nothing against the current, finding her when we stood in shore still off the Kowie River. On the evening of the 28th, when under double-reefed topsails, it suddenly fell calm, and shortly after shifted to the westward; shaped a course for Great Fish River, and ran by log abreast of it by midnight; shortened sail and hauled to the wind to wait for daylight, in the morning stood in again, and on making the land, found ourselves again off the Kowie; current setting to the W.S.W., three miles per hour.

Aug. 29th, at 8 A.M., passed the Black Rocks, strong westerly breezes, soon after observed a barque and two schooners at anchor off the Great Fish River, rounded Great Fish River about three miles, and then hauled in for the anchorage. 9h. 30m., came to with small bower in 9 fathoms, Great Fish River point bearing W. $\frac{1}{2}$ S.; Black Rocks under the flag-staff, N.W.b.W. $\frac{1}{2}$ W.; landing place N.b.W.; eastern extreme of land

E. Shortly after anchoring, Mr. Salmon, the owner of the Waterloo schooner, the person who discovered the landing place about seven weeks before, came off in a surf boat, and stated we were in the very best anchorage in the roadstead, and he thought we must have had a pilot on board to have taken up such a good berth. Not liking the appearance of the place, and although called Waterloo Bay, it appeared to me a straight line of coast, and anything but a bay, I, therefore, directed every thing to be ready for slipping. At daylight, heavy rollers came in, breaking within a cable's length of the ship on each quarter. At this time there was a light air from the southward, but not sufficient to get under way with; sent the cutter to sound round the ship, found 7 fathoms close to where the sea was breaking. At 10h. 30m., the breeze veered to E.S.E., and freshened a little, when I determined on getting under way, shortened in cable, and found it had swept a rock about 50 fathoms from the anchor; stopped heaving, and prepared for slipping. In the act of making sail the cable parted, let go the starboard bower; finding the ship drifting, let go sheet anchor, which brought the ship up; furled sails. At noon, Mr. Brown, the master of the barque Catharine, came on board, and stated the rollers would increase as he had found by experience, and volunteered to assist in making a hawser fast to his vessel for the purpose of casting the ship the right way, the rollers setting in on our starboard bow, and it being absolutely necessary to cast her that way.

At this time the wind veered to E.b.S. and sometimes E., which determined me on trying again to get the ship under way, otherwise the ship must inevitably have gone on shore on a reef of rocks, where the sea was breaking at this time most furiously. Sent the cutter with hawsers to the vessel on our starboard bow, weighed the sheet anchor and found both flukes gone. Seeing it impossible for the boats to reach the ship with the hawsers, from a strong current setting them to leeward, and the ship at the time casting the right way, in consequence of the wind at this moment veering a point more to the eastward, slipped the cable and made sail, ordering the boats to slip the hawsers and return on board. When the ship gathered way there was not a person on board but who returned thanks to a gracious Providence, for saving them in a most miraculous manner from this most imminent danger; for had not the wind veered at the moment, or had we failed to get to sea, in another hour the ship would have gone on a reef where every soul must have perished. The danger not being from the wind, but from the rollers, which snapped anchors and cables like glass. Having lost all our anchors, returned to Simons Bay for others.

From what I have seen of Waterloo Bay I consider it a most unfit place for any large ship to attempt landing a cargo; in fact, there is no bay, but nearly a straight line of coast, with a rocky bottom and a constant surf on the shore.

STORES OF GUANO ON THE CHINCHA ISLANDS, PERU.

THE rock on which the accident happened is very small and steep. I have since sounded and surveyed round it, and the form is as nearly conical as I could trace it under water: the top is about the size of a small boat, and is five feet under water at low-water spring-tides, having thirty feet close to its sides. It lies right in the way of ships going to their anchorage, and I find that since H.M.S. *Cormorant* touched upon it last year;* the *Warrior* and *Amiga*, guano ships, both struck upon it, and since them the *Chile*, and *Caledonia*. The former vessels merely grazed it, whilst the *Chile* taking it end on, fairly rebounded from the shock: the leadsman had just called his soundings (6 fathoms), for I never enter or leave a port without a lead going, a trite regulation, but a good one nevertheless. Both the steamers, *Chile* and *Peru*, have frequently passed close to this spot at full speed, no one dreaming of the existence of any rock, but very fortunately, on this occasion, the engines had been stopped several minutes to prepare a boat for communicating, and which was in the act of being lowered as the ship struck, or the result would probably have been fatal. The rock is of red granite and quite steep to. I was told by Capt. Cumming of the *Caledonia*, that the commanders of the *Coquimbo* and *Bolton Abbey*, of 1000 and 800 tons burthen respectively, then lying lashed alongside the cliffs loading guano, proceeded on board the *Caledonia* after she struck, and declared that they had either passed *over* or *inside* the same spot a few days before and knew nothing of the existence of a rock! These vessels had left Callao for the Chincha islands previous to my arrival at the former, and had not seen my report and publication in the *Comercio*; the vessels that had touched upon it before said nothing about it. I have now laid down a buoy upon it for the Guano Company, in 5 fathoms, a boat's length from the rock, north of it; it carries a staff and red vane 15 feet high, and is very conspicuous. It would not be prudent to pass inside of the buoy as another rock lies some 60 yards S.W. of it, although the channel between it and the nearest point is 150 yards wide, with 5, 4, and 3 fathoms in it. Should the buoy be gone at any time, the marks to clear the rock on hauling round the N.E. point, coming from Pisco roads, are, the easternmost Salmadina islet kept open of the point until the N.W. pinnacle ship rock comes open of the Mangara cliff, to which cliff the ships lash, and receive the *mangaras* (canvas hozes) down their hatchways. The Guano Company are about to establish other loading shoots at the other two islands, and it is absolutely necessary that a close survey of this invaluable group should be made, when so many vessels are constantly proceeding thither for cargoes of guano.

It may not be out of place here, Mr. Editor, if you think I am not trespassing too much upon your valuable pages to state, that from an approximate calculation I made some two years ago of the quantity of guano on this little group from actual survey, there is sufficient, at fifty

* See account of this rock in the vol. of the *Nautical* for 1845, p. 722.

thousand tons exported per annum, to last upwards of a thousand years! so that there need be no fear of exhausting the supply, as there are several other spots on the coasts of Peru and Bolivia, that would yield equal quantities. This substance is upwards of one hundred feet deep in the centre of the northern island, gradually decreasing in thickness at the edges, and resting on a granite formation; the other two islands appear to contain a still larger quantity than this one, and notwithstanding the many thousands of tons that have been carried away from this (the only island yet worked), the quarry, in comparison with the unwrought guano, is only a fractional part. The Indians had worked this island long before the Spanish conquest, and it has given constant employment to a number of coasting vessels since the sixteenth century, besides the no small quantity exported to Europe and the United States within the last five years. Birds' eggs, the interior filled with native sal ammoniac, are frequently dug out at great depths (I have had two in my own possession), and also the bones, beaks, and claws of the various birds which have frequented the islands, such as pelicans, boobies, cormorants, and a bird called *potayunka* (Indian), a kind of peterel, which burrows in the guano, and is so numerous that it is generally believed this class has chiefly contributed to the formation of this invaluable manure, called by the Indians "guano," or "huano," signifying the dung or excrement of animals, and which name the Spaniards afterwards retained, and the vessels employed in this trade called are hence Guaneros.

The Chincha group may be reckoned amongst the hundred and ninety-nine wonders of the world, and in walking over the island, the mind can hardly conceive the mass to be the excrement of birds, unless one goes into a simple calculation, when it will be found that a million of birds in three thousand years are more than sufficient to make this deposit, for here it has never been known to rain in the memory of man! The surrounding sea is literally alive with fish at all seasons, and, after all, a million of birds distributed over seven square miles of surface (which is about the superficial contents of the Chinchas,) is by no means overrated. In fact, we are quite at liberty, in such a calculation, to take as many birds as would actually cover the ground, for every one who has made a voyage to the tropics, must have seen the innumerable flocks of sea-fowl that hover over rocks and islands, away from a civilized coast.

I have been chiefly led to trouble you with the above remarks, on the quantity of guano on the coast to relieve the minds of some of our great agriculturists of the dread they appear to entertain of the guano becoming shortly exhausted, or the Peruvian Government placing a heavy prohibitory duty, than which nothing can be more visionary; and, trusting that my remarks may add their mite to the useful information found in the volumes of the *Nautical*,

I remain, &c.

GEO. PEACOCK.

To the Editor N.M.

AUTO-BIOGRAPHICAL SKETCHES, by a Merchant Sailor, illustrative of the State of the British Merchant Service.

(Continued from page 78.)

THE year, a part of which I spent at the beautiful island where our vessel was now lying, was ever memorable in West India annals, as that in which the great scheme of negro emancipation was to be tried, and in which they eventually procured unrestrained freedom. It was the last month of the time that the negroes were slaves, and an exciting month to both white and black. Many were the surmises that the latter would, when free, avenge their former wrongs on their former tyrants, and many of the latter description of planters trembled in cowardly anticipation of a retributive conduct on the part of their slaves, which the remembrance of their former cruelty towards them, made them feel might be expected. We had fourteen of these negroes working on board our vessel during our stay, and it was a great source of amusement to listen to the extravagant fancies they entertained as to the state of existence they were to follow when free; to be enabled to live without working, amidst plenty, and to be possessed of fine clothes, were settled points. "I selb massa!" "No care for buckra now," were frequent exclamations, while all attempts to prove to them that they must labour to be enabled to procure the necessaries of life, were treated with utter contempt and manifest incredulity; and they looked as if the party trying to reason with them, was their worst enemy. Abstractly speaking from principle, there can be no doubt that they had a perfect right to their freedom, but granting it in the hurried manner in which it was done, while they were unprepared for its blessings, and incapable of understanding their position, and realizing its benefits, produced an incalculable amount of evil to the unfortunates themselves. I could produce a mass of evidence from personal observation to prove this position, which, however, would not be credited by the pseudo-philanthropists of the day; and as the object of these sketches is not to enter into controversial disquisitions, I will simply state the plan I would have adopted to gain the end in view, of preparing the negro for his state of emancipation, and while doing so, qualifying him by education and culture for enjoying it.

I would have passed a law, declaring all children under fourteen years of age, and all children born after the date of the act, free; empowering, also, every slave to cause his or her valuation to be made by a properly constituted board; the slave should have had one day in the week besides Sunday given him free for ever, to work for his owner or otherwise, the produce of which labour, and any other savings, he could put into a savings' bank, until it amounted to the proportionate value of another day's unconditional freedom for ever, and so on, until the slave, by his own industry, had worked out his emancipation, a gratuity at the same time being given him for good behaviour, of one or more days' freedom. Habits of industry would thus have been engendered which would never afterwards have been forgotten, while a system of education established

from the commencement of the plan, would have assisted materially in humanizing the feelings, and improving the habits of the negro. The education the negro had a chance of procuring at that period was of too ascetic a cast, and tended more to confirm narrow-minded views than to eradicate them. The old and helpless would also have been favourably considered, and a race peculiarly fitted to live and labour in the climate of the West Indies, might have been produced, equal, in a great measure, in time, to their white masters.

The old merchant to whom the vessel was consigned, was a regular tyrant of the old school. He could never address a civil word to his slave; the whip was often in use, and a small quantity of bad provisions with constant hard labour rendered his slaves' existence anything but pleasant. He had in his possession a father and son, the former fast verging towards that "bourne from whence no traveller returns;" the other a fine athletic negro about twenty years of age. The former was employed about the premises in town, while the young man's chief occupation was pulling an oar in one of the launches that went to the neighbouring estates to collect the sugar for the ships. The master passing the old man one day, in one of his worst humours, began to abuse him for an alleged unwillingness to do his work, and in the young negro's hearing threatened to flog the father. Premature old age and hard work with ill usage, had rendered the poor father less capable of active exertion than he had been; he merely looked up in his master's face, with a deprecating, half-frightened, glance, which plainly said, "don't flog me, I am doing my best," while the son, roused at the threatened and unmerited punishment, ventured to mutter a remonstrance. The infuriated master instantly ordered a severe punishment to the old man in the son's presence, and told the son if he ventured to say a word he would serve him the same way. The master passed on; the son retired to a quiet corner of the premises with an axe, and laying his left hand on a block of wood, with his right hand chopped the left off, that he might render himself useless to his master. I happened to be at the wharf when this scene occurred, and I yet vividly recollect my horrified feelings, when I heard the brutal master exclaim with an unrecordable oath, that he would make the villain do as much work with one hand as with two!

As the negroes generally existed while in a state of slavery, and as they now exist in their native Africa, much requires to be done to alter their physical condition, before their religious culture can be brought into efficient operation. There is a degree of savage ferocity about the negro, when his passions are roused, which can scarcely be believed except by those accustomed to their character. I remember, some years ago, seeing a negro who had been enlisted in Africa, belonging to a detachment of one of the West India regiments, stationed on board the *Romney*, in Havana harbour, who kept and regularly used the skull of his former enemy as a drinking cup; it was rudely clasped together with silver, and evidently preserved with great care. Surely while such a state of things exists, it is useless for missionaries in Africa to spend all their time attempting to teach these people the abstract doctrines of the Bible.

Better far to employ themselves principally in educating the negro, and improving his physical condition, by introducing the customs and habits of civilized life, and making it apparent to the unfortunate race that by following the example set before them, they can be rendered much more comfortable and happy even in this world, than they have been.

While I mention these individual instances of ferocity in the character of the negro, and while I aver that many such exist, there were many, even at the time I am writing about, in the West Indies, who, from living under kind masters, had improved most wonderfully, and made vast advances towards complete civilization. I have known many, very many instances of the greatest gratitude and affection on the part of negroes towards their masters, and it is a notorious fact, that the planters have suffered least from want of labour in those islands and colonies, where the best understanding formerly existed between the owner and slave; thus proving that many of the evils entailed upon the planters by the emancipation of the negroes on their estates, proceeded not from the fact of emancipation being granted, but entirely through their own bad treatment, while the negroes were in a state of bondage;—One can scarcely avoid deeming it a sort of retributive justice.

Mais revenons à nos moutons to our *fusionsless* skipper, our drunken worthless mate, and the circumstances which were occurring on board our brig. The month of July was fast departing, and the 1st of August fast approaching, that day, before the expiring of which we must be under way, on our homeward passage, or increase the insurance on ship and cargo to a very great amount; that being the last day given by underwriters, before the extra risk, caused by the hurricane season, commences. The outward cargo was discharged and the homeward cargo gradually coming on board, when, one Sunday morning, the mate proposed to several members of the crew, a cruize to leeward in one of the boats. In the disagreeable, dangerous, maudlin state of intoxication in which he then was, I wished to avoid going, but so soon as he saw how my inclination pointed, he insisted on my accompanying him, and, in fact, ordered me to go. As he knew that the master was favourably impressed towards me, he fancied I would partly frame an excuse for his going, should he be discovered; and he was becoming so ridiculously jealous, because I refused to drink spirits on every occasion, that he disliked my being out of his sight. Putting plenty of provisions and spirits into the boat, a volunteer crew was soon mustered, where all were alike fond of fun, frolic, and grog; and we went to a bay to leeward, the beach of which was lined with majestic cocoa-nut trees, loaded with fruit.

After frolicking about, cutting down sugar-cane, and every thing that came in our way, some of the men, at the mate's suggestion, went up the cocoa-nut trees and began to cut down the fruit wantonly, and more than would have loaded half a dozen boats. All the remonstrances I dared to utter against this wilful destruction of property were scouted, and grog being in the ascendant, I was called milksop, and sundry other such names expressive enough in their way. While they were yet on the trees, a negro came down from the estate, on which the trees were

situated, sent by his master, to order the men to desist from destroying his property. The man, was very civil and respectful, but the disposition of the brutal mate could not permit such an opportunity of gratifying it to pass unheeded he said, "Let us pound that negro;" and heading the attack, to which the men followed, the poor unfortunate man was knocked down and most shamefully ill-treated; indeed, it was afterwards understood his life was for a time in danger. I was at this time keeping the boat afloat, and saw a large number of negroes coming to their companion's assistance, headed by a white man. I ran and pointed out to the mate his danger; at first he was inclined to bully and stand the consequence, but his fears prevailed, and calling off the men, they ran to the boat, having just time to embark 'ere the assisting party were at the water's-edge. Fortunately there was no name on the boat, otherwise we should have been discovered, as it was, a rigorous search was made amongst the ships' companies on the following day, and, fortunately for us, without the boat or men being identified.

As we were pulling the boat towards the vessel, after the disgraceful acts of the day, the men and mate all more or less intoxicated, the conversation familiarly carried on between them, the men having from repeated scenes of a similar nature lost all respect for their officer, a wager was, after a very wordy discussion, made between the mate and one of the men, a mad-cap fellow, who was known by the soubriquet of Black Joe, from his dark complexion, and a droll sort of expression he was in the habit of using when intoxicated, viz.—"Poor Black Joe, born without a shirt." The mate wagered that he would put Joe in the main-top that night before twelve o'clock, without his knowing it, the wager was accepted on Joe's part, the forfeit being the best blue jacket of either party. The short twilight of the tropical day had passed 'ere we reached the vessel, supper was procured, when shortly afterwards the mate called Joe, and asked him if he would have a glass of brandy and water. Joe, of course, replied, "Yes," and got it in a tumbler; shortly afterwards, without being noticed, he lay down and fell asleep on deck. Supper past, the cook and I, retired to our hammocks in the forecastle, the rest of the crew being strewed about asleep on different parts of the deck, a custom frequently adopted by seamen in the West Indies, but very injurious to their health, which, however, gave the authorities on board this craft very little trouble. About 10 P.M. we heard a scuffling noisy altercation on deck, the cook got on the forecastle ladder, and blocked up the hatchway: he permitted me to put my head up so far as to enable me see what was occurring, but refused to allow me to go on deck, telling me to keep myself quiet and out of trouble. Looking aft, we saw a man, who proved to be poor Joe, dangling mid-way between the main-top and the deck, suspended by the middle by the top-gallant-studding-sail tack, his extremities hanging down: two men were in the top endeavouring to haul him up, but could not succeed in getting him farther; meantime the position in which the poor fellow was suspended had induced a pain which awoke him, half choking half stupid from the effects of the dose the mate had administered, it being, according to his own admission, laudanum and brandy, the former no doubt added with

a drunken and unscrupulous hand. Looking around, Joe discovered the main-rigging not far off, at which he grasped, and gaining the ratlines, was safe; looking upwards, he saw the two men in the top, recollected the wager, and with an oath, said, "Ah! you rascals, if I catch you, I'll—". What Joe's threatened vengeance might have amounted to, I cannot say, for the remainder of the sentence was lost in the events which followed.

The two men, seeing Joe safe in the rigging, were bustling out of the top, on the other side, when one of them (the steward, not much accustomed to going aloft,) in his fright coming down the futtock-shrouds, let go both hands and feet, and striking the rigging halfway down, plunged overboard into the water. The cry at once arose, "A man overboard!" the mate's voice the loudest, calling out, "Why don't you get into the boat and pick the man up?" In the confusion, however, time was elapsing, and I urged the cook to let me go, which at first he refused, coolly telling me the fellow would get sobered by his ducking. The chance of the steward's drowning, however, made him relax, and I, accompanied by the second mate, got into the boat and saved him, after he was very much exhausted.

Half an hour after the first alarm, comparative tranquility was once more restored, the men renewing their broken slumbers, and the mate retiring to the cabin. The cook smoked a pipe in the forecabin, and moralized to me on the sad effects of intoxication, and predicted some queer work 'ere the voyage was over. We had scarcely turned into our hammocks, when we were again called by the mate, "all hands discharge droger," one of these schooners having come alongside with cargo collected to windward. According to the custom of the trade already mentioned, immediate preparations were made for getting her alongside, and commencing to receive cargo. The mate was evidently very much intoxicated, Joe and the steward were both unable to appear from the effects of the affair already narrated, the remainder of us got into the boats and run lines to the schooner, which did not shoot quite up alongside. So soon as she came near enough, the mate, without cause, began to abuse the master of the droger, applying to him a mixture of oaths, a variety of expressions of the worst description, which I trust are only known at sea. The man bore it patiently for a while, but at length irritated by the continued vituperation, he quietly told the mate to say nothing more, as he wanted to have no altercation with him. In making the remark, he discovered his country by his Irish brogue, and then the Welsh mate uttered all the epithets he could possibly remember about the man's country. By this time the droger was alongside, the mate on the brig's gangway, the skipper of the droger aft on his little quarter-deck, with a pea-jacket thrown over his shoulders to keep off the dew, a tall, well made, athletic fellow, evidently desirous of having nothing to do with the mate. His coolness and contempt only excited the other's ire, who at last jumped on the droger's deck, and going up to the master again insulted him, and threatened to knock him down. The Irishman's temper at length gave way, he threw down the pea-jacket, and with one blow sent the mate heels over head; the mate returned to the attack, a

second time he was prostrated, and then the passion of his antagonist being roused, he took him (big and robust as he was,) by the back of the neck and the unmentionable part of the breeches, and lifting him like a baby, threw him into the water between the droger and the brig, daring any of us, at the same time, from coming to the mate's assistance. I, however, accompanied by one of the men, went down the lanyard of the fender, and putting my leg down the mate clutched it, with the assistance of the crew we got him on board, and carried him into the cabin much exhausted by his beating and ducking. Considering him safely deposited, at least for a time, I returned to the deck. The second mate, an easy-going stupid sort of man, took no charge or interest; his occupation was in the hold, I had therefore to do the best, being in a measure expected to do something by the crew. I spoke to the master of the droger, told him the circumstances, said the crew were willing, and if he would send a dozen of his negroes crew on board, we would heave the sugar in. He at once agreed, and seemed, what he proved to be, a frank hearty Irishman. We had gone on heaving in three hogsheads of sugar when a slight shower put a stop to our operations, the men and the negroes taking shelter under the awning. The mate again came on deck, went to the gangway, and addressing the master of the droger in an apparently frank and ingenuous manner, said he was sorry for what had occurred, it was all nonsense, and asked him to come on board and shake hands with him and be friends. The man at once did so; the mate then asked him below to take a glass of grog; they went down together. From what transpired afterwards, it appears that when they went below, the mate went into the captain's state-room to get the grog, but drunk as he still was, he did not perceive that the man could see what he was about. The mate filled some brandy into a glass, and then, after fumbling for some time in a small box (the medicine chest), he produced a bottle, and poured something amongst the brandy: this aroused the suspicion of the master of the droger, who refused to drink, and went on deck. Next morning I found the laudanum bottle in the medicine chest with the stopper out, having evidently been used.

The Irishman came forward to the main rigging, where he stood leaning against the bulwarks, in front of his negroes, waiting till the shower was over; shortly after, I saw the mate come out of the cabin, and go quietly forward on the opposite side to where we were standing, I took no notice as I suspected nothing. It was a custom with the cook, always before leaving the galley for the night, to fill a large fish-pan with fresh water for the men's coffee in the morning; this the mate seized, emptied the water out, and getting it behind his head, having the handle firmly grasped with both hands, he stole aft quietly, until he came close to the master of the droger, when he brought the pan down with all his force; the poor man had just time to raise his arms in defence of his head, which they fortunately did protect, the pan being shivered to pieces. He then flew upon the mate, and clutched him in his iron grasp, holding him with one hand and punishing him with the other; our crew seized the mate to pull him away, when the negroes came to the assistance of their master, and with difficulty we got

them separated. I then implored them to go on board their own craft, when I cast off the ropes and allowed her to drift away, glad at any risk to get some sort of tranquillity restored.

Next day the master of the droger made a complaint to the magistrates, but Jemmy's brother and the consignees being all magistrates and men of influence, and our skipper evidently unwilling to have any inquiries made, or to take any necessary steps in the matter, it was hushed over, the mate, no doubt, telling his own story. It is difficult to understand why the master should have tolerated such conduct, but he did not know the whole of it; he may have supposed it merely a row between the parties both equally to blame; moreover, he was always glad to patch up matters upon any terms, feeling, no doubt, that his own conduct would not bear investigation. There can be no doubt that such was his feeling, and the more he himself became the victim of increased habits of drinking, the less did he feel disposed to attend to any duty. When intoxicated, as judging from appearances, he must have frequently been at this time, he returned to some of his old pranks.

A few nights after the occurrences just narrated, he came down to the beach of the bay opposite his brother's house, and just before midnight got into a canoe, and paddled himself off to the vessel. Fortunately, one of the men heard him, and jumping up, appeared to have had the watch. Jemmy was satisfied, and returned on shore, believing that he had left a well ordered vessel under safe watch. It need scarcely be added, that no watch had been kept on board since our arrival.

WHALERS IN THE PACIFIC.

A FEW days after the loss of the *Falcon*, and the death of her captain, the cutter *Lambton*, and the schooner, *Unity of Woa-hoo*, arrived in the harbour of *Metallanine*, (*Ascension island*), finding the *Falcon* a wreck on the reef, and a warfare going on between the white men, together with a friendly tribe of natives, their allies, and the tribes and adherents of *Narawah*. The *Avon* schooner under *Sandwich island* colours, was at this time lying in the harbour of *Kittie*, on the lee side of the island, and a message was sent down to request her assistance, which the captain refused unless the whole of the property saved from the wreck was consigned to him; to which hard condition they were partly compelled to yield. With the force, therefore, now available, attacks were commenced, in which, it is almost unnecessary to say that, the Europeans uniformly had the advantage from the superiority of their means, their arms, ammunition, &c., while their native allies were valuable channels of local information; and as spies and informants regarding movements, &c.

It had been said that shortly previous to these attacks, a plan was concerted by the natives to cut off the cutter and schooners; there was not sufficient evidence to bear out such a supposition. They had undoubtedly become bold from success, as they considered it in their plunder,

murdering the captain and his people, &c., and hitherto escaping with impunity; and it is reported they had fired at the boats when on their way to the shore for wood and water. That muskets were fired at them perhaps is true, for it appears that open warfare had commenced since the murder of Capt. Hingston and his crew, and it is plain that the boats of the three vessels, armed and manned, with nearly 40 Europeans, accompanied by near 400 native allies in their canoes, had *another* object than the one of merely proceeding on shore for wood and water; *that* object was undoubtedly to take vengeance for the murder of the *Falcon's* people.

Partial attacks and fighting were carried on now from day to day at Metallanine and the neighbourhood, all the force of the cutter and two schooners, their guns, arms, &c., the wrecked crew of the *Falcon* and the white men on the island being formed into one body under the captains of the three vessels, who all joined in the general determination to revenge the murder.

It should here be observed that Narawah was not more than *third* chief of his tribe, though he had been known to be most active in his hostility to the white men, and undoubtedly the instrument and instigator of the murders; and what still more incensed them against him was, the evidence of many natives that he was the actual perpetrator of the most barbarous and brutal cruelties in mutilating and defacing the bodies. Against him therefore all the vengeance of the Europeans seems to have been directed. Wargie, or second chief of the tribe had evinced a friendliness towards them, but the head chief Johapow, though he had been by no means active in the matter, was nevertheless included in the "proscription" declared by the Europeans, as well as by all who should evince in any way the slightest hostility to them. In consequence of this determination being made known, propitiatory offerings of the "Cava" root, according to custom in their own warfare, were frequently made by various petty chiefs and others, whose interest it was to remain neutral, but the "Cava" was never accepted. This had the effect of keeping them in a state of terror and suspense, and effectually deterring them from taking part against the white men. During the several days fighting and routing the hostile tribes, their habitations, cocoa-nut and bread-fruit trees, banana plantations, and above all their "Cava," on which they set the greatest value, were fired, destroyed, and laid waste. These proceedings becoming now universally known an intimation was spread abroad, that if any of the chiefs or others permitted the murderers to associate with or take refuge in their tribes, they would be treated with the same severity. With the many advantages the Europeans possessed these measures soon brought things to an issue. A terror and apprehension pervaded the natives generally, and had the effect of reducing Narawah and his adherents to a state of entire destitution. With the aid of bribes and inducements the Europeans now had it all in their own hands, information was now sent by the "Nara-mara-yhee" or head chief of the Warnah tribe, near Kittie where Johapow was concealed, adding that we should shew no opposition to their seizing him. On this two white men with a few natives hastened to the spot and found him in

bed, when he was instantly fired at, but the ball missed him and went through his wife's arm; he immediately sprang up and fled outside, when the party fired several shots at him on the spot. On the following day the identical man who struck Captain Hingston his death blow, was pointed out by a native boy, and siezed, but made his escape. This boy not long after, again caught sight of him, and at once pointed his musket which he had in his hand to shoot him, however it missed fire, when he quickly seized one from a European near him and shot the man dead. This boy was on board a ship in Kittie, and seemed an active intelligent lad.

Though the foregoing details relate in a cursory manner the leading occurrences up to the period when Narawah was captured, it may be necessary to revert to the day of the Lambton's arrival, when intelligence of the *Falcon's* wreck and the murders, was communicated to her captain. On hearing it he declared he would immediately revenge the death of Captain Hingston, and by the evidence of a third person, apparently a very respectable lad, who was wrecked in the *Falcon*, and joined the cutter almost immediately after her arrival, the captain had frequently given out that "he must catch a chief to hang for example," and it will also appear by the deposition of another person, who under the orders and directions of the captain had performed a prominent part in the whole affair, saying "*That Narawah should go up to his yard-arm if he caught him.*"

The several accounts conveyed in the depositions best explain themselves, but it is impossible to refrain from remarking on the boldness and high presumptuous tone of authority assumed by the captain, on all occasions. He seems to have taken the General Chief's command in ordering the attacks, disposal of the force, &c., and the implicit obedience apparently paid to him not only by his own crew, but by the whole of the Europeans, shewed that he had inspired a terror amongst them, against the slightest infraction of his commands. Repeated inquiries why Narawah was not shot *at once* on shore, instead of being brought on board the cutter to be hanged in a formal manner? were answered, "That it was the captain orders to bring him on board the cutter *alive* if he was caught; and, therefore, to shoot him was more than any one dared to do." This was an order promulgated among all the white men; moreover, the strictest injunctions were also issued by the captain "To hold out promises to him that no harm was intended him, that he was only to be removed to another island, whither his family would be allowed to accompany him."

A day or two after Johapow's death, Narawah, deserted by his people, and in a helpless condition, was discovered standing alone against a bread-fruit tree in a state of despair. He made no attempt to escape, but said to his captor "I know what you want, shoot me, I am deserted, and hunted everywhere." He was told by the person that "He dared not shoot him,—that he intended him no harm," &c.; in short, proceeded as his orders directed. He prevailed on him to go on board the cutter; but he evinced especial horror at the idea of being taken on board the Avon, as he said "He knew what he might expect at her

captain's hands. He was accordingly taken on board the cutter at 7 P.M., when a "consultation" was held, and a sentence of death signed by three commanders of vessels present.

An anecdote, somewhat ludicrous, but perfectly true, is related of the preceding evening, on a discussion arising as to which of the three vessels he should be hanged on board of. One was quite out of the question, since, from some private enmities, her captain did not dare approach most of another's crew. It therefore remained between the *two* captains of the other vessels to execute him. These two vessels had been in the habit of wearing at their masthead, on alternate days, a sort of broad pendant, (as it was described), each commander assuming on that day the appellation of *Commodore*, the broad pendant being every evening transferred from one to the other. On the day of Narawah's capture, the cutter had worn the "pendant," consequently, it became the other's turn to wear it on the following day. When the question became settled as to the execution taking place on board of her, her captain said, "If I hang him I will wear the pendant." A point which his namesake of the other readily conceded; and the cutter did wear the "pendant" accordingly during the execution.

In order to illustrate further the bold and imperious tone of this captain's arrogated powers and authority, there are other characteristic anecdotes which are corroborated by a host of individuals; he directed all the arrangements as if for a lawful execution, and aped every formality of that awful scene. On Narawah's eyes being bandaged, he was asked by this captain's orders, loudly addressed from abaft to the interpreter, "If he had any thing to say?" or "Any message to send to his family?" To this, his request was, "That he might die by the hands of Narrakin," another chief, which passed unheeded—immediately after which the gun was fired, and he was run up in the smoke.

Nearly all the white men in the island attended the execution, and in order to give more effect to the scene, about twenty were drawn up on board the cutter, with their small arms; and directed to discharge a volley when the signal gun was fired.

Among these were several of the *Falcon's* crew, and all being loaded with ball, two or three of them pointed their muskets at Narawah's body, feeling a desire, as they said, to avenge their captain's death. The captain, at this moment standing aft, directing the proceedings, with his pistols in his belt, and seeing the muskets raised in that direction, on a sudden exclaimed, loudly, "Fire a volley as you are ordered; any man who dares discharge his piece at that, I will this instant put a ball through his head;" at the same moment taking his pistols from his girdle. The muskets were instantly lowered and fired by way of a volley as directed.

Whatever might have been the aggressions of Narawah, or whatever his deserts, there were circumstances occurred shortly before his execution at once revolting and barbarous, and which exhibit in a strong light the cruel and remorseless levity of seamen, when their passions have been let loose, and when they are uncontrolled by discipline or education. During the morning before the hour of his execution, when

a sense of awe, at least, might have been expected from them, several seamen were diverting themselves with putting the rope over their necks, and practising ridiculous gestures by way of mockery on the wretch who was to be hanged, while he lay on the deck before them shrinking with horror and despair. And when the two hangmen stepped on board, a loud roar of laughter arose throughout the vessel, at which, and the sight of his executioners, the wretch swooned away. These were two African blacks belonging to one of the vessels, one of whom I saw, and is now on Ascension. They were dressed up in long red gowns, with very full arms, made up from seamens' red kersey shirts, and closed down the front. They had on long wigs made of canvass, and trimmed with yarn of Manila rope, about four or five inches long, and entirely powdered over with flour, and their faces painted in broad streaks of red, as also their legs and feet. Their devilish appearance had such an effect on Narawah that he swooned away, amidst the laughter of the crew.

The religion, if such it can be called, of the Ascension natives, seems to consist in a general belief and fear of supernatural spirits, and Narawah declared to his constant guard and interpreter, that he thought these figures were the spirits of the murdered people, which the white men had the power to raise before him.

The circumstances attending this execution have now been so fully detailed, that it scarcely seems necessary to allude to them further.

The chief Narawah was hanged on board a cutter, in the harbour of Metallanine, in the island of Ascension, in 1836, under the special and personal superintendence of the master of her, and the body was cut down, and towed on shore by the natives for burial.

THE ESTUARY OF THE RIVER EXE.

THE estuary of the River Exe may be said to be formed at its mouth by Langstone Cliff on the west, and the Beacon (or Bieton) Cliff on the east, bearing nearly E.N.E. and W.S.W. of each other about three miles distant. From a little north of the former a tongue of low land composed of sand hillocks covered with tufted grass commences, stretching across towards the latter, where it terminates in a bluff with a shelving sandy beach, forming at high water the left-hand side of the entrance to Exmouth Bight. This tongue is called the Warren; it was once of considerable extent and abounded with rabbits, but contains now only some 40 or 50 acres not covered by the sea at high-water, spring tides.

The course of the estuary lies nearly north and south, presenting to the eye, when the tide is in, a beautiful expanse of water about five miles in length,, to the town of Topsham, by an average breadth of a mile and a-half, bounded on the west by the highly picturesque park and woodland grounds of the Earl of Devon, the villages of Starcross and Powderham, and the noble turretted castle of Powderham, with Manhead House, the seat of Sir Robert Newman, and Haldon Hill in the rear, and on the

east by the town of Exmouth and village of Limpston, interspersed with gentlemen's seats and park lands, reaching from the gently-sloping and ever-verdant hills to the water's edge. The view from the summit of the Beacon hill at Exmouth, or from Warborough, at the back of Starcross, at high water, is not surpassed by any in the kingdom; but at low water the bed of the river is reduced to a narrow meandering stream scarcely a hundred yards wide, and with only depth sufficient for barges; and the only place where vessels of burthen can now lie afloat at low water, is in the bend of the river between Starcross and Exmouth, called the Bight, where, in the deepest part, are $4\frac{1}{2}$ fathoms, with Langstone Cliff bearing S.W.b.S.

Polwhele, who wrote the history of Devon in 1797, speaking of the Warren, says,—“ Within the memory of man, the Warren consisted of more than 300 acres, it is now scarcely 200, full 50 acres have been washed away within the last twenty years.” At that time the Warren extended out to a rock called the Chickstone, and it is said by tradition, that there once stood a village of that name in its immediate vicinity. At present the Chickstone is an isolated rock with a perch or beam on it, and it lies full half a mile from the Warren bluff, leaving a wide channel at first-quarter flood; and at high-water, with a southerly or S.E. gale offering free ingress to the British Channel waves, which beat upon Exmouth beach with great fury, threatening the destruction of the remaining low tongue of land which forms the starboard or right hand side of the entrance to the harbour, and rolling up home to the walls of the new railroad embankment at Starcross, where, with these winds, at high water, spring tides, the sea breaks over the parapet on to the rails, and renders landing at the steps impracticable.*

Within the last century this tongue of land extended out to the westward more than half a mile beyond the present high-water mark, overlapping the Warren point, and causing the anchorage, which used to be off Starcross, to be quite land-locked and smooth in the heaviest S.E. gales; this part of the point gradually became divided from the present point by two narrow channels wearing through, leaving two islands, called Shilley and Bull-hill, now steep shoals, of the same name, united at low-water, but entirely covered at half-flood. They also abounded in rabbits, and in the memory of many old persons now residing at Exmouth, there was a farm-house upon Shilley island with strawberry-gardens. As late as the summer of 1824, the highest part of Shilley was full six feet above high-water spring-tides, and it then contained about an acre of warren land untouched by the tide, whilst Bull-hill had long before submerged into a shoal, terminating in an abrupt spit, on which a black buoy was placed and still exists, to point out the deep water channel. Great alterations must have taken place within the last sixty or seventy years, for I find in a chart-book with directions, published by Mount and Page, Tower-hill, in 1779, the following directions for Exmouth:—

* The South Devon Railway Company are now constructing a snug boat harbour at Starcross, and raising the parapet three feet higher.

“Before Exmouth you may ride at the south end of the beach, which lyeth before the haven, in 7 or 8 fathoms, so that the rock of Tommas-stones beareth S. and S.b.E. from you; there you will have good ground and lie land-locked in southerly winds. The going into Exmouth is very narrow, having rocks on the east side and a sand on the west side; at low water there are but six or seven feet of water. The going in is so difficult, that it is best to take a pilot who will be always ready to come off to you; being in, there is a place called the Starcross where ships may ride afloat, but they that go to Topsham lie aground at low water, and goods that go to Exon are carried up in lighters.”

I learn, from one of the oldest pilots of Exmouth, that the “Tommas,” or Tombing-stone, was a rock formerly existing off Langstone point. No such rock on the bearing above referred to is now to be seen, but a reef runs out from the point dry for a considerable distance at low-water, shewing that the cliff, which is of rubble-stone, has gradually worn away by the action of the sea. I cannot learn at what period the isolated rock called the Tombing-stone disappeared; there is no such depth as 7 or 8 fathoms now in any part of the haven, and where vessels of 100 tons burthen forty years since used to lie afloat, at low-water, off Starcross, it is now dry.

In examining geologically the cliffs of Langstone, Limpston, and the Beacon, and the vallies of Week (or Shettern), Cofton, Stoplake, and Kenn, we are led to the conclusion that at some remote period the channel of the Exe not only ran close to the Beacon cliff, but also along the western cliffs of the estuary past Langstone cliffs. Though that this could have occurred at one and the same time is hardly probable from the insignificance of the river, and therefore we must suppose that at the time it maintained its original outlet by the Beacon cliff, the channel of the river, in accordance with the general features of all rivers, having their sea reaches at right angles, with the prevailing winds, was on the east side of the estuary, and that the alluvial deposit carried off by the draining of the Exe and its tributary streams, together with the wastage of land, evident by the formation of Limpston cliffs, rushing out and meeting with the British Channel tide of ebb, has been the cause of the Warren in the first instance being formed, beginning at the Conger rocks outside the Beacon cliffs, and gradually, as the accumulation took place, deflecting the course of the stream at its mouth towards the south-west, until it had its outlet on the Langstone cliff side, although it has since returned to nearly its former outlet from causes which I will endeavour to explain.

There is no doubt as to the actual entrance having been on the Langstone side at no very remote period, for I learn from Mr. Samuel Bricknell, an old, honest, and respectable inhabitant of Exmouth, now seventy-four years of age, that his grandmother, Anne Litten, who died in 1805, at the advanced age of ninety, had frequently mentioned to him, that when a girl, she had often walked across from Exmouth beach to the Warren, at low-water, to milk the cows grazing there, and then a channel still existed on the Langstone side, which, in the recollection of the oldest of her family, was used for vessels to enter the port of Starcross. He also states that in the year 1791, a Danish ship loaded with

timber, arrived off, and was boarded by an Exmouth pilot, the captain said "that he was bound to Exon, and intended anchoring in 'Week well' for the night. The pilot, an uncle of Mr. Bricknell's, named Giles Moss, told him that he must run down towards Straight point to enter the harbour by the Beacon cliff side, but the Danish skipper would hardly be persuaded, and produced his chart which pointed out the entrance on the Langstone side, where, upon the cliff was marked "Pilots houses." The chart was brought on shore by Capt. Roberts, of Exmouth, who wished to purchase it, but the owner refused to part with it.

Polwhele says "The mouth of the Exe was formerly much to the south of Exmouth towards Starcross, at that time the bar of sand* was connected with the main land of Exmouth, and on the bar stood Exmouth fort, but since the time that the Exe altered its course, and running towards Exmouth broke through the bar of sand, it has been curious to trace Exmouth fort on the Starcross side, where a cannon ball has been found buried in the sands with several vestiges of a fortification. At Exmouth there has been such an accumulation of sand within the last fifty years, that the mouth of the river has materially varied, and the channel is here so full of sand banks, and so shallow in several places, where it was very deep a short time since, that the pilotage of the river is extremely difficult: on the Starcross side, however, the sands are visibly yielding to the force of the current, particularly near the oil house, which passage, once cleared at the spot, (which is almost effected,) the river would speedily alter its mouth, and resume its old channel. This part of the Warren, in fact, is constantly fritting away."

I can hardly agree with Polwhele that this is likely to take place, for the spot, he alludes to, was actually broken through in the heavy gales of 1824, and boats passed through the Warren to sea, at three-quarter flood, by a breach then made, and which continued open for several weeks; but finally filled up again. The cause of the present channel breaking through the bar of sand, or Warren embankment on the Beacon Cliff side, may be accounted for by the alluvial deposit brought down from Haldon, Mainhead and the adjacent hills and cultivated grounds, by the tributary streams of Week, Coff, Southbrook, and Kenn, all falling into the Exe on the west side in the neighbourhood of Starcross, which must have gradually filled up the main channel, as it became more and more contracted at its mouth by the tidal action before stated, and at the same time created a bend in the eastern bank of the main stream opposite their united confluence, corresponding to the delta of mud and silt thus formed, which bend would naturally be formed between the point of the shoal now known as Bull-hill spit before mentioned, and that part of the Warren forming the entrance to the lake, where, on the mouth of the river at Langstone, getting more contracted, and during some unusually high tide with a southerly gale, and large supply of fresh water in the river, the embankment would yield, at this, the weakest point, and the natural consequence has undoubtedly been the formation of the present tortuous channel, and the entire shutting up the outlets by Langstone.

* Meaning the Warren.

The streams of Kenn, Southbrook, Coff, and Week are now reduced into mere brooks and rivulets by the accumulation of soil, and their estuaries where the tide formerly flowed into the vallies of Kenn, Stoplake, Coston, and Shellern (or Week), at high-water, have been shut up from time to time by walled embankments, enclosing large tracts of valuable land. In building the viaduct for the railway across the estuary of the Coff at Cockwood, no solid ground was found until a depth of 30 feet had been reached below the surface of the mud, proving the vast accumulation of alluvial matter. The bottoms of the vallies enumerated are nearly on a level, now with the river at half flood, and that of Week, (once probably the anchorage ground called Week well,) appears to be below the level of the river at low water, spring tides; whilst Starcross itself stands, says Polwhele, was formerly a bank of sand overflowed at high tides. The south part leading to Cockwood, was called Woolcomb's Island, I presume, from the circumstance of the tide flowing up the estuary of the Coff, and, at high water springs, joining the waters of Southbrook, which must have flowed round by Stoplake at the back of Starcross.

The deepest water in the channel of the river at that time was close to this bank or island; it was called the Horse Shoe; and it was said that the then Lord Courteney built the quay here, and a flight of steps or stairs for the greater facility of communicating with the shipping and crossing over to Exmouth; from which circumstance, no doubt, a village soon grew up called Staircrossing now Starcross. One of the oldest houses in the village is the Ship Inn, to which the sailors resorted when the vessels lay opposite its windows.

This port, up to the last thirty-five years, was the usual anchorage for all large vessels, such as now anchor and discharge their cargoes in the Bight. It is still the crossing or ferry for Exmouth, but where the ships formerly lay, there is now only 3 feet in the deepest part at low water. The filling up of the port at Starcross may be accounted for in a great measure by, in the first place, shutting up the estuary of the Kenn; and, secondly, by the Lords of the Manors allowing ballast to be taken away from the tongue of land, or bar, as Polwhele calls it, extending out from the beacon cliff towards Starcross, which has been, since the change of the outlet or breaking through took place, the cause of this newly formed Exmouth point being converted, in the first instance, into the islands of Shilley and Bull-hill, as stated in the first part of this paper, and of the subsequent destruction of this natural breakwater for Starcross. The inundations and sweeping away of this tongue of land always having taken place near the top of high-water with a spring tide and S.E. gale, carrying the mass of sand over towards Starcross on every occasion, and thus filling up the port. Moreover, since these islands have disappeared, owing to the first half of the ebb-tide not having the tortuous curve to make, which it formerly had in rounding Bull-hill spit, the current, during its greatest force, impinges directly on the Warren point opposite Exmouth, wasting it away, and during severe S.S.E. gales upon a spring-tide (generally accompanied with heavy freshes), when the waters on the top of the tide are pent up with the gale, they rush out with increased violence, and meeting the overwhelming surf which

curves round the back of the Warren, whole acres of the sand hills on these occasions, during the first-quarter ebbs are carried into the sea and swept out, forming an extension of the Pole sands, which have thus gradually grown out to the eastward, keeping pace with the disappearance of the Warren, and increasing the breadth of the bar.

These extraordinary floods generally have occurred about once in three years during the month of November, being occasioned by severe gales from S. to S.E. happening with a spring tide; and unless some steps are presently resorted to, such as forming a breakwater from the Chickstone to the inner Warren point, and wating and groining it at the back, no doubt but the whole of the remaining tongue of land at Exmouth, having stores, boat-houses, building-yards, dwelling-houses, gardens, and lawns upon it, will, in a few years, share the fate of Bull-hill and Shilley, and be washed into the river, filling up the only deep water remaining, notwithstanding the embankment lately erected by Lord Rolle, the proprietor, at a great expense. For, in the late gale of the 20th November last, the sea made a clean breach right over this embankment and the adjoining stone wall, carrying balks of timber, shingle, and sand, into the lawns and gardens, and destroying a part of the solid masonry embankment itself. Had the gale happened at the top of the spring tides on this occasion, the destruction would doubtless have been complete. We shall continue these remarks in our next.

GENEROUS CONDUCT OF FRENCH SEAMEN.—It is with great pleasure that we record instances of generous and disinterested conduct in three cases of French commanders of commercial vessels. Capt. Cousin, of the *Roland*, belonging to Havre, brought to that port some months ago, from the Gaboon river, a British sailor, who had been found in irons in a negro village on the African coast, and who was gradually sinking under his ill treatment. By the unceasing attentions of his French protectors, he was restored to health; nor would Capt. Cousin, when he delivered him to the Consul at Havre. receive any compensation for the subsistence of the man, or for the services he had rendered him.

The next case is that of Capt. Troude, of the *Courier du Moule*, also of Havre, who picked up, in the West Indian Seas, the master and crew of the British sloop, *Sam Slick*, who were on the point of perishing; and after clothing, subsisting, and bringing them to Havre, also declined to receive any compensation from Her Majesty's Consul. The other is the case of Capt. Guignot, of the French ship *Andelle*, who, in a very tempestuous sea, and after very great exertions, rescued from destruction the master and crew of the British brig *Rose*, consisting of nine persons; and having safely delivered them to Her Majesty's Consul at Havre, declined to receive any compensation for his services, and for subsisting them whilst on board his vessel.

The fine conduct of these French commanders was, we understand, immediately brought under the notice of the Lords Commissioners of the Admiralty, who with promptitude acknowledged the high sense they entertained of the conduct of the different parties.

HARBOURS OF REFUGE.

Royal Harbour, Ramsgate, January, 1847.

SIR,—As occasional strictures on the state and utility of Harbours of Refuge appear in the columns of the periodical press, it would seem to

be like allowing judgment to go by *default*, to remain entirely quiescent on the subject. In the year 1837, I published and circulated a pamphlet "*On the Necessity for Harbours of Refuge in the Narrow Seas*," addressed to the merchants, shipowners, and underwriters of Great Britain, which was well received, and the appalling record of weekly casualties in the *Shipping and Mercantile Gazette*, is a *continuous proof* that the arguments assumed in that pamphlet were generally correct. The insertion of statistics exhibited from official documents for so long a period as thirty years, would be too much to ask, but I give an *abstract* with *additional results*, for the period of nine years since elapsed, in the hope that the public may see in your pages that there is a *Harbour of Refuge*, whose officers feel that *they have the means*, and the harbour itself the *capability*, of rendering incalculable service to the maritime interests of the country. The royal harbour of Ramsgate is strictly a *Harbour of Refuge*. It has neither foreign nor home trade sufficient to yield it comparative support. It was constructed for the express purpose of *alleviating* the awful loss of *life and property* upon this particular line of coast; and, therefore, we will confine ourselves to that feature only.

Extract from Statistics in 1837.—From 1807 to a corresponding date in 1837, a period of thirty years, there appears on the Registry of Ramsgate Harbour, 38,257 sail of vessels amounting to 3,451,181 tons. The majority of these vessels were sheltered on their outward bound voyages, and the average value of such was estimated at about £7. per ton, or about half the cost of new vessels. This gives £24,149,748 sterling, without the cargoes; and from a close estimate of the value of outward bound fleets generally, and a positive report upon 308 sail sheltered at the same time, the inference upon the whole number was considered a close approximation, which gave the value of the cargoes at £84,780,000, making together £108,929,748, the property of the *merchant* and *shipowner*, and the *risk of the underwriters*, in that series of years. But in 1837 this harbour had given shelter to considerable fleets during a period of seventy years; and from the nature of the registry examined, it may be stated (without fear of contradiction) that property amounting to more than *two hundred millions sterling* had been sheltered during that period.

In the before mentioned pamphlet may be found a detailed list of the *extreme distress* of 101 sail of vessels, finding relief in their necessities in a very short but stormy season. In the nine years which have elapsed *since its publication*, an additional 13,225 sail, measuring 1,209,469 tons are registered, 1477 sail of which were under similar circumstances from collision at sea—derelict—brought off the sands—dismasted—sails blown away—loss of anchors and cables—leaky, and all and of every the varied ills to which such property is exposed. Let other establishments *answer for themselves*, I offer *no further comments*, but have the honor to remain

Yours, &c.,

K. B. MARTIN, *Harbour Master.*

To the Editor N.M.

An Abstract of the Shipping Lists of the Royal Harbour of Ramsgate, during a period of Thirty-Nine Years, bearing date the 24th June, 1807, to the 24th June, 1846, inclusive,—extracted from the said Official Documents.—*K. B. Martin, Harbour Master.*

Date and Year from to		Date and Year.		No. of Vessels.		United Tonnage.	
1	June 24th	1807	June 24th	1808	...	842	75,933
2	"	1808	"	1809	...	924	83,327
3	"	1809	"	1810	...	1188	107,136
4	"	1810	"	1811	...	972	87,656
5	"	1811	"	1812	...	1085	97,846
6	"	1812	"	1813	...	851	76,744
7	"	1813	"	1814	...	816	73,587
8	"	1814	"	1815	...	1496	134,911
9	"	1815	"	1816	...	1248	112,546
10	"	1816	"	1817	...	1200	108,217
11	"	1817	"	1818	...	1533	138,247
12	"	1818	"	1819	...	1215	109,579
13	"	1819	"	1820	...	1073	96,764
14	"	1820	"	1821	...	1424	128,367
15	"	1821	"	1822	...	1568	141,393
16	"	1822	"	1823	...	1432	129,139
17	"	1823	"	1824	...	1470	133,166
18	"	1824	"	1825	...	1260	113,628
19	"	1825	"	1826	...	1350	121,744
20	"	1826	"	1827	...	1110	100,000
21	"	1827	"	1828	...	1413	127,425
22	"	1828	"	1829	...	1195	107,764
23	"	1829	"	1830	...	1115	100,551
24	"	1830	"	1831	...	1351	121,835
25	"	1831	"	1832	...	1530	138,976
26	"	1832	"	1833	...	1470	132,566
27	"	1833	"	1834	...	1511	136,263
28	"	1834	"	1835	...	1440	129,860
29	"	1835	"	1836	...	1581	143,263
30	"	1836	"	1837	...	1594	143,748

During 30 years, Total Number sheltered ... 38257 ... 3,451,181

Estimated value of these ships £24,149,748 sterling, at £7 per Ton.
 Estimated value of cargoes..... 84,780,000 sterling, on fair average.

Total amount sheltered... £108,929,748 sterling.

31	"	1837	"	—	1838	...	1802	122,981
32	"	1838	"	—	1839	...	1425	129,432
33	"	1839	"	—	1840	...	1426	128,146
34	"	1840	"	—	1841	...	1643	151,364
35	"	1841	"	—	1842	...	1652	152,394
36	"	1842	"	—	1843	...	1639	156,614
37	"	1843	"	—	1844	...	1364	126,989
38	"	1844	"	—	1845	...	1471	127,523
39	"	1845	"	—	1846	...	1303	114,036

In 9 years 13,225 ... 1,209,469
 In previous table 38,257 ... 3,451,181

In 39 years past 51,482 ... 4,660,550

Value of vessels only without estimated cargoes £32,623,850 in 39 years since 1807.

GREAT CIRCLE SAILING.

PRACTICAL navigation consists of three divisions—the mathematical—the geographical—and the meteorological. The mathematical division of navigation regards this earth as a sphere, and teaches the mariner how to direct his course so as to sail from one point on its surface to any other, to calculate his progress, and to ascertain his ship's position upon it. The geographical division teaches the extent and position of oceans and seas, continents, islands, capes, and peninsulas; of rocks, reefs, and shoals; whilst the meteorological division instructs him in all circumstances in connection with winds variable, periodical or otherwise. It points out the regions of storms and of calms, the variation of climates and those parts of the earth that are inaccessible or dangerous from being the regions of ice. The knowledge of the nature of oceanic* currents, and of the compass and its variation, may perhaps be included in either of the two last mentioned divisions of navigation. Each of these is equally useful—each requires a full consideration in order to enable the mariner to navigate the ocean with safety. Although, however, the track that the mariner resolves ultimately to adopt must be modified by each of the other departments of navigation, still the foundation of his course must or ought to be the shortest line of connection drawn on the earth's surface between the places of his departure and his destination. Although it may be desirable from geographical consideration to divert this line, so as to avoid islands or rocks, or from meteorological inducements, to obtain more favourable winds or the like, still these important departments of navigation cannot possibly form the foundation of his course, but are of use only to modify that track which the knowledge of the mathematical properties of the sphere is alone calculated to enable him to trace out.

The shortest course that can possibly be drawn between two points on the surface of the earth is that of a Great Circle. The nature of this course will be best understood by observing a thread stretched tightly over the surface of an artificial globe. If we select two places both on the parallel of 30° of latitude, and distant from each other 90° of longitude, we shall perceive clearly that the thread will not trace the east and west line which is represented on the globe by the circle of the 30^{th} parallel of latitude, but will approach nearer to the pole than the latitude of the places of departure and destination; and the ships that sail on this track must attain the latitude of about 39° in the progress of the voyage. It is termed a Great Circle, because, it is the largest that can be drawn on the earth's surface.

A right line is the shortest distance that can be drawn between point and point, but a right line cannot be projected on the surface of a globe, but the line which is a portion of the largest circle that can be drawn is

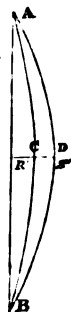
* Oceanic currents may also be connected with the action of the winds and the nature of the magnetic needle with the electrical condition, and thus be connected with the meteorological division of navigation, or our knowledge of the phenomena may be referred to the results of geographical observation.

the shortest on such surface, because it exceeds in length such right line (which is its chord,) to a less degree than the portion of any smaller circle would having a chord of equal length.* The rhumb line is used in connection with the small circles which constitute parallels of latitude. Thus, if we sail east or west, we sail on a course the radius of which is the cosine of the latitude always (except on the equator), less than the radius of the earth. To sail west or east is, therefore, to sail on the arc of a smaller circle than may be traced on the surface of the globe. If we sail on a course oblique to the parallel of latitude of the ship's place, we describe a rhumb line which is a spiral on the earth's surface involving it infinitely in approaching the pole which it never reaches. The advantage arising from adopting the course of a small circle or a parallel of latitude or that of a rhumb line, is, that the course from one point on the globe's surface to another, as shewn by the compass, (corrected for variation,) is always the same throughout the voyage, provided such course could be maintained without deviation. Thus, in sailing from one place to another, on the same latitude during the whole voyage, the course would be due east or west. So also two places situate on the S.W. and N.E. rhumb, are taken throughout the voyage to be S.W. and N.E. of each other. Also the bearings of two places, by Mercator's sailing, are always the supplement of each other. Thus, if A bears west of B, then B will be east of A, east being the supplement of west. If A bears S.W. of B, then B will be regarded as being N.E. of A, N.E. being the supplement of S.W. But this is not the case in Great Circle Sailing. A may be east of B, and B N.W. of A; and, in fact, no two places can have their true angles of position on the earth's surface, the supplements of each other, except they are both situated on the equator, or on the same meridian. The true angle of position on the surface of the globe of Cat Island in the West Indies, from the Lizard is due west, whilst the true bearing of the Lizard from Cat Island is N.E., these bearings being four points less than the supplement of each other.

The cause of this apparent anomaly will be obvious if we consider the true nature of the angle indicated by the compass. For instance, east and west are terms referring to points of the horizon of any place being at right angles to the meridian, or north and south line of such place. Now, in Mercator's projection, all the meridians being parallel to each other, any track between two points that intersects one of the meridians

* Let A and B represent any two points. The right line AB is the shortest distance between A and B. Let RR' represent the radius of a globe on the surface of which the points A and B are situated, then the arc ACB will be the shortest distance on the surface of such globe, because the radius of ACB and of such globe are both RR', and no curve

B S
of larger radius than the globe can be drawn on such globe; but all other circles than such great circles, must have a smaller radius than the globe on which they are drawn, the arc of which is a greater distance from A to B. ADB being longer than ACB, because s's', the radius of ADC is less than RR', the radius of the globe on which it is drawn.



at any angle, must, if carried out, intersect all the other meridians at the same angle. But meridians are not parallel on the surface of the globe, but all meet at various angles at the poles, and, consequently, if we observe a track between two places, by drawing a thread tightly over the surface of an artificial globe, we shall perceive that each meridian is intersected by the thread at a different angle, consequently, we should alter our course in sailing over such track at each meridian we pass.

The meridians of the Lizard and of Cat Island may be thus regarded as being oblique to each other 45° , consequently, a line drawn through the zenith of both these places will intersect the meridian of the Lizard at the angle of 90° , whilst the same line will cut the meridian of Cat Island at only 45° from the north of its horizon.* The Great Circle course is the position in which we see a body on the earth's surface, or a point which is vertical over such as the mast of a vessel when the hull is hidden from our view by the spherical form of the earth's surface, or the top of a mountain when the base is below the horizon, or a heavenly body when vertical at the place of our destination. At Cat Island (*a*) *Aries* is vertical at about seven hours Greenwich sidereal time. If on any night at that hour from the Lizard we observe its bearing, we shall find it situated due west. So also (*a*) *Perseus*, is about vertical at the Lizard at 3h. 33m. Greenwich sidereal time, it will then be visible in the north-east horizon of Cat Island. If we were to leave the Lizard on a voyage to Cat Island guided by (*a*) *Aries*, we should find that as we proceeded it would alter its compass bearings. Having 15° of longitude, we should find it W.b.S. instead of west as at the Lizard. A further progress of 15° of longitude would alter the position of the star as regards the horizon of the ship's place to W.S.W. If also we were then to observe (*a*) *Perseus* at the time it is vertical at the Lizard, its position would be exactly at the opposite point of the horizon, that is to say, E.N.E. We should arrive at Cat Island by a course S.W., (*a*) *Perseus* then bearing at the hour named N.E. Thus, we perceive our track had been direct, although our horizon had changed its position as indicated by the compass.

Early in the progress of navigation the principles of Great Circle Sailing were understood. In 1495, Sebastian Cabot projected a voyage on spherical principles, to which he thus refers in his discourse to Galeacius Butrigarius, the Pope's legate in Spain:—"Understanding by reason of the sphere that if I should sail by the way of the N.W., I should, by a shorter track, come into India," &c.—[*Hackluit.*] This was previously to the publication of the first book on the subject, of which we have any knowledge, which was written in 1537, by Peter Nunez, or Nonius, in the Portuguese language, in which he observes that, "the direct course of a ship is always on the arc of a great circle, whence the angle with the meridian will continually change; all that the steersman can do being to correct those deviations when they appear sensible."

In 1545, a publication on practical navigation, by Peter de Medina, was written in the Spanish language, and was soon translated into the

* See Diagrams, p. 145.

Italian, French, and Flemish languages. All his rules were, however, founded on plane trigonometry, and consequently very erroneous. This gave rise to two other publications, the first by Marten Cortee, also a Spaniard, in which the errors of treating the earth as a plane were pointed out, and the rudiments of the rules of Great Circle Sailing were laid down, and contained also the table of latitudes and departure which are still employed in connection with the science of navigation. In 1561, this work was translated into the English language, and for a long period was in great repute with British seamen, being the first English system.

In 1581, Michael Coignet, a native of Antwerp, published a treatise also, in opposition to the system of Medina. In this he showed that as the rhumbs are spirals, making endless revolutions round the poles, numerous errors must arise from their being represented by straight lines on sea charts.

In 1585, an excellent work was published by Roderick Zamarano. He attempted to introduce globes into use of an improved kind, and of a much larger size than those formerly made in conducting the practice of navigation. But the inconvenience of using them on board operated to effect their absolute disuse, and plane charts continued to be used although the errors he pointed out were generally admitted.

This brings us down to the period when the system of navigation now in general use was first established, a period which most certainly forms the most important epoch in the history of navigation. Gerard Mercator was the first to found this system. His method consists in representing on charts, by parallel straight lines, the meridians as well as the parallels of latitude; and by gradually augmenting both in the same proportion, the rhumbs, which are curves, become also converted into straight lines. Consequently, any straight line drawn on such a chart, between two places, represents correctly the rhumb that connects these two places on the earth's surface, intersecting each intermediate meridian at the same angle. But though, in 1509, Mercator published a universal map, constructed in this manner, it does not appear that he was acquainted with the principles on which it was founded; and it is now generally believed that the true theory of what is called Mercator's chart, was first discovered by an Englishman, Edward Wright. Thus, for some time after the appearance of Mercator's map, it was not adopted, being thought entirely useless. About 1592, however, its utility was perceived, and seven years after this period, Wright published "The Correction of Certain Errors in Navigation." Wright not only pointed out how a ship's place and course might be correctly shown on the chart, but also laid down the rules by which the same might be accurately calculated. Wright's table of latitude is that which is now in use known by the name of "Meridional Parts."

Fifteen years later in the history of navigation, gives us the discovery of Raphe Handson, which is the method now used by sailors, commonly called the middle latitude sailing. From this period to the present century no important change has taken place in this department of navigation.

Previously to the discoveries of Wright we find that Great Circle Sailing had obtained the preference over Rhumb Sailing; but during the two centuries which followed these discoveries, the latter had most generally superseded the former. Efforts are, however, now being made again to establish Great Circle Sailing. It has become, therefore, an interesting enquiry to investigate into the causes which first led to its being superseded by Mercator's method, and into the changes which have since transpired in the progress of navigation, that lead us to promote its re-adoption. These may be generalized under three heads:—

First.—The facilities now afforded for ascertaining longitude.

Secondly.—The general increase in the extent of modern voyages.

And *thirdly* the facilities now afforded for the calculation of the data for Great Circle Sailing.

I. The basis on which the calculations connected with Great Circle Sailing are founded is longitude. If we desire to lay down any track on a Great Circle, between two places, we calculate the latitudes, courses, and distances for each third or fifth degree of longitude. Or, supposing we were practically to adopt the method to which we have alluded, that of sailing in the direction of the azimuth of the point in the heavens, vertical of the place of our destination, the sidereal time of Greenwich, or of some other known meridian is necessary, and this is equivalent to the determination of longitude.

The practical solution of this problem may be said to be an improvement of the present century. Although Harrison in 1767 obtained the Parliamentary reward for chronometrically determining longitude; and Maskelyne at about the same period, edited for the benefit of all mariners, the *Lunar Tables* of Mayer, still the former method was not generally rendered available till it had undergone the improvements of Le Roy, Brockbanks, Arnold, and Earnshaw; and the lunar method during the past century was in very few instances practised at sea. Without the means of determining longitude being available to the mariner, rhumb sailing has advantages over that of the Great Circle, since if the given course could be maintained without deviation, the compass, corrected for variation, would be the only necessary guide, since it would direct the mariner throughout the voyage to the rhumb, by which he would reach his port. Although it had been proved that the shorter track was on the arc of a Great Circle, this, to the mariner without longitude is no other than a theory useless altogether in practical navigation. The principles of rhumb sailing were even too exact for him to carry out in practice.

The method in general use was to steer the vessel on a rhumb that would bring the ship to the latitude of her destination, when she should be about midway, and then to finish the voyage by sailing on the parallel of the place of his arrival. Thus the course agreed upon by the captains and masters of Sir Humphrey Gilbert's fleet in sailing to Newfoundland in 1583, was to begin the course from Scilly by sailing W.S.W. to the 46° of latitude, and "do your endeavour to keep in the height of 46 degrees so near as you possibly can, because Cape Race

lieth about that height." This practice of navigation has even been carried down to the present century, and is in fact the safest, in practice, for the mariner who is not possessed of the means of determining long. at sea. But in the present day to such perfection are both the chronometric and lunar methods brought, that "it* has been observed by a gentleman of distinguished nautical skill, whose situation imposes on him the duty of examining the logs of all ships belonging to one of the first trading companies in the world, that longitudes of ships are often determined more exactly than their latitudes." The necessity therefore of ascertaining longitude in connection with Great Circle Sailing is no longer a barrier to the application of the correct principles, on which it is founded, to practical purposes.

II. The great value of Great Circle Sailing is experienced in connection with the navigation between lands occupying distant meridians. If employed in voyages between places distant only 20° of long. the error is scarcely felt, the course being within half a point, and the distance saved but little more than one mile. But should the difference of long. amount to 80° , and we adopt the rhumb course, the error would be two points; and the difference of distance would be 98 miles. But should we have to perform a voyage over 140° of long. this error would be increased to such an extent that if guided by our chart we should commit an error at starting of 5 points and increase the length of the voyage 738 miles. The above statements are made on the supposition that the places referred to were on the 30th parallel of latitude.

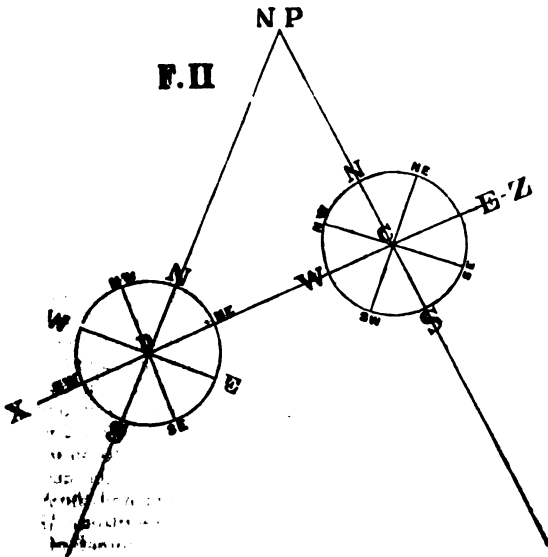
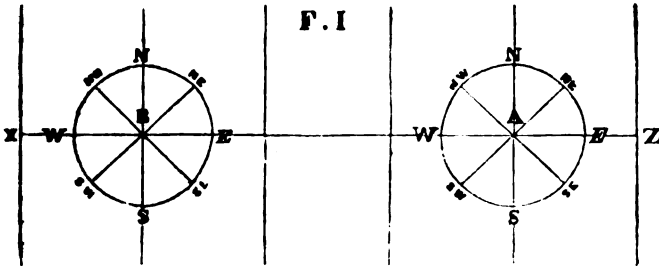
The following table shews the superiority of Great Circle Sailing under various circumstances.

Difference of Longitude of ship's place and destination.	Difference between the true angle of position and the parallel course.						No. of Miles which parallel sailing exceeds that of the Great Circle.		
	Latitude 20°		Latitude 30°		Latitude 40°		Lat. 20°	Lat. 30°	Lat. 40°
Degrees.	o	'	o	'	o	'	Miles.	Miles.	Miles.
20	3	30	5	2	6	30	1	13	3
40	7	10	10	17	13	20	6	10	16
60	10	10	15	45	20	20	22	38	56
80	16	0	22	25	28	17	52	98	136
100	22	9	30	45	37	25	120	208	284
120	30	3	40	50	48	0	230	406	528
140	43	7	53	55	60	23	456	738	906

The extension of commerce and consequently that of our naval operations have given a practical importance to the theory of Great Circle Sailing, which, in the days of Wright, could be of comparatively little value to the navigator. The Pacific is now more frequently traversed than the Atlantic had been at that period, and the power of the British navy then scarcely known beyond the limits of Europe has now been felt even by the Celestial Empire. It is now desirable that the naval forces of Great Britain in the Indian Seas should be enabled to co-operate

* London Encyclopædia.

if required, with our fleet on the Western Coast of America; and it is possible, that important interests may hereafter depend on the expedition with which such a union of forces could be effected. It is, therefore, of great importance that those whose duty it is to superintend the navigation of ships belonging to the British navy, should make themselves acquainted with every means that science can afford that tends to shorten the period of such voyages.



Let Fig. I. represent meridians drawn on a Mercator's chart parallel to each other. Let A and B represent the horizons of two distant places with the eight principal points of the compass shewn; it will be seen that the line x z cuts both horizons at the same angle, viz. E. and W. Fig. II. represents two meridians meeting at the pole NP at the angle 45°, consequently, the line x z, which cuts the horizon c at the E. and W. points, cuts the horizon d at S.W. and N.E.

CONSERVANCY OF THE THAMES

THE relation assumed by the City of London, with reference to the Thames and the people of England, is not unlike the relation which formerly existed between the Dey of Algiers and the Barbary States, with reference to the Mediterranean, and the merchants of the world. Our readers may recollect, that some years back no ship was permitted to navigate the Mediterranean by the Barbary pirates, unless by the leave and license of these lawless rovers, which was purchased for each voyage at the price of £2. 10s., and was issued by the Admiralty under the designation of a Mediterranean pass. The analogy is remarkable in many respects. The Mediterranean flowed near the dominions of his sable majesty,—the Thames washes the shores of the City of London. His majesty of Algiers said to the nations of the earth,—“You shall not make use of the waters of the Mediterranean, unless by my license, and that license I will grant you on payment of a sum of money.” The City of London uses the same language. “You shall not,” it says, “avail yourself of the Thames, unless by my leave, but that leave I will grant upon condition of your paying for it.” The analogy does not even stop here. No one was ever bold enough to assert that the Mediterranean was the property of the Dey of Algiers, and no one, we believe, will be sufficiently hardy to affirm that the river Thames is the property of the City of London; yet both these powers have been permitted through a lengthened course of time, to levy large imposts, the one upon the world, the other upon his fellow subjects, with impunity.

Like all great and crying evils, there was at last a day of reckoning, merchants were pillaged, the rights of nations were outraged, insult and injury accumulated until the destruction of despotism opened the passage of the Mediterranean to the world—hurled the despot from his throne, annihilated the insolent marauders against the rights of man, and left the record of tyranny to fill half a page in the history of the oppressors of mankind.

The dominion of the City of London over the Thames, has not arrived at this consummation; up to the period however when its career was stopped by an information of the Attorney General, calling for an account of the sums of money appropriated by the City of London, for granting licenses for use of the Thames, the City realised a sum annually averaging from £1000 to £1200, and this upon the same title as that claimed by the pirates of Barbary—the advantage, however, being in favour of the marauders of Algiers, for though the latter exacted what they had no right to demand, their victims were protected against farther exaction; whilst in the case of the City, the license which it granted amounted simply to moonshine. What the City of London permitted to be done was immediately amenable to the common law of England—at most, it simply amounted to an undertaking on the part of the city, that it would not interfere between the licensed offender and the public, but any one else might, who would; and the license consequently was not worth the paper upon which it was written. To shew that we have neither exaggerated nor mis-stated the conduct of the City, we extract a portion of the evidence of the Solicitor to the Admiralty, given before the Select Committee on the Port of London, in 1836. He says “It is notorious that under colour of a charter, fines and rents have been obtained by the City from all who would submit to pay them to make wharfs and embankments on the shores of the river, without regard to the main part of its duty, namely, the conservancy of the navigation, and the prevention of works tending, by their want of uniformity with the rest of the shore, to produce banks and shoals in the bed of the river. That such

projecting wharfs and embankments exist, and have been permitted to be formed, is obvious to every one passing down the river; and their mischievous effects, by producing banks and shoals, can be proved by Capt. Beaufort, the hydrographer of the Admiralty, and Capt. Bullock, the officer appointed by the Admiralty to survey the river." He continues—"A very glaring instance of the abuse of the charter in this respect occurred in the year 1811. Anthony Peck and others were indicted, on the prosecution of the City of London, for a nuisance in making a wharf and emankment on the shore of the river at Gravesend, and the trial came on before Lord Ellenborough and a special jury, at the summer assizes of that year, at Maidstone. The nuisance was proved by the City officers, and the answer of the defendants to the charge was, that the City had offered to allow the works to proceed, provided the defendants would pay them a rent for it, which was refused, and the prosecution was the result of that refusal. The judge and jury thought this a sufficient answer, and the defendants were acquitted."

In 1819, the City of London granted a license to Lord Grosvenor, to erect a wharf at Millbank, for which license his Lordship paid the City the sum of £400, and entered into a covenant for the further payment of £4 4s. a-year rent. The wharf was erected—but mark the consequence—a few watermen indicted the offending parties; the license of the City was brought into court by Lord Grosvenor, but, alas!—to be laughed at; and the Lord Chief Justice, Lord Tenterden, said, in delivering judgment, "They (the City) have no right to take a fine from a person who makes an erection for the benefit of the public. A great City to take a fine for that which is an advantage to the public, is a thing unheard of. If the erection be a nuisance, no protection can be conferred by a body receiving a pecuniary remuneration for permitting the erection." Another instance of the erection of an obstruction by the license of the City, purchased at the price of money, was the wharf at Garden Stairs, in which case Sir Richard Dobson and others, who confided in the protection of the City, must have experienced a very serious loss. Their wharf was destroyed by a judgment of the Court of Queen's Bench, to say nothing of the expense of defending a long and expensive series of litigation. We could multiply instances of these sins of commission by the City, almost *ad infinitum*; let us now inquire whether their duties involve aught that has been omitted. We have in another place said that it is the duty of the City to remove all obstructions in the Thames. We have shewn that they received money for permitting such obstructions to be erected, and have, in fact, themselves erected the most notorious obstruction which now impedes the navigation of the river at Blackfriars' Bridge. Its conservancy duties involve not only the removal of all obstructions of navigation, but also the care and preservation of the fish. How has this latter duty been performed? Not a fish is to be found within the waters which flow through the precincts of the City—the element is poisoned—a thousand mouths breathing fever and pestilence, vomit into the Thames the germs of disease and death—the poisonous fluid not only kills the fish, but as it forms the main source of supply to the inhabitants of London, it consequently disseminates disease and suffering among thousands. These are only a few of the evils which grow out of the present system—we have not yet exhausted the catalogue, but even did it terminate here, we confidently affirm that such a state of things should not be permitted to exist a day;—much less ought the City to be invested with greater power of inflicting mischief than it already possesses.—*Nautical Standard*.

EXAMINATION OF MASTERS AND MATES IN THE MERCHANT SERVICE.

WE had almost begun to despair of having it in our power to lay before our readers another list of masters and mates, who, having undergone an examination upon the voluntary system, have obtained certificates of qualification for the several classes for which they have been respectively found entitled. The last list appeared in our twelfth number, vol. xv., for the month of December, wherein we gave a summary of the masters and mates who had been examined and found qualified at each port since the commencement of the system. The list we now present, comprises the names of all persons who have proved their qualifications since the 12th of Oct. last. This has just been printed under the authority of the Board of Trade, and reprinted and extensively circulated under the direction of the Committee of the Affairs of Lloyd's Register Book. It will be seen that in this list there are the names of some officers who possess the highest attainments contemplated by the regulations of the Board of Trade; and although we should have been glad to have seen the distinction of First Class *extra* as applicable to some of the talented masters who have been examined at the Trinity House, London, yet it would seem that it is at Liverpool only, notwithstanding the tardiness hitherto observable at that port, that any officers possessing such high claims to distinction, have been found. We have no reason to doubt the competency of the "Board of Examiners" at Liverpool, and all we hope is, that in the discharge of the duty confided to them, they have acted with strict justice and impartiality, and have not been governed in any degree by local influence. We take some credit to ourselves for having roused our Liverpool friends from the state of lethargy into which there was reason to believe they had fallen; and it is farthest from our intention, in making the foregoing remarks, now to quarrel with them; but we know the present list, so far as regards Liverpool, has been the subject of much discussion in the port of London.

The list exhibits the number of Masters who have qualified for each class as against the same expressed, viz. :—

1st Class, extra,	9
1st Class	11
2nd Class	20
3rd Class	11
Total,	51

There are only three Mates, of whom two have been found qualified for the first class, and one for the second. It is worthy of remark, and particularly of the attention of shipowners, that most of these officers, indeed, nearly all are in the prime of life. This is a striking feature in the list, and a good foreboding for the future. We sincerely hope, therefore, that these deserving men will soon find profitable employment. We are persuaded that if others, feeling as they should do, a just confidence in their own abilities, would come forward at such early period of life, the Government would soon feel it their duty to carry out this plan in the most effective manner possible, by only employing those transports and other vessels wanted for the public service, which are commanded by qualified masters. We do not find that any return has been made from any other port than Liverpool, except in two instances from Great Yarmouth. We feel, therefore, the stronger confidence in the truth of the remarks which we deemed it our duty to make in December last. In respect to Glasgow and certain other ports then named, we may add, that we are sorry that it so turns out.

A List of all the Masters and Mates in the Merchant Service who have vo-

luntarily passed an examination, and obtained Certificates of Qualification for the Class against each assigned, under the Regulations issued by the Board of Trade, since the 12th October, 1846.

MASTERS.

Date.	Name of Party who has received the Certificate.	Class of Certificate	Age.	Present or last previous Services.	Number of Register Tickets.	Name of Examining Board.
1846.						
Oct. 15	Geo. Millward	2nd	28	Malta, 240 tons	.....	Ma. Bd. S. Shields
" 15	J. Nicholson	3rd	39	Star, 211 tons	.....	Ma. Bd. S. Shields
" 13	W. Duncan	1st	25	Glammis Castle, 342 tons	.....	Tr. Ho. Dundee
" 19	W. Hederstedt	3rd	29	Oriental, 1673 tons (as <i>Quarter Master</i>)	262437	Tr. Ho. London
" 21	W. Heddle	2nd	30	Archipelago, 281 tons (as <i>Mate</i>)	86860	Ma. Bd. S. Shields
" 28	H. A. Herbert	2nd	36	Lee, 120 tons (as <i>Mate</i>)	327668	Tr. Ho. London
" 28	N. K. Narracott	2nd	34	Eweretta, 356 tons (as <i>Mate</i>)	32626	Tr. Ho. London
" 28	Richard Leeds	3rd	32	Perseverance 270 tons (as <i>Mate</i>)	184605	Ma. Bd. S. Shields
" 30	E. L. Ditcham	1st	23	Dahlia, 100 tons	.....	Tr. Ho. London
Nov. 3	Charles Irvine	2nd	25	Isle of Wight, 212 tons (as <i>Mate</i>)	31319	Tr. Ho. London
" 4	William Reid	1st	23	.....	.....	Tr. Ho. Leith
" 7	L. Henry	3rd	23	Placidia, 198 tons	.....	Ma. Bd. S. Shields
" 12	J. F. Trivett	1st	35	Iris, 230 tons	.....	Tr. Ho. London
" 17	C. H. E. Judkins	1st	35	Cambria, 1400 tons	.....	Bd. Ex. Liverpool
" 17	John Thomas	1st	26	Elizabeth Grange, 350 tons (as <i>Chief Mate</i>)	255905	Bd. Ex. Liverpool
" 20	W. H. P. Holt	3rd	26	Jim Crow, 117 tons (as <i>Mate</i>)	40992	Tr. H. Gt. Yrmth
" 19	W. Hooper	3rd	27	Jane Shirrefs, 240 tons	.....	Ma. Bd. S. Shields
" 23	W. Staincup	2nd	31	Onyx, 278 tons (late <i>Mate</i>)	.....	Ma. Bd. S. Shields
" 24	Thomas Bruce	3rd	26	Dione, 112 tons	.....	Ma. Bd. S. Shields
" 27	W. T. Robinson	2nd	23	Raby Castle, 228 tons	.....	Ma. Bd. S. Shields
" 28	W. O. Campbell	1st	38	Cambria, 1400 tons (as <i>Mate</i>)	344117	Bd. Ex. Liverpool
" 28	A. Ryrie	1st	33	Hibernia, 1400 tons	.....	Bd. Ex. Liverpool
Dec. 10	Harry Miles	1st	25	Broom, 976 tons (as <i>Mate</i>)	17729	Tr. Ho. London
" 10	S. L. Wilkinson	2nd	29	Briton, 240 tons	15688	Tr. Ho. London
" 10	T. Thomas	3rd	39	Salus, 301 tons (as <i>Mate</i>)	.....	Ma. Bd. S. Shields
" 17	J. B. Booth	1st	32	Britannia, 1200 tons (as <i>Mate</i>)	323959	Tr. Ho. London
" 17	John Plunton	2nd	23	Rowena, 259 tons (as <i>Chief Mate</i>)	95372	Ma. Bd. S. Shields
" 16	Thomas Stonor	2nd	25	Sybria, 171 tons (as <i>Mate</i>)	175096	Tr. Ho. Dundee
" 22	Michael Lawson	2nd	25	Aid, 264 tons (as <i>Mate</i>)	.....	Ma. Bd. S. Shields
" 22	E. Swinton	2nd	31	Reliance 605 tons	.....	Tr. Ho. London

1846.	Dec. 29	James Stone	1st	31	Hibernia, 1400 tons	108019	Bd. Ex. Liverpool
			extr		(as Mate)		
	" 30	E. T. Sturdee	1st	30	Tay, 1856 tons		Tr. Ho. Pts Brnch
	" 30	T. Stowell	2nd	23	Auspicious, 245 tons	138650	Ma. Bd. S. Shields
					(as Mate)		
	" 30	A. Wilson	1st	24	Avon, 1800 tons	343240	Tr. Ho. Pts. Brnch
					(as Second Officer)		
1847	Jan. 2	D. Badlington	3rd	31	Ann's Resolution, 157 tons		Ma. Bd. S. Shields
	" 4	C. Gribble	2nd	30	Ocean Queen, 737 tons	32828	Tr. Ho London
					(as Mate)		
	" 8	R. Heard	1st	30	William, 181 tons		Tr. Ho. Gt. Yrmth
	" 7	P. Jameson	2nd	32	John's 254 tons		Ma. Bd. S. Shields
					(as Mate)		
	" 7	John Carter	3rd	44	Wensleydale, 245 tons		Ma. Bd. S. Shields
	" 9	W. Harrison	1st	34	Acadia, 1400 tons		Bd. Ex. Liverpool
			extr				
	" 9	J. R. Giffney	1st	34	Angerona, 731 tons		Bd. Ex. Liverpool
			extr				
	" 9	George Little	1st	30	Britannia, 400 tons	276438	Bd. Ex. Liverpool
			extr		(as Second Mate)		
	" 8	W. M. Dunn	2nd				Tr. Ho. Newc stle
	" 12	E. G. Lott	1st	18	Caledonia, 1200 tons		Bd. Ex. Liverpool
			extr				
	" 13	John Spicer	2nd	32	Osprey, 93 tons	97917	Tr. Ho. Ply. Brnch
					(as Mate)		
	" 14	John Duncan	2nd	37	Memnon, 245 tons		Ma. Bd. S. Shields
	" 15	T. Kindhaugh	2nd	40	Catherine Ann, 219 tons		Ma Bd. S. Shields
					(as Mate)		
	" 14	Andrew Smith	3rd	26	Jane, 220 tons		Ma Bd S. Shields
					(as Mate)		
	" 18	D. D. Wishart	1st	32	Margaret, 251 tons		Tr. Ho London.
	" 18	T. Harper	2nd	28	Pomona, 284 tons		Ma Bd. S. Shields
					(as Mate)		
	" 23	W. Symons	1st	42	Clyde, 1850 tons		Tr. Ho. Pts. Brnch

MATES.

1846	Nov. 12	Andrew Latto	1st	22	Mars, 423 tons	104493	Tr. Ho. Dundee
	Dec. 29	John Johnson	1st	24	Felicity, 298 tons	96710	Bd. Ex. Liverpool
	" 30	George Cooper	2nd	22	Achilles, 448 tons	116563	Tr. Ho Dundee

London, February 6th, 1846.

Sir,—I observe in your February Number a letter on the Examination of the Officers of the Merchant Service, and some allusion to your own remarks on the small number offering themselves for examination.

I think but few will differ from me when I say, we have long wanted a system of examination for the mercantile marine, and however faulty the present plan may be, still it is better than none, for this reason—That the subject will now be discussed among seamen, tending, I trust, to some improvement. As the system now stands, it is, I am sorry to confess, comparatively useless, as those few who now offer themselves for examination, are those only who require no spur to the acquirement, or brushing up, of the astronomical part of a master's duty, (and others having ships, hearing no inquiries for certificates, see no occasion to trouble themselves in obtaining them,) but I do

contend, that in all large bodies, something more is necessary with the majority to urge them forward than the innate sense of duty.

At present the system is left to the officers themselves, the merchants care not for testing by examination the competency of their servants. A man (speaking generally,) is just as likely to obtain a good ship without a certificate as with one; then what inducement is there under these circumstances, for a person troubling himself to go before a board of examiners? But if the Government have any wish that the system should progress without compulsion, let them establish a rule, that no mails nor government stores, should be carried by any vessel, either steaming or sailing, save in those commanded by certificated masters, distinguishing the voyage into classes, equivalent to the certificates, 1st, 2nd, &c. This would be but a small boon to those who pass, but of infinite utility to the service, and leave no room for complaints or regret at the small numbers who now offer themselves for examination, as also obliging the merchants to interest themselves in the subject.

Much might be said on this subject, but from fear of trespassing, I will now conclude, trusting some abler pen than mine will take the matter up. Simply mentioning one circumstance which appears an injustice to our service—masters in the navy undergo the same examinations, as the masters in the merchant service, but they *pay no fees*. Why should the merchant service not be treated with the same favour?

I remain, &c.,

To the Editor N.M.

A MERCHANT SAILOR.

INCRUSTATION OF STEAM BOILERS.

Nothing, perhaps, has contributed so much to the occurrence of fatal accidents as explosions arising from the incrustation of boilers. Scarcely a week elapses without the columns of the papers presenting the details of some frightful catastrophe caused by the sudden bursting of steam apparatus, and, in most instances, it has been found on subsequent investigation that the accident has arisen from incrustation in the boiler.

Incrustation may cause explosions in various ways: by forming a layer of non-conducting matter between the metal and the fluid to be heated, and thus allowing the temperature of the former to rise to a high point, even to redness. The metal oxidizes rapidly at this temperature, and the boiler is thereby weakened and rendered incapable of sustaining the necessary pressure. But a more fruitful cause of accidents, is the sudden removal of portions of incrustation, when the metal expands on the attainment of the high temperature; the water is thereby brought in contact with the heated metal, and evaporation takes place so suddenly, as to resemble the evolution of gases from the firing of gunpowder. Indeed, the results in both cases are identical.

Numerous attempts have been made, both by practical and scientific persons, to avoid this danger, but without any decided success; and prudent engineers, with a view of modifying an evil which they could not effectually prevent, have been under the necessity of frequently blowing off their boilers, for the purpose of driving out of them the highly concentrated water which they contained. This method is but very partially successful; deposit still forms, only to be got rid of by the hammer and chisel, a process which, to say

nothing of the expense which it occasioned, deteriorated from the effectiveness of the boiler subjected to it. From these, and other circumstances, it became a matter of the first importance to engineers, to devise some means which would obviate the evil without injuring, by its chemical or mechanical action, the metal of the boiler, or of the other parts of the engine exposed to its influence.

About two years back, a Dr. Ritterbandt turned his attention to this subject, and succeeded in discovering a process which fulfils these conditions, and which, having been tried by numerous engineers of eminence, and found to answer, was eventually brought under the notice of the Institution of Civil Engineers, and of the Society of Arts. Its merits were discussed at great length by the members of these learned societies, who seemed generally to approve of Dr. Ritterbandt's system; the Society of Arts, in fact, rewarded the ingenious inventor with its gold Isis Medal for his discovery.

The principle upon which Dr. Ritterbandt's invention is based, is the chemical action which the muriate of ammonia exerts upon the carbonate of lime, the incrusting material. Dr. Ritterbandt discovered that, by introducing muriate of ammonia into a boiler containing water holding lime in solution, the carbonate of lime, instead of depositing when the carbonic acid by which it was held in solution was expelled at a high temperature, became converted into muriate of lime, a substance eminently soluble, whilst the carbonate of ammonia, likewise formed by the double decomposition, passed off with the steam, so that the boiler could not foul. The process is equally applicable to fresh and salt water. The inventor has proved, that when sea water is boiled, the incrustation produced is not formed of salt, but of calcareous matter, the salt not depositing until the water has attained a density far beyond that at which the boilers of marine engines are worked. The object of the frequent blowing off, which it obtains in practice, is to prevent the accumulation of the deposited calcareous matter. By preventing the formation of carbonate, by the addition of muriate of ammonia, the necessity of blowing off is to a great extent dispensed with; for while, with the best contrived apparatus, it is found impossible to continue working at a density above 20° marine hydrometer, with the plan of Dr. Ritterbandt a density of 60° may be safely employed. Three-fourths of the quantity of water usually blown out is thus economized, and consequently, that proportion of the loss of fuel saved.

The soundness of Dr. Ritterbandt's principle has stood the test of time and experience. Twelve months have elapsed since his discovery was brought under the notice of the public, and in that time its operation has been tried in every variety of way with eminent success,—in large and small steam-boats, in stationary and locomotive engines, working with water from all localities, and in every instance it has been found perfectly effective, not merely in keeping the boilers wherein it has been applied, clear of deposit, but in disintegrating that which had formed previously to its application.—*Nautical Standard.*

LIGHTNING CONDUCTORS.—We find the following further particulars relating to the *Figard* having been protected by Harris's Conductors, in addition to those mentioned in p. 155 of this Number:—The *Figard* experienced a heavy thunderstorm whilst lying at Nisqually, on the evening of 26th September last, during the prevalence of which her mainmast was struck by lightning; the electric fluid passed down the conductor, (she was fitted with Harris's,) and by it out on each side of the ship, causing a tremendous explosion, but no damage was sustained either by the mast or the ship. Two persons were struck down by the violence of the shock. It is considered the conductors saved the ship.

THE LEEGHWATER STEAM ENGINE.—*Drainage of the Haarlem Lake, Holland.*

The geographical changes which are produced near the embouchures of rivers by deposition of alluvial matter are in no part of the world exhibited in a more remarkable manner than in the delta of the Rhine. The natural operations of that river interest the antiquarian by the remoteness of their date, the geologist by their extent and physical character,* and the engineer by the grand artificial works undertaken to resist or modify their effects.

The Rhine on entering the Low Countries divides into several branches: the southernmost of these, the Whaal, reaches the sea near Kampen; the most northern branch is nearly at right angles to the former, and empties itself into the "rolling Zuyderzee," and another branch passes Rotterdam. The Rhine proper continues its enfeebled course to Leyden and Utrecht, and nearly exhausted by the numerous canals which are connected with it, finally reaches the sea by a small artificial sluice. Its fate has been aptly compared to that of a dethroned monarch, who is deprived even of the satisfaction of attracting admiration and sympathy by the grandeur of his exit.

It is very interesting to observe how this delta has been altered even in the historic period. It the time of the Romans the Rhine had but two branches; Virgil calls it *bicornis*, and Tacitus says that the largest of these branches, that nearest to Gaul, is called *Vahalum*.† Even in the days of Charlemagne, the Rhine communicated with the Escaut, by a branch of the Meuse, which has since entirely disappeared. A great inundation, A. D. 860, destroyed the regularity of the mouths of the river. But perhaps the most remarkable alteration of all has been the conversion of the Zuyderzee from an inland fresh-water lake, such as it is described by Pomponius Mela, into a gulf of the sea. This change took place in the thirteenth century, and was the result of violent storms, during which the sea destroyed the barrier between itself and the lake. Traces of this barrier still exist in the islands and shoals between the Helder and Ter-shelling.

The natural division of the Rhine into two branches was first disturbed by the Roman legions under Drusus, who, in the twelfth year before the Christian era, dug a canal from the Rhine to the small river *Sala*, as a military defence. This canal soon became enlarged by the force of the current into a third branch of the Rhine. A fourth branch, the Leck, was created subsequently, in a similar manner, during an insurrection under Claudius Civilis.

In our own times another important change is about to take place. The Lake of Haarlem is a large fresh water lake, between Leyden and Amsterdam, and communicates with the Zuyderzee. The project of draining this lake has been long entertained. The bottom consists of an alluvial deposit, well suited for agriculture. It was at the end of the last century, when steam engines began to be used for drainage, that the idea of employing them in draining the Lake of Haarlem was first entertained. The idea was but the extension of that which had already been practically exemplified in the drainage of the Beilum and Diem, in Holland. The longest side of the lake

* It is calculated (Ansted's Geology, I. 7), that seven or eight thousand millions of tons of alluvial mud are carried down by the stream annually. The greater part of this soil is deposited in Holland.

† The passage in Tacitus (Ann. II. 6,) seems somewhat inconsistent with another in Cæsar (De Bell. Gal. IV. 10), where after a sentence of which the text is evidently corrupt, and the meaning (to us at least) obscure, it is said, "Ubi Oceano appropinquat, in plures diffuit partes, multis, ingentibusque insulis effectis..... multisque capitibus in Oceanum influit." It has been supposed, however, that Cæsar speaks merely of the subordinate streams and mouths near the coast.

of Haarlem is parallel to the sea, and is separated from it by a very narrow strip of land. Moreover, the level of the lake is some twenty feet below that of the sea. When, therefore, the drained country is covered with villages and farms, it must be well protected by dykes, or the sea may some day perhaps pay the sober Dutchmen a visit, for which even their amphibious nature has not sufficiently prepared them.

In order to ascertain the most approved method, and, at the same time, the most economical manner, of draining the lake, the Dutch Government appointed a Commission of engineers to report upon the best means, and to examine the various plans of drainage adopted in England. After examining a great variety of schemes and proposals, it was determined to adopt the plan submitted by Mr. Joseph Gibbs and Mr. Arthur Dean—who have, by close attention to all the details, produced an engine which is working with great effect and astonishing economy of fuel. It is proposed to have three engines of the same power, and three sets of pumps.

Quantity of Water.—The area of the Haarlem Lake is 45,230 acres, the estimated contents to be pumped out about 800 million tons, but should the quantity be increased by any unforeseen cause even to 1000 million tons, the whole amount could be evacuated by the three engines in about 400 days.

The bed of the lake when drained must be always kept dry by machinery, and observations continued during ninety-one years show that the greatest quantity of rain which fell upon the area of the lake in that period would give 36 million tons as the maximum quantity of water to be elevated by the engines in one month; to perform this work would require a force of 1084 horses' power to be exerted during that period; the average annual drainage is estimated at 54 million tons.—*From an interesting article in the Civil Engineers' Journal.*

WATERSPOUT.—*Extract of a Letter from Lieut. Wood, R.N., Commanding H.M.S. Pandora, St. Blas, Mexico, 26th Nov., 1846.*—On my way from Panama to the Straits of Juan de Fuca, when not more than thirty or forty miles from the island of Quibo, close to Point Mala, Bay of Panama, I was struck by a waterspout, which I do not remember having heard of happening to any vessel before. I therefore send you an extract from my journal, leaving you to make what use of it, or none, as you may think best. Saturday 18th April, the islands of Quicana and Quibo being in sight, shortly after noon a bank of black clouds rose in the S.W., and approached us slowly. The *Herald*, about $1\frac{1}{2}$ miles in that direction, got the breeze and rain, but it was some time before any wind reached us, and then very lightly. Whilst trimming to this, a waterspout descended from the outer or S.W. edge of the arch, within half a mile of us, and came rapidly in the direction of the vessel. The column was much bent and small in the centre, the diameter of the base, when close to, about twenty or thirty feet, and the gyrations from *left to right*. As I could not avoid it, I prepared for it as well as time would permit, but only got the flying kites in and the hatchways secured when it was on us. The column broke before it struck us, but again united, when I fired a volley into it without any apparent effect. It took us on the quarter, throwing all aback, and giving the mainsail a good twist, and ourselves a considerable sprinkling of *salt* water. As soon as it was over, I looked round, but nothing was then to be seen, and the wind returned to its old quarter, S.W. I sent an officer to observe the barometer while it was passing, but no motion was perceptible, it was standing at 30.00, and did not alter. Whilst on this subject, I may as well tell you that the *Fiagard*, whilst lying

in the Straits of Nisqually, was struck by lightning, which passed down the conductor and out through the ship's side, exploding outside with a very loud report. It may be gratifying to Snow Harris to know that it is the opinion of the captain and officers, that the lightning conductor was the saving of the mast, as well as several lives, if not of the ship herself."

[The observation on the *direction* of the gyration of the water in the above account, is most important—it agrees with the direction of the wind in the hurricanes of the northern hemisphere. Capt. Beechey mentions one (see vol. 1839, p. 452) as occurring in the *Blossom's* voyage, and the direction of the gyrations was observed to be the same. Its formation by salt water is also another important fact.—Ed. *N M.*]

GALLANTRY.—A trading schooner (the *General Brock*.) was reported at Kingston, Canada, as wrecked in a severe gale of wind on Pigeon Island about the end of last November, the crew suffering very severely from their situation, and the steam-vessels plying on the lake were unable to render them any assistance from the severity of the weather. Lieut. Tyssen, commanding the *Mohawk*, was directed by Com. Fowell to proceed to her assistance, and Lieut., now Com., J. B. Willoughby, was ordered to accompany him, with nine men from the *Cherokee*. The *Mohawk* proceeded without loss of time on this hazardous and honourable service, and the successful result is thus related by Com. Fowell in his official report. "It is owing to their praiseworthy exertions that the sufferers were rescued from their perilous situation, being nearly perished from the intensity of the cold. Though the surf was very high, and the risk of landing imminent, Lieut. Willoughby in one boat, and George Parker, boatswain's mate, in another, undertook the dangerous task, and by their judgment, boldness, and intrepidity, succeeded in their endeavours in bringing all on board the *Mohawk* in safety."

NAUTICAL NOTICES.

REVISED AND AMENDED INSTRUCTIONS, touching the Navigation of the Coast of Coromandel; and Sailing Directions for the Guidance of Ships and Vessels when bound to the Port of Coringu in either Monsoon.

1. Whereas, the Bank of Soundings which lines the Coast of Coromandel is steep to, and does not extend beyond twelve or fourteen miles, and off some positions where the coast is very low, and void of all distinct landmarks, the outer edge of this bank is not beyond from eight to ten miles, it is obvious that the utmost care and vigilance are at all times essentially necessary to ascertain when a ship or vessel is within the limits of the bank; for which purpose the deep-sea lead should be carefully attended to, especially when, with a beating wind, a ship or vessel may be standing in for the land.

2. And as many instances have recently occurred which prove that there is frequently a strong set, or indraught towards the north-western limit of the Pulicat and the Arnegon shoals, commanders of ships and vessels are warned against an incautious approach towards the coast in the vicinity of those dangers, which are steep to, and soundings, of fourteen, and twelve fathoms, are within three miles of those banks, decreasing suddenly to eight,

and seven fathoms, which are close to each of the shoals—and although breakers may be seen or heard occasionally, yet such an indication of approach, either to the Pulicat or the Armegon shoal, cannot be relied on.

3. And, whereas a recent survey of the MOOTAPILLAY Shoal by Lieut. Fell, I. N., proves the necessity of approaching the coast in the vicinity of that danger with great caution, the attention of commanders of all ships and vessels is directed to the following instructions. Mootapillay Shoal is in lat. $16^{\circ} 23' 15''$ N., three fathoms hard sand in the shoalest part, and that shoal patch bears E. 2° S. from the two conical hills at Pellore, and E. 20° S., from the southern brow of a high mountain, and is distant from the shore ten miles; but as those land-marks may frequently be obscured, and only discernable in clear weather, and as there are soundings of seven and eight fathoms close to the shoal, ships and vessels should not approach the coast when off the Mootapillay Bank, during the night in less than twenty, or twenty-five fathoms, nor during the day in less than twelve or fifteen fathoms.

4. Ships or vessels getting ahead of their reckoning, and overcasting their lead, are not uncommon occurrences on this coast, and should be most cautiously guarded against. When soundings are gained on the edge of the bank, in forty-five, forty, or thirty fathoms, every preparation should be made to tack, or wear, as the distance may not be more than from six to nine miles from dangerous patches and reefs, which are accurately described in Horsburgh's sailing directions; and to guard on the safe side, every officer and seaman should bear in mind the possibility of those shoals having extended to seaward since those directions were published, also the mutability of currents, and the liability of strong indraughts towards the several bights and bays which indent the Coromandel Coast; and after a heavy gale, or a severe hurricane, the storm wave and the sudden change of current may set ships and vessels much nearer to the shore than reckoned upon. Under all these circumstances, it is absolutely necessary that unremitting attention should be observed in the navigation of this low and dangerous coast, which is very often partially obscured by thick or hazy weather, and sometimes the land cannot be seen when within a few miles—therefore the responsibility of command, and due consideration, will call into constant requisition those anxious duties, which are comprised under the well known maxim of *latitude, lead, and look-out*.

5. Ships and vessels when bound to Coringa, from the northward during the S.W. monsoon, should haul in towards the coast to the southward of the Dolphin's Nose, and beat to windward close along shore. From the Dolphin's Nose until near the low shore of Golconda, the coast is high, bold, and rocky, and free from all danger, but should not be approached under twelve or fourteen fathoms, as those soundings are not above one-and-a-half or two miles off shore. There is a high rock close to the beach near the village of Poondamacka, situated five or six leagues S.W. of the Dolphin's Nose, and Wattara, marked by a bungalow on the summit of a hill, bears about S.W. $\frac{1}{2}$ W. ten leagues from that promontory. Pentacotta known by a detached conical, or sugar-loaf hill, bears S.W. seven or eight leagues from Wattara, and a few miles to the southward of that position, the bold and rocky coast gradually terminates, and may be approached to within eight or nine fathoms, and when off the village of Oopadah, twenty leagues S.W. of the Dolphin's Nose, and four leagues N.E. of Jauggernautpooram, ships and vessels may stand in shore to four-and-a-half and five fathoms, where a soft muddy bottom commences; when thus far to windward, care should be taken by making short tacks, to hug the coast, as the freshes from the several mouths of the Godavery in June, July, and August, set with such rapidity that ships and vessels may, without precaution, experience much difficulty and delay in beating up to the anchorage. Having sighted the light-house

by day, or the light by night, it may be brought to bear from S.b.E. to S.b.E. $\frac{1}{2}$ E., and with the flag-staff (which stands a little to the eastward of the Jauggeronautpooram pagodas) bearing from W. $\frac{1}{2}$ S. to W.b.S. $\frac{1}{2}$ S., ships and vessels may anchor off Jauggeronautpooram, or Coconadah, in four or five fathoms, soft mud, and off shore one-and-a-half or two miles; as the lead and light, will be the only guide at night, soundings must then be carefully attended to.

6. All ships and vessels from the northward, and bound to Coringa, during the N.E. monsoon, should guard against a southerly current, and make the coast between the Dolphin's Nose and Wattara, when they may direct their course for the bay; but in this monsoon, large ships should anchor in six fathoms, with the light-house bearing S.b.E. and the flag-staff W.S.W., where they will find good holding ground.

7. All ships and vessels from the southward, when bound to Coringa in the S.W. monsoon, should, in the day-time, make the land about Narsipoor point, and not come under eight or nine fathoms. This point is low and woody, and the coast presents the same appearance, until past the large fishing village of Bundamalunka, which is seven or eight leagues N.E. $\frac{1}{2}$ E. from the point: thence to the reef off Point Gordeware, the coast is intersected with low shrubs and sand hills, except about half way between that village and the reef off Point Gordeware, where there is a remarkable tope of apparently isolated Palmyra trees; when this tope bears about S.W. the light-house on one of the Hope isleta, may be seen if the weather is clear. As several ships have been lost in the vicinity of this part of the coast, and as erroneous impressions prevail respecting the soundings and extent of the bank, the Master Attendant, in H. C. steamer *Hugh Lindsay*, on the 10th ult., hauled within two miles of the coast, in seven fathoms, abreast the site where the ship *Active* was wrecked in July last, and from that position the steamer edged away S.E. four or five miles and carried regular soundings from seven to nineteen fathoms—the same experiment was made between that position and Narsipoor point and with a corresponding result. Having passed the tope and sighted the light-house, ships and vessels should keep off, in twelve or fourteen fathoms, until the light-house bears about N.W.b.N. when they may edge away or haul up to the northward, and attending well to the lead bring the light to bear N.W. when they will be abreast the south-eastern entrance of the Gordeware reef, which bounds the Hope isleta, and the southern limits of Coringa Bay. With a working breeze this reef may be approached to eight or nine fathoms, it is steep to, and six and seven fathoms are within a quarter of a mile of the ridge of breakers which are more or less visible according to the force and direction of the wind. Still holding on a northerly course and having passed Point Gordeware a low sandy ridge almost level with the sea, and intersected by several knolls or knobs of hard sand which appear above water, and having brought the light-house to bear S.W. or S.W. $\frac{1}{2}$ S. ships or vessels may haul up for the bay to N.N.W. and gradually to W.N.W. and when it bears south with soundings of six or seven fathoms soft mud, they should prepare to anchor under bearings as indicated in Section 5 of these instructions. These directions apply to both day and night, but during the night, when neither Narsipoor point nor the shore can be seen, the coast should not be approached under twelve or fourteen fathoms, and the greatest caution is at all times necessary when hauling in to make the Coringa Light; true soundings, a good look out, and full preparation to tack, or wear, or haul off shore at a moment's warning, must be attended to: thick or hazy weather may obscure the light, and it may be prudent to stand off to the southward until daylight.

8. All ships and vessels from the southward and bound to Coringa Bay in the N.E. monsoon, must endeavour to work up well to the northward of their

port, but if they are driven to leeward, they must avoid the danger of being embayed, and should not bring Narsipoor point to bear to the eastward of north, but stand out to sea until they have gained sufficiently to windward of Point Gordeware, when they must attend to the sailing directions and anchor in a windward position, as already noticed.

9. Hope Island (so designated) has the appearance of one island and is covered with jungle or brushwood; but it is intersected by several channels, and is, therefore, a group of islets, and on the south-west end of one of those islets stands the Coringa Light-house. It is elevated about eighty feet above the level of the sea, and the light is discernible from a ship's mast-head in clear weather, fifteen or sixteen miles. It bears from Point Gordeware about W.S.W. In thick weather this light may not be visible beyond ten or twelve miles, and as the outer edge of the reef is at least six miles from the light-house, a ship or vessel may, during such weather, be within four miles of the reef before the light or the light-house has been discovered: therefore soundings always require the most prompt and careful attention, especially as there is a possibility of such accident or negligence befalling a light, as may entirely put it out. Point Gordeware has extended to the northward since the first publication of Horsburgh's directions, and the reef has also extended its limits, as therein described, both to the northward and eastward; and these changes are attributed to the awful inundation of the sea during the hurricane of November 16th, 1839, and the reaction consequent on that disastrous event: but this apparent change has merely shifted the anchorage off Coconadah, or in Coringa Bay, farther to the northward, and is not in any way detrimental to the safety of that anchorage.

10. The Bay of Coringa is well sheltered, and is only open from N.E. b.E. to S.E. b.E. The anchorage is on good holding ground deepening to the N.E. and a ship or vessel driving on the mud bank would not sustain any material injury. The mouth of the Coringa River is about S.W. b. S., seven or eight miles from the anchorage, and the bar, on which is a ledge of hard sand with soft mud on either side of it, is distant from the river's mouth about two or three miles; nine feet six inches is about the average height of water over the bar at the full and change of the moon, when it is high water at nine o'clock; and the rise and fall of tide over the bar is from five to six feet during the springs.

11. Commanders of ships or vessels cannot commit any error of consequence if they attend with care and attention to Horsburgh's invaluable Directory; and at the same time exercise their own judgment and discretion when certain changes of wind and weather, which cannot always be foreseen, call into aid that practical skill so essential to the safety of navigation.

Master Attendant's Office }
Madras, 13th October, 1846. }

CHRIS. BIDEN,
Master Attendant.

The following notice we find appended to the foregoing directions.—ED.

Master-Attendant's Office, Madras, October 19th, 1846.

The Master-Attendant hereby warns all Commanders of ships and vessels in the roadstead of the probable approach of bad weather, and advises them to be well prepared for a sudden change which may terminate in a severe gale or even a hurricane; he therefore calls their attention to the expediency of sending down top-gallant yards and masts, of having top-sails treble or close reefed, also reefed courses and storm stay-sails bent, with holds in good trim, and their ships always ready to slip and stand to sea. A ground swell and an increasing surf are at this season some indication of bad weather, and as all communication between the shore and the shipping may be suspended

without much previous warning, commanders of ships and vessels should be ready to repair on board their respective ships at all times, and the Master-attendant recommends that every commander should remain on board ship from sunset to sunrise, until the monsoon has fairly set in, and the weather assumes a settled and favourable appearance.

CHRIS. BIDEN, *Master-Attendant.*

Edinburgh, February 1st, 1847.

LOCH RYAN LIGHTHOUSE—The Commissioners of the Northern Lighthouses hereby give notice, that the beacon erected in the year 1843 upon Cairn Ryan Point, within Loch Ryan, in the county of Wigtown, has been converted into a lighthouse, the light of which will be exhibited on the night of the 3rd of March, 1847, and every night thereafter, from sunset to sunrise.

The light is chiefly intended to open up the anchorage of Loch Ryan.

The following is a Specification of the Lighthouse, and the appearance of the Light, by Mr. Allan Stevenson, Engineer to the Commissioners:—

Loch Ryan Lighthouse is situated upon Cairn Ryan Point, on the eastern shore of the loch, in N. Lat. $54^{\circ} 58' 28''$, and W. Long. $5^{\circ} 1' 47''$. The light will be known to mariners as a fixed light of the natural appearance. The lantern, which is open from S.b.W. $\frac{1}{2}$ W. round to N. $\frac{1}{4}$ E. in a westerly direction, is elevated 30 feet above the level of the sea; and the light will be seen at the distance of 10 miles, and at lesser distances, according to the state of the atmosphere.

And the Commissioners hereby further give notice that, by virtue of a warrant from the Queen in Council, dated 19th December 1846, the following tolls will be levied in respect of this light, viz:—

For every British vessel, the same not belonging to Her Majesty, or being navigated wholly in ballast, and for every foreign vessel privileged to enter the ports of the United Kingdom, on paying the same duties as British vessels, which shall pass or derive benefit from the said light; *that is*, which shall arrive at or depart from any port or place within Loch Ryan:—

If the same shall not exceed 50 tons burthen, 6d.

And if the same exceed 50 tons, for each additional 50 tons, or part
of 50 tons, a like toll of 6d.

And double the said respective tolls for every foreign vessel sailing as aforesaid, not privileged as aforesaid.

By order of the Board,

(Signed) ALEX. CUNNINGHAM, *Secretary.*

SAN JUAN DE NICARAGUA.—*Extract of a Letter from Capt. Brace of the Steam-ship Teviot.*—"The chart furnished to the Teviot of the harbour of San Juan de Nicaragua is by Mr. Peacock, and bears the Admiralty stamp. This is now incorrect, Point Arenas having extended nearly $2\frac{1}{2}$ cables' length in a westerly direction, and has no breakers at its extremity. I have also every reason to believe, from Capt. Restarick and other sources, that other parts of the harbour are equally at variance with the plan. The incessant rain and short stay prevented my undertaking a survey of the essential parts of the anchorage."

[The survey of Mr. Peacock alluded to does him much credit, and bears on it the proportions of progressive extension of Point Arenas for several years; an indication which, with the foregoing notice, will serve to place seamen on their guard against the changes continually going forward in this bay.—*Ed. N.M.*]

LIGHTHOUSE AT CAPE HOWE.—We are happy to announce the return of C. J. Tyers, Esq., Commissioner for Gipps Land, who had proceeded on the 24th in the *Santa Barbara* schooner, tender to the *Wanderer* (10 tons), to Cape Howe, to determine the best situation for the lighthouse to be erected there.

The *Santa Barbara* was detained by the heavy south-west gales for three days, but eventually sailed on the 24th inst., with the Catherine, William, and Martha and Elizabeth, which vessels had been driven back from Bass Straits, and put into the bay for shelter. She had light winds, with a heavy swell, caused by the late gale, and arrived at ten o'clock on the evening of the 25th, at the anchorage under the north-west end of the Island of Gabo, the native name, probably a corruption of Cape Howe.

After having examined the coast about Cape Howe, and made a survey of the Island of Gabo, we learn that Mr. Tyers has decided that the only situation calculated for the lighthouse is upon the island; and that the best position for it is on the most elevated part of the island (about 150 or 160 feet above the level of the sea), used by the whalers as a lookout.

The island is situated between five and six miles south-west of Cape Howe, and about a quarter of a mile from the nearest point of the main land; its elevation varies from 30 to 160 feet; it is one mile and a half in length from north to south, and three quarters of a mile from east to west; it is composed of porphyritic rock—the northern and western sides being covered with grass, and is calculated to carry about fifty sheep and two or three cows; has some nice patches for garden ground, and above all abounds with numerous springs of the best water. With the exception of a few acres of stunted banksia and bush there is no wood on the island.

Upon the island are cutting-in shears, try-works, three deserted huts, formerly used by Dr. Imlay's whaling establishment.

The party saw no traces of the rabbits left upon the island about two years since by Capt. Gilmore, which may be accounted for by the appearance of a very large white cat, who seemed to be the only squatter in occupation.

We have seen a specimen of the rock of which the island is chiefly composed, and which resembles the Aberdeenshire granite, and from its hard nature we think there will be considerable difficulty and expense in cutting it, although Mr. Helmrick, who is building the lighthouse at Boyd Town, and who has been accustomed to work granite of this description, reports very favourably of the stone, and remarks that it is similar in quality to that which he used in building the Peterhead and Aberdeen lighthouses. But the working of this material would be attended with double the expense of working Sydney sandstone; still, from the enduring nature of it, and the exposed position of the chosen locality, we have no doubt this will be a secondary consideration, as the freight of material and expense of landing it would counterbalance the extra expense of cutting this stone; and as Mr. Tyers has selected a spot with an elevation of 160 feet, the lighthouse in all probability will not require to be more than forty feet in height—as this elevation would allow the lighthouse to be seen at a distance of at least twenty miles. The necessary supplies might be sent from Twofold Bay, the nearest port, being only by the chart about thirty-three miles; small craft could, with the greatest facility, discharge under the shores.

We hear Mr. Tyers has surveyed and sounded the anchorage, and is of opinion that small craft will find shelter in a small bay on the north-west side of the island (where the *Santa Barbara* lay for three days) both from the S.W. and S.E. gales. This is of material consequence, as vessels in attempting to round Cape Howe are frequently compelled by the strong gales to run back. As Mr. Tyers was desirous of ascertaining the facilities of communication between Twofold Bay and Cape Howe by land, he requested Mr. Helmrick to proceed down the coast on this service.—*Port Philip Herald*.

NEW LIGHT AT SAND KEY, Florida.—The agent of Lloyd's at Key West, states, that a temporary schooner light-vessel, to replace the lighthouse on Sand Key, destroyed in the October gale, would be placed as near the spot of the former light as possible, about the 10th of January last.

She will have a fixed light 45 feet above the level of the sea, and be seen in clear weather at from six to seven miles distant. The lantern is 4 feet square, single lamp, without reflectors.

The agent also states, that the lighthouse at Cape Flanders is in a state of forwardness.—*Shipping Gazette*

ROCK IN THE GULF STREAM.—The Captain of the barque *America*, at Baltimore, reports, that, on the 1st of September, he discovered a rock in the Gulf Stream, projecting, as he supposed, nearly 300 feet in circumference. The latitude of the rock is $40^{\circ} 20'$, long. $63^{\circ} 50'$. The captain has no doubt of the precise location of the rock, as his chronometer was found to be correct on his arrival. The rock lies directly in the track of vessels bound for Europe, and navigators should be on their guard. May not the discovery afford a clue to the loss of the steamer *President*, and the packet ships *England* and *United States*? The latitude, it will be observed, is near on a direct line with this port. A vessel ought to be sent out to search around this rock.—*American paper*.

[This is most likely a wreck instead of a rock.—ED. N.M.]

CHARTS OF THE SEA OF MARMORA—*Caution*.

London, Dec. 24th, 1846.

SIR.—Finding in your Magazine that much attention is being paid to incorrect charts, I avail myself of the opportunity of informing you, that, on the 27th of November, 1845, I lost a fine brig named the *Ann Sophia* of London, in the Sea of Marmora. I was from Taganrog laden with wool, bound to Liverpool. I left Constantinople at 10 A.M., 26th November. At 11 A.M. the 27th, when lying becalmed, with the island of Kalolimni or Papa, so named in the chart, bearing E.b.S. from me distant about ten miles, I was suddenly taken with a gale of wind, from N.N.E., with very thick weather, which forced me on the south side of Marmora; the night was very dark. After getting into smooth water under the island of Marmora, I took in all sail and run the ship under the fore-topmast stay-sail, towards good anchorage laid down in the chart between Routouli and Afzia. The lead was kept constantly going, from the time the sails were taken off the ship, and finding no bottom at 20 fathoms, all at once we had 9 fathoms. Another cast of the lead I wished to have, and intended to let go the anchor, but before getting another cast of the lead, the ship went crash amongst the rocks, on a reef extending above 400 yards, to the S.E. of the island of Routouli, not noticed in the chart at all. At 7 P.M. the ship struck, I saw nothing of the island until daylight came in, it being so very dark. The unfortunate loss of the ship happened through a gross error in a chart of the Archipelago and Sea of Marmora, published in 1838, by Mr. Laurie. The fact is, that Mr. Laurie's chart gives the channel I was running into, a distance of six miles between the island of Routouli and that of Afzia. The Admiralty chart of 1831 of the Sea of Marmora, I am confident, in that particular place, is correct, and does not give the distance above one mile. I can only refer you to the examination of the two charts, and you will see where the gross error lies. I have both of the charts in my possession, and will be happy to give

any information if called on. I am well aware that many shipmasters going to that quarter, navigate by no other charts, which I found to be the case, when in Constantinople, for a month after the loss of the ship. My only motive for wishing this inserted in your Magazine, is, that it may be a general benefit to shipmasters navigating in that quarter, and all concerned, well knowing that many ships are wrecked or damaged on the same place.

I remain, &c.,

To the Editor *N.M.*

WM. GAVIN,

Master of the Catherine of Leith.

[The Commander of the Catherine has bestowed an obligation on ship-owners frequenting the Sea of Marmora by this communication, and we trust they will profit by it.—ED.]

RODGER'S ANCHORS.

EXPERIENCE adds fresh proofs of the value of Rodger's Anchors. The following letters from two distinguished naval officers fully confirm all the preceding reports which we have received of their good qualities:—

2, Hyde Park Gardens, 9th Jan., 1847.

SIR.—In reply to your letter requesting my opinion of your anchor supplied to the *Virago*, under my command, I can only say, that I was perfectly satisfied with it under all circumstances; and in the experimental trials that took place (the particulars of which I have not got by me at this moment) it proved its superiority in a decided manner in my mind.

I remain, Sir, very truly yours,

(Signed) G. G. OTWAY.

Lieut. W. Rodger, R.N.

[The experiments above alluded to, took place at Malta in 1844, by order of the Commander-in-Chief, Sir Edward Owen, and were conducted under the inspection of the Rear-Admiral Superintendent, assisted by the Master-Attendant, and the Master of the Fleet; on which occasion the Admiralty anchor, and likewise that of Messrs. Porter and Co., were tried against Lieut. Rodger's Small Palmed Anchor.—ED. *N.M.*]

Broke Hall, near Ipswich, 25th Jan., 1847.

SIR.—In answer to your letter of the 20th inst., requesting to be informed of the trials which were given to a Small Palmed Anchor supplied by you to H.M. steam-vessel *Thunderbolt* in 1843, and of my opinion thereon, I beg to acquaint you that the anchor in question was put to *many severe trials* during the cruizes of the *Thunderbolt* on the south-west coast of Africa, when it was used in preference to one of the bower anchors in consequence of its lightness, (being only 7 or 8 cwt.) and of its great powers of holding; and, in the absence of all official documents to extract from, I can take upon myself to say, that the anchor in question (as well as two kedges which were also supplied by you,) were proved to be equal in holding, power, and strength, to anchors of double their weight and size of the old shape.

The only precaution we found it necessary to observe, when putting them to such trials as to risk the parting of the cable or hawser attached to them, was to *secure the buoy-rope* with double seizings, backed round the crown and shank, as it would otherwise work off.

I have the honour to be, Sir, yours, &c.

Lieut. W. Rodger, R.N.

(Signed) GEORGE N. BROKE, *Captain, R.N.*

Captain Dillon, whose voyages and adventures among the natives of the islands in the Pacific, are familiar to every reader, and who discovered and brought to France the remnants of the *Astrolabe*, the sole relics of the unfortunate La Peyrouse and his companions, died rather suddenly at Paris last week.

The *Jamaica Despatch* gives an account of the loss of the *Baropa*, Indian-man, with 340 coolies on board, from Madras. She ran on a reef off Port Morant harbour, on the 10th Jan., through the negligence of the pilot. The whole of the coolies were got on shore in safety, but the vessel itself was a complete wreck.

PROMOTIONS AND APPOINTMENTS.

ADMIRALTY, Jan. 22.—The following promotions have this day taken place, consequent upon the death of Admiral of the White D'Arcy Preston:—Admiral of the Blue Stephen Poyntz to be Admiral of the White; Vice-Admiral of the Red Sir Graham Eden Hamoud, Bart., K.C.B., to be Admiral of the Blue; Vice-Admiral of the White Sir John Acworth Ominanney, K.C.B., to be Vice-Admiral of the Red; Vice-Admiral of the Blue Sir John Wentworth Loring, K.C.B., K.C.H., to be Vice-Admiral of the White; Rear-Admiral of the Red William Henry Brown Tremlett, to be Vice-Admiral of the Blue; Rear-Admiral of the White Thomas Brown, to be Rear-Admiral of the Red; Rear-Admiral of the Blue William Croft, to be Rear-Admiral of the White.

PROMOTIONS.

COMMANDERS.—M. C. Forster—R. Jenner.

RETIRED COMMANDERS.—G. Fox—K. Nazer—W. L. Paterson—T. Levet—J. Smith.

LIEUTENANT.—W. F. G. Fead.

MASTER.—A. H. Halloran.

SURGEONS.—T. Stratton, M.D.—F. B. Pritchard.

PAYMASTERS AND PURSERS.—C. W. Boone—C. A. Thorne—G. F. C. Bateman.

APPOINTMENTS.

COMMODORES (Second Class).—G. R. Lambert to *Imaum*.

CAPTAIN.—G. W. C. Courtenay (1828) to *Endymion*.

COMMANDERS.—T. H. Mason (1841) to *Medea*—C. M. Mathison (1843) to *Mariner*—N. Robilliard and W. T. Griffiths (1846) to study at the steam-factory,

Woolwich—W. Peel (1846) to *Daring*—P. Cracroft (1846) to study at the Naval College—W. V. Read (1846) to be Assistant in the Hydrographic Office, Admiralty.

LIEUTENANTS.—H. C. Toby (1841) to *Hibernia*—O. Borland (1845) to *Mutine*—L. R. Reynolds (1846) to *Trafalgar*—T. H. Hodgkinson of *Excellent*, and H. A. Hollingworth, of *Caledonia*, have exchanged ships—F. W. L. Thomas (1841) (reappointed) to *Mastiff*—C. G. Macgregor (1846), and C. Moore (1841) to *Mariner*—W. Need (1838) First-Lieut. of *Rodney*—T. C. Meheux (1838) to *Crescent*—B. Aplin (1811) to *Redwing*—C. J. P. Glinn (1842) to *Fearless*—L. R. Place (1842) to *President*—J. Frankiin (1842) to *Amphion*—H. Baker (1846) to study at the Naval College.

MASTERS.—J. Jeffery to *Centaur*—A. Karley to be Queen's Harbour Master at Chatham—B. Renaud to *Mariner*—T. Hodson to *William and Mary*.

SECOND MASTERS.—W. Hobbs (Act.) to *Avon*—J. W. H. Harvey to *Amphion*—W. Milman to *Sidon*—W. Mayes to *Apollo*—B. Wooley to *Penelope*.

MATE.—G. T. Colville to *Rosamond*.

MIDSHIPMEN.—J. Nicholls and W. H. Pym to *St. Vincent*—H. A. Reilly to *Excellent*—J. H. Glover to *Mastiff*.

NAVAL CADETS.—H. Temple to *Terrible*—R. Patten and F. Suttie to *America*—F. Simple to *Grecian*—G. C. Whitbread, J. Vaurenen, and C. B. Howard to *Hibernia*—J. P. J. Parry to *Sidon*—M. Prattent to *Albatross*—A. J. Villiers to *St. Vincent*—J. H. C. Smail to *Belleisle*—J. A. R. Dunlop to *Mastiff*—R. J. Hancock to *President*—G. A. Douglas and H. T. Holmes to *Superb*—J. Bayford to *Trafalgar*—T. Barnardston to *Canopus*—C. D. Lucas to *Amazon*.

MASTERS' ASSISTANTS.—G. F. M'Dou-

gail to *William and Mary*—J. Gilling to *Avon*—E. Wise, R. Dawes, J. A. Wilson, W. and H. G. Wilson and W. H. Willing to *Caledonia*—J. Gregory to *Acheron*—J. C. Sollett to *St. Vincent*—G. Willoughby and R. G. Pashley to *Mariner*—A. J. A. Parks to *Victory*—J. H. Foster to *Ardent*.

DEPUTY INSPECTOR OF HOSPITALS.—W. Lindsay, M.D., to Cork, in consequence of apprehended fever on board Her Majesty's ships there.

SURGEONS.—J. M'Bain to *Mastiff*—H. J. Domville and J. Caldwell to *Mariner*—T. H. Keown to the Marine Detachment at Port Essington—J. Lardner to *Asia* convict ship.

ASSISTANT SURGEONS.—W. T. Kay to the Royal Naval Hospital, Stonehouse—J. G. G. Ballantine to *Express*—W. H. Sloggett to *Caledonia*—W. Main, M.D., to *Griffon*—W. Smith, M.D., to *Ocean*—J. Lilburne to *Belleisle*—H. Gervais to *Mariner*—D. O. West to *Trafalgar*.

PAYMASTERS AND PURSERS.—W. H. Norman to *Rosamond*—R. A. Cumming to *Mariner*—W. W. Parminter to *Cormorant*—R. Wilson to *Crocodile*.

CLERKS.—H. A. Drake (Assist.) to *Mariner*—G. Grigor and E. Kirby (Assists.) to *Ocean*—J. Fitzpatrick (Assist.) and A. Jeffreys to *Victory*—G. F. Grigor

(Assist.) to *William and Mary*—R. J. Tucker to *Poictiers*—W. F. Wentworth to *Myrmidon*—Bright (Assist.) and E. Whitehead to *Caledonia*—G. B. Fales to *Dragon*—H. D. Grant (Assist.) to *Raleigh*—H. F. Kirkman to *St. Vincent*—W. Horton (in charge) and A. Whiffen (Assist.) to *Mastiff*.

COAST GUARD.

APPOINTMENTS.—Lieut. W. J. Lake to Ramsgate—Mr. H. Leigh to Newtown—Lieut. C. J. Walton to No. 1 Battery—Lieut. J. B. Clarke to Swanage—Lieut. C. G. Clarke to the Grand Redoubt—Lieut. W. Wooldrige to Wells—Lieut. C. Auridge to Challabro—Lieut. G. F. Westbrook to *Ranger*—Lieut. G. Mason (1827) to *Stag*—Lieut. J. G. Lapontiere (1827) to be Chief Officer—Com. E. B. Nott, to be Inspecting Commander, appointed to the Sunderland District—Mr. T. Lapontiere to Buckle.

REMOVALS.—Lieut. C. W. Pears to Poole Harbour—Lieut. W. Taylor to Milk Cove—Lieut. W. Hole to Budleigh Salterton—Mr. J. Hungerford to Cranfield Point—Mr. G. E. Spencer to Cooley Point—Lieut. J. Watson to Weston-super-mare—C. J. Hippisley to Bembridge.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

Feb. 13, at Ingestre, Lady Sarah, the wife of Capt. Viscount Ingestre, of a daughter.

Jan. 23, at the Craig, Bowness, Windermere, the wife of Capt. Sir Thomas Sabine Pasley, Bart., of a daughter.

Jan. 14, at Park cottage, Carmarthen, the wife of Lieut. H. Wright, of a daughter.

Feb. 1, in Clarendon square, Leamington, the wife of Capt. T. N. Langford, of a daughter.

Jan. 24, at Birkenhead, the lady of Capt. Charlewood, of a daughter.

Jan. 26, at Southsea, the wife of Mr. P. Wellington, Mast-Com. of *Belvidera*, of a daughter.

Jan. 17, at Caroline place, Stonehouse, the wife of Lieut. Kinsman, of a daughter.

Jan. 19, at Richmond cottage, near

Penzance, the wife of Com. Blair, of the Coast Guard, of a daughter.

Feb. 6, at Walmer, the wife of C. H. Baker, esq., Commander, of a daughter.

Jan. 22, the wife of Lieut. G. Baring Collier, of a son.

Jan. 29, at Orizava, Chudleigh, the wife of Com. Powney, R.N., of a daughter.

Nov. 18, at Singapore, the lady of Capt. Fowler, of *Hero*, of a daughter.

Marriages.

Jan. 21, at Great Cheverel Wilts, N. Barton, esq., of Corsley house, to Mary, only daughter of the late Capt. John Nicholas.

Feb. 13, at East Teignmouth, Devon, Dr. J. Dickson, of St. Helier's, Jersey, to Mary, daughter of Capt. Parson.

Feb. 13, at St. George's, Hanover square, John Philpot Curran, esq., to

Margaret Grace, daughter of Capt. Hayes, Royal Marines.

Fed, 16, at Torquay, Hay E. S. Winthrop, Commander, eldest son of the late Vice-Adm. Winthrop, to Anne daughter of the late John Hives, esq., of Gledhow grove, York.

Feb. 2, at Hobberstone, by the Rev. O. Leach, Capt. Macdonald, to Martha, youngest daughter of Lieut. George.

At St. Margaret's, Westminster, C. E. Davenport, esq., Royal Regiment, youngest son of the late Adm. Sir Salisbury Davenport, k.c.h., c.v., to Emma, Anne Georgiana Webber, daughter of the Very Rev. the Dean of Ripon.

Jan. 14, at Bristol, Thomas, eldest son of Francis Jefferson, esq., Sunning Hill, Berks, to Mary, daughter of Mr. James Trix, late of Barnstaple.

Jan. 21, at St. George's, Hanover square, William Dering, esq., eldest son of Cholmeley Gering, esq., of Ayott, Herts, to Anne Caroline, youngest daughter of the late Clotworthy Upton, esq.

Nov. 24, at Meerut, Lieut. P. R. Hockin, 2nd in com. 16th Irreg. Cav., to Julia Josephine Hamilton, second daughter of Capt. W. H. Knight, of Parkstone Poole, Dorset.

At Wokington, the Rev. H. Le Grand Boyce, to Cordelia, daughter of Capt. H. B. Mason, of Yately, Hants.

At Plymouth, Lieut. Euston J. Gray, son of the late Lieut. Gray, to Jane, daughter of the late Lieut.-Gen. J. Kern, E. I. Co's Service.

At St. Lawrence church, Winchester, by the Rev. G. Woodcock, Robert Budd, esq., of Fawley, to Eleanor Woodman, relict of Capt. James Purefoy.

Jan. 28, at St. Sidwell's church, Exeter, Com. George Curtis Adams, to Mary Susan, daughter of Edward Woolmer, esq., of Barnfield, Exeter.

Deaths.

Feb. 11, at his residence, Denmark hill, Surrey, Vice-Admiral of the Blue William Young, in his 81st year.

Jan. 15, at 13, Raby place, Bath, aged 68, Margaret Ann, the wife of Joseph Bullen, esq., Admiral of the White.

Jan. 19, in Great Surrey-street, retired Com. Charles Jones (1837), aged 65. He was midshipman of the *Polyphemus*, at Copenhagen, in 1801, where he was wounded.

Jan. 18, Master Joseph Wolfe (1807).

Jan. 21, Mrs. Penelope, widow of Lieut.

Kent, and daughter of the late Lieut. W. Hunter, of the Royal Hospital, Greenwich.

Jan. 9, at Lerwick, Shetland, Lieut. A. Hoseason.

Jan. 20, at George place, Plymouth, C. H. Goldin, Clerk, son of the late R. Goldin, esq., Purser.

Jan. 30, at Southfield, Stirling, retired Com. Robert Balfour, promoted in July last from the rank of Master. He was made a Master in 1796.

Jan. 26, at Orchard place, Southampton, Catherine Mary, wife of J. W. Ancell, esq., aged 30.

Feb. 16, in Adam street West, in her 35th year, Ellen Ann, the wife of Edward Pitts, esq., k.t.s., Commander.

Feb. 17, at Douglas, Isle of Man, Georgiana Collier, second daughter of Capt. Sir Robert Hagan.

At Spring Garden Parade, aged 82, Rebecca, relict of James Coultry, esq.

Dec. 29, at Copenhagen, in her 23rd year, the wife of George Carstenson, esq., eldest daughter of Com. Webb.

Dec. 31, at Weybourne, Norfolk, Mary Ann, the wife of Lieut. James Stewart, of the Coast Guard, aged 68.

Jan. 13, at Southsea, Emma Haberfield, in her 25th year, daughter of the late Lieut. Haberfield.

In Union street, Stonehouse, Mrs. Agnes Dicken, widow of the late Capt. Kent.

Jan. 22, at Teignmouth, Devon, aged 18, Susan, youngest daughter of the late Lieut. George Leslie.

Feb. 6, at Blackheath, Maria, the wife of Capt. Rowland Money, c.v.

Feb. 9, at her residence, in Durnford street, Stonehouse, Jane, relict of the late Capt. James Rogers, in her 84th year.

Feb. 4, at Bath, Mrs. Emma Blaquire, widow of the late Edward Blaquire, esq.

Jan. 35, at her residence, Athol house, Southsea, Nancy, the wife of Com. E. Wilcox, in her 53rd year.

Jan. 30, at Newport, Monmouthshire, Mr. Walker Richards, harbour-master of that port.

Nov. 23, Hong Kong, China, on board the *Vulture*, James Thomas Gill, esq., second son of Capt. Gill.

Jan. 17, at Malta, Hugh L. Walsley, elder son of Lieut. J. Hughes Lloyd.

Jan. 29, at Southsea, Leighton Dalrymple, son of Capt. E. G. Fanshawe.

At the residence of her son, Landport, Portsea, Jane, relict of Mr. J. Bragg, aged 59.

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stebbington, near Fareham,
Hants.—January, 1847.

A. M. Day of Month	P. M.																								
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
1	E								11	10	3	16	17	15	12	11	10	11	10	4	3	10	10	5	
2	5	10	12	15	15	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	15	18	15	15	
3	16	15	17	17	13	11	12	15	15	17	17	17	15	13	6	11	12	5					3	5	
4	5	5	10	5	3	5	12	12	10	10	5	15	18	17	17	12	5	10	11	10	15	5			
5		3	3	3	3	3	3	5	5	5	5	13	15	16	17	12	5	10	20	12	3	3	5	3	
6		ESE																							
7															11	12	12	12	10	12	12	13	16	13	18
8	15	13	10	5	5	10	15	15	15	17	16	17	15	15	14	17	20	20	18	15	10	12	15		
9	12	12	13	16	12	12	15	17	17	17	17	15	11	11	13	11	12	15	15	13	10	17	17		
10	17	16	15	17	16	12	12	20	22	20	15	12	13	15	12	15	15	12	10	12	4	4	4	4	
11	4	4	4	4	4	4	4	12	15	15	12	13	12	11	11	5	10	4	4	4	4	10	10	10	
12	5	3	3	3	5	3	3	5	5	5	5	5	12	3	3	3	3	3	3	3	3	3	3	3	
13	3	3	3	3	3	3	3	3	3	3	5	5	5	10	5					3	3	3	3		
14																									
15												3	3	12	10	3		3	12			3	3	3	
16	3					3		10	ESE	5	5						5	5	5	5	5	5	5		
17	10	5	5	10	11	10	10	10	10	12	10	5	5	5	5	5	5	5	5	5					
18		5	5	5	5	5						10	11							NE	5	3	3	3	
19																									
20																								SE	
21																								SSW	
22										12	10													10	
23	10	10	20	20	20	27	12	15	17	17	27	32	27	20	15	10		5	12	13	15	12	17	30	
24	17	12	20	20	20	35	35	32	47	45	47	47	40	40	22	30	20	18	20	25	30	37	32	35	
25	42	50	50	27	25	37	30	25	25	30	27	25	37	39	37	27	20	22	22	22	20	17	17		
26												20	15	15	22	26	32	32	35	42	47	47	37	35	
27	47	40	40	35	35	30	20	20	20	20	27	30	22	26	27	25	12	18	27	35	30	35	35	37	
28	35	27	45	35	40	45	42	35	35	23	47	35	27	23	15	22	15	15	10	10	10	10	10	10	
29				12	10	10																			
30										ESE					NW										
31										12	10	12	10	12											

TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—JAN. 1847.

	1	2	3	4	5	6	7	8	9	10	11	12
A.M.												
3	.	.	.	.	.	.	.	.	.	.0172	.	.
4	.	.	.	.	.	.	.	.0086	.	.0086	.0086	.
5	.0258	.	.0172	.	.0258	.	.	.	.	.	.	.
6	.0086	.	.	.	.0086	.	.	.	.	.	.0086	.
20	.	.	.	.	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	.0086	.0086	.0086	.
22	.0086	.	.	.	.	.	.	.	.	.	.	.
23	.	.	.	.	.0086	.0172	.0172	.0172	.0258	.0344	.0774	.0258
24	.	.	.	.0172	.0086	.0344	.	.	.	.	.	.
25	.	.	.	.	.	.	.	.	.	.	.	.
26	.	.	.	.	.	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.	.	.	.	.	.
28	.	.0774	.0774	.	.0472	.	.0516	.	.	.	.	.
29	.	.0386	.	.	.0086	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.	.	.	.	.	.
Total	.0430	.0860	.0946	.0172	.0774	.0516	.0688	.0258	.0344	.0688	.1032	.0258
P.M.												
3	.	.0344	.0344	.	.	.0516	.	.	.0344	.	.	.
4	.0172	.0086	.0086	.	.0086	.	.	.	.	.	.	.0172
5	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.0172	.	.	.	.	.	.	.	.	.	.0086
20	.	.	.	.	.	.	.	.	.0172	.	.0258	.
21	.	.0086	.	.0172	.	.	.	.0086	.	.	.0688	.0430
22	.	.	.	.	.	.	.	.	.	.	.	.
23	.0258	.0344	.0344	.0344	.	.	.	.	.	.	.	.
24	.	.	.	.	.	.	.	.	.	.	.	.
25	.	.	.	.0774	.1032	.1204	.	.	.	.0086	.0086	.
26	.	.	.	.0171	.0172	.0344	.0258	.	.	.0860	.0860	.
27	.	.	.	.	.	.	.	.	.	.	.0774	.0516
28	.	.	.	.	.	.	.	.	.0172	.0172	.0172	.0086
29	.	.	.	.	.	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.	.	.0086	.0086	.	.
Total	.0430	.1032	.0774	.1462	.1920	.1806	.0258	.0086	.0774	.1204	.2838	.1290

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—JAN. 1847.

Miles	N	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	56	14	215	2024	87	226	658	219	1903	298	745	252	.	.
No. of hours	5	4	47	193	10	26	52	13	63	7	24	16	.	.
Velo. pr hr.	.	3.4	4.6	10.5	8.7	8.7	12.6	16.7	30	44	31	16	.	.
Amt. Rain.	.043	.	.	.069	.017	.103	.370	.215	.836	.	.301	.077	.	.017

Considering from 6 A.M. to 6 P.M. day, and from 6 P.M. to 6 A.M. night, we have 3554 miles the amount of wind during the day, and 3022 during the night. .877 inches the amount of rain during the day, and 1.143 during the night. Total wind 6576 miles, rain 2.02 inches. The greatest amount of rain was from S.S.W. The number of hours during which rain fell was 72; and the number of hours during which the amount of wind is recorded was 460; during 284 hours it was calm.

ROYAL NAVY AT PORTSMOUTH.—In Port—*St. Vincent, Victory, Victoria and Albert* (in dock.) In Harbour—*Excellent, Dragon, Sidon, Birkenhead, Rattler, Myrtle, and African.*

AT PLYMOUTH.—In harbour—*Caledonia, Mariner, Rusamond, Avenger, Constance, Constitution.*

IN BARNPOOL.—*Recruit.* IN THE SOUND.—*Queen, Albatross, Express.*

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory, From the 21st of January to the 20th of February, 1847.

Month Day.	Week Day.	Barometer		Fahrenheit Thermometer				Wind.				Weather.	
		In Inches and Decimals.		In the Shade.				Quarter.		Strength.		A.M.	P.M.
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	A.M.	P.M.	A.M.	P.M.		
		In Dec	In Dec	9 A.M.	3 P.M.	Min	Max	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
21	Th	29.89	29.81	34	33	31	36	S	S	1	1	os 2)	os (3) r (4)
22	F.	29.75	29.71	34	36	33	36	SE	NE	1	1	odr (2)	of
23	S.	29.63	29.58	33	38	31	39	SE	S	1	3	bc	ber (4)
24	Su.	29.45	29.19	42	44	40	45	S	SW	5	6	or 2)	gor (3)
25	M.	29.22	29.36	40	44	39	45	SW	SW	6	5	qbc	qbcp (4)
26	Tu.	29.40	29.46	40	46	37	47	SW	SW	3	6	bc	qbcp (4)
27	W.	29.38	29.36	43	47	42	48	SW	SW	6	3	qbc	o
28	Th.	29.00	29.10	43	45	42	46	SW	SW	8	6	qbcp (2)	qbc
29	F.	29.33	29.34	36	39	33	40	SW	SW	2	2	bc	bcm
30	S.	29.46	29.53	32	39	29	41	W	NW	2	4	bc	o
31	Su.	29.58	29.63	37	38	35	39	N	NW	2	1	o	bc
1	M.	29.60	29.63	32	35	28	36	SW	NE	1	2	os 2)	bc
2	Tu.	29.80	29.74	33	35	30	36	N	N	4	6	bc	qos (3)
3	W.	29.83	29.91	33	35	31	35	NE	NE	2	4	os 2)	o
4	Th.	30.12	30.12	32	36	31	37	N	N	2	3	o	o
5	F.	30.13	30.03	32	37	28	38	W	NW	2	2	o	ogd 3)
6	S.	29.66	29.52	41	47	35	48	W	W	4	5	or 2)	qbc
7	Su.	29.50	29.38	34	32	32	34	W	E	2	2	os 2)	os (3)
8	M.	29.61	29.51	24	30	19	31	SW	SE	3	1	bc	os 3 4
9	Tu.	29.33	29.36	21	27	19	28	W	NW	2	4	bcm	bcm
10	W.	29.43	29.49	23	33	20	33	N	NW	3	4	bcm	bcm
11	Th.	29.66	29.76	32	35	25	36	N	NE	2	2	bcm	bc
12	F.	29.82	29.82	17	31	14	32	SW	SW	2	3	bcm	bcm
13	S.	29.98	29.98	22	31	21	32	W	S	2	2	bcm	bcm
14	Su.	29.62	29.60	40	43	25	44	SW	SW	4	2	or 1) (2)	or 4
15	M.	29.48	29.36	43	50	42	51	S	W	2	4	or (2)	b
16	Tu.	29.75	29.65	39	42	35	43	W	SW	3	3	o	or 3
17	W.	28.90	29.90	45	51	42	53	SW	SW	4	4	b	bc
18	Th.	29.94	29.89	49	51	47	52	SW	SW	6	6	qbc	qo
19	F.	29.99	30.07	43	47	42	48	W	W	6	6	qbcp (1)	qbc
20	Sa.	30.26	30.22	42	50	37	51	SW	SW	2	4	bc	op 3

January 1847.—Mean height of the Barometer = 29.824 inches; Mean temperature = 35.0 degrees depth of rain fallen = 1.34 inches.

TO OUR CORRESPONDENTS.

The account of the "Hurricane at Havana," from the Master of the William Murray has reached us.

The papers on "Great Circle Sailing," "The Estuary of the Exc," and "Australian Navigation," will be completed in our next.

Hunt, Printer, 3, New Church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

APRIL, 1847.

THE CARIMATA PASSAGE AND EASTERN ROUTE TO SINGAPORE.
By Capt. M'Kenzie.

THE passage from Java Bali and Lombok, late in the south-east monsoon is often tedious, as the south-east currents begin to prevail in October, and light winds, which frequently haul to W. and N.W. after passing Pulo Mancap. To strangers going that way, these hints may be of service. After leaving the straits of Lombok or Balli, easterly winds will carry you past Pulo Mancap. The best track thus far will be between Pondy and Galion, (safe in the night time), and then to the southward of Lubeck, going well to the westward of the Mancap shoal, and just giving the Discovery bank, and other dangers on the west side of the passage, a fair berth. Steer for the Eastern Montaran island, passing between it and the next westerly one, the passage is quite clear; steer then to the W.N.W. along the coast of Billiton. I would not go inside the Montaran shoals, as the wind there at that time of year is seldom more westerly than S.W., consequently a vessel will lie up high enough, from the East Montaran to pass south of Pulo Dogan, Taya and Sinkep (if possible to weather the last.) if not the straits of Dasse are quite safe, and quickly passed through with the tide.

On the western side, just beyond the narrows, there is a small bay on the Lingin shore, with good anchorage, wood, and water.

After passing through either of these straits, run for Singapore by Dryon straits. On the west side of Sinkep and Lingin, and through Dryon, there will be regular tides, and good slants of wind, with the Sumatras. It often falls calm before they come, and if the tide is foul,

a kedje that could be handily wayed, would be sufficient to drop, and the canvass then reduced; double-reefed topsails will do for the first puff, and nothing is lost by being prepared for a heavy gust, as I have passed, and seen many strangers passed by the country vessels when in the straits of Malacca in the height of a Sumatra, kept before the wind with all their canvass flying about, and of course, running dead to leeward, whilst the country vessel was running her course under snug canvass; and at daylight the other vessels out of sight astern.

I remember an instance of collision from this neglect of shortening sail promptly. Two or three vessels in company in Malacca strait, one night, were caught by a Sumatra. The second westernmost one, was snug before the squall came down, and going her course, the weathermost (and headmost also) on the contrary, held on, and was obliged to up helm, when the squall struck her, and with top-gallant sails flying, topsails on the cap, and courses flapping about, she ran into the quarter of the other vessel, and seriously damaged both.

On the east side of Lingin, the currents set to the southward strongly from the China Sea; and the wind often hangs at N.W. and North, so that little progress can be made, until Rhio straits are entered, and that is most likely a beat through, and then a westerly breeze must be expected to beat up with to Singapore. In my first voyage to Singapore in the months of October and November, I fell in with three vessels off Lingin going there for water; but bound to Singapore. Being short of water myself, having bullocks on board, I went in with them, knowing the place. We started again at the same time; they to the eastward through Rhio or Singapore straits, and myself through Dasse. I arrived six days before one, and ten or twelve before the others, the two latter having tried the outer passage to Singapore strait.

A few remarks with respect to Rhio straits may not be unacceptable. When making them from the southward, instead of passing east of the Topjes (or five small islands) in the entrance, steer for the west side of them; there will be a high island on the port hand; from this a N.W. b.N. $\frac{1}{4}$ N. course, will carry a vessel up to Pulo Loban, in a good channel clear of all dangers. This course will keep you well on the west side of the channel, and will avoid a spit that extends from Amsterdam, which is the first island N.N.W. of the Topjes. The western islands can be approached by the lead, excepting the high island west of the Topjes, which has 20 fathoms close to it.

After passing Loban and the first point north of it; keep that point due south, and that will lead clear of the Pau, and also of the reefs off Bintang. From the north entrance a course ought to be steered (if the wind is west) to get into soundings on the opposite shore, where, in case of calm or foul tide, no ground should be lost. The Singapore boatmen say, they always know a stranger by his keeping in the middle of the straits, whilst a country trader hugs the north shore. By leaving Singapore with the first of the ebb, Rhio straits will be entered with the flood, which will be a fair tide to Amsterdam.

The Pau shoal is an awkward patch, with no beacon on it, though twenty or thirty dollars would suffice to make a beacon of three spars.

The shoal in cloudy and rainy weather cannot be distinguished at all. There is a light hoisted on the Government hill, Singapore, every night, as a mark for shipping. I have gone in often at night, and the light from the houses in the town, were visible long before this, and more brilliant, so it is really not needed. Money has been subscribed by many some years ago, for a lighthouse on Pedro Branca, which would be of real utility.

As to beating down the Carimata against the south-east monsoon, I believe the best plan is to go through Rhio strait, then stretch over to the Borneo coast, and work down it close in; anchoring for the tides. From Rendezvous island make for the Java shore and if bound easterly work along it. This passage is easily made to Sourabaya in fifteen to twenty days. But it is beating up from Balli, Lombok, or the east end of Java, in the west monsoon that requires some remarks; and for vessels usually deeply loaded with rice, it is a difficult thing to beat up against a strong monsoon, and lee current. Two routes have been generally adopted. One to the southward of Java, and the other by beating up the Carimata. By both these routes I have known some vessels get to Singapore in forty days, and some have been fifty, sixty, and eighty days. I should say sixty was an average passage from Balli or Lombok; and the vessel much strained, sails worn, and cargo probably more or less damaged. I should, therefore, confidently recommend an eastern route, which I have no doubt has been by this time followed by the commanders of Balli vessels, at my suggestion. This is, to go through the Molucca, or even Gillolo passage, and then with the N. and N.E. winds, through the straits of Balabac into the China Sea, and thence to Singapore. A fair wind would be secured all the way, and the passage made in twenty-five or thirty days, with ease and comfort to the vessel. This may seem a very circuitous track, yet I am certain that it is the quickest way to Singapore. And any one who had once tried either of the other routes, would find the difference, when comparing with the eastern route, the harassing work from Pulo to Singapore, and the strong rush of current from the China sea that begins so early as October before the N.E. monsoon has set in.

There is a shoal reported to exist N.W.b.N. from east Montaran island, though I have often passed there and have not seen it. There is also a shoal of coral rock westward of Ontario reef, three miles; it was passed over in 3 fathoms, by the schooner Jupiter, Capt. Peterson. There is another east of the north point of Lingin, not in the track of vessels, unless beating down. There is yet one more, on which the Frederick the Sixth was lost lately; it is directly in the track of vessels from the Carimata bound to Singapore, east of Bintang. I do not see either the wreck of this vessel, or the Duke of Lancaster, lost on a reef in the China sea, in your Magazine. I took a memorandum of the position of the former vessel's reef, when I was in Singapore: the lat. is $0^{\circ} 35' N.$ lon. $105^{\circ} 19' E.$ High land is seen at a distance, bearing S.W. and islands in distance W.N.W. It is a small round rocky patch, about three cables in diameter, and shoalest water 2 fathoms, deepening rapidly to seventeen fathoms. Water may be got in the Carimata, at Camata, at Pamu-

bangan, St. Barbis, and Lingin, with abundance of firewood. As I have not seen any account of the reef where the Frederick the Sixth was lost; I suppose you have not heard of it.

[The account of a ship belonging to the Peninsular and Oriental Steam Navigation Company having recently been lost on it, will be found among our Nautical Notices.—ED.]

OBSERVATIONS ON MAKING THE PASSAGE TO THE EASTWARD THROUGH TORRES STRAIT, AND THE MONSOONS IN THE TIMOUR SEA.—*Loss of the Heroine.*—By Capt. M'Kenzie.

(Concluded from page 117.)

FROM this anchorage, with a northerly wind, we steered to go to the eastward of the great reef, east of Haggerstone Island, but the sun being a-head, I did not see the reef till the lead showed the water shoaling rapidly to 5 fathoms. I came to for a time, to see where the shoal spots lay; one was close on the land quarter with only 3 feet on it: to starboard there was 3, 4, and 5 fathoms, the tide running strong, and as she was not to be canted to starboard by the sails, I was obliged to lay out a kedge to port, hove up the anchor, and slipped the kedge, which was lost as the tide took the buoy under. A few tacks took us into deep water, when I ran between the reef and Haggerstone Island, and saw the schooner I expected to meet, on the S.E. side of the reef, near the wreck of the Maid of Athens: and shortly another between the Pipers Islands. Passed them at 4 P. M. At 6h. were abreast of Cape Fair, where the wind hauled to westward off the land, light with rain; did not make much this night. At daylight Restoration Island in sight, passed it at 7 A. M. This day moderate northerly breezes. At noon passed Cape Direction, and at 6 P. M., were abreast of Night Island.

From here to Cape Sidmouth we had two days of light N. and N.E. winds. On the morning of the second day saw a schooner at anchor under a sandy island S.E. of Cape Sidmouth. Sent a boat a-head to board her, found her to be the Thomas Lord, of Sydney, trepanging. She had found water to the southward of the cape, but the natives were hostile, and they were fearful of landing oftener than necessary. This day a moderate N.E. breeze blew until after sunset, when we were to the southward of Claremont Islands. During the night the wind was light from E., we stood to the southward, into Charlotte Bay. Next day the wind still kept E., and at noon we were close to the eastern dry bank; stood to the southward into the bight, and worked to N.E. along shore, and at 10 P. M. came to on the westward side of Cape Flinders, in 9 fathoms water; the breeze increasing from the east.

At daylight wayed with the tide, and beat through between Clack Island and Cape Flinders, found 18 fathoms close to the reef bordering Clack Island. I stood to the N.E. between Pibon Island and the Woods Islands, west of them, where it is marked, light coloured water,

and carrying 15 and 16 fathoms. About five miles from Fibon Island were two small sandbanks, and reefs to the northward of them, in the distance; it appeared quite clear between these islands, and the light water was probably only a line of tide. This night light east winds, anchored under the lee of Fibon Island in 10 fathoms. At daylight wayed with light east airs, and passed between the islands and Cape Melville; sent a boat to the south, and found the remains of native fires and the shells of turtle. Several fires were seen on the main during the night. Towards noon the wind increased, and hauled to E.N.E. but died away by 8 P.M., when we passed Point Barrow.

At daylight next morning Noble Island bore S., three or four miles. At 10h. light airs, abreast of the middle Howick Island, came to with the stream, and went with two boats to the main land. Landed on the north point of the bay west of Coles Island. The land here was sandy and barren, the trees mostly bent to the northward, showing south winds prevail; there was abundance of fresh water to be got by scraping a hole in the sand above high-water mark; at 1 foot, or 18 inches, the water flowed in freely. In the bight of the bay there were several canoes with out-riggers: and a path leading inland, which we followed some distance, until we came to a well, and a few huts formed by branches placed to windward, but no natives were seen: probably the party was too numerous and they were fearful. I called at Coles Group coming back, they are mostly of dead coral.

At midnight wayed with a light N.W. land wind, and at daylight the Turtle Group bore S.E. five or six miles: here saw several canoes, sent a boat manned by Port Essington natives, to try and get them to come alongside; they could not understand each other, but after some time, they boarded us. They were fine, large, and fleshy men: they had some knowledge of the effects of firearms, as, on putting the spy-glass to my eye, they all fell down flat and put up their hands, as requesting me not to fire. As I had prepared everything for leaving a party to collect *biche-le-mer*, I anchored under the lee of the Turtle Islands, and selected the smallest island for the place to build the tents, &c.; Dr. Lichhardt kindly taking charge of a boat which was going to the main to see if there was water, he thinking that there would be plenty found all along this part of the coast. The stores and all necessaries were landed, firearms and ammunition for the number of men, and two two-pound swivel guns, which could command all parts of the island, or rather sandbank, as the natives seemed to have a number of canoes, and were well armed with all the Australian weapons. We went on the neighbouring islands, where the natives had hauled up their canoes, and found them eating turtle, of which many shells were hung up in the trees; they had larger shells in the ground for the purpose of catching rain water. One man was dreadfully disfigured, by one side of his face being eaten away by a cancer. I gave them a little rice and iron hoop and they seemed highly pleased. In the evening Dr. Lichhardt returned, and announced that there were several wells, and water to be got plentifully by digging. There were also many natives about and several canoes.

The next morning landed the party, fifteen in all, with the first

officer. The long-boat cutter rigged, and a small boat, were left with them. The anchor was then wayed and we proceeded on our voyage, with light breezes at S.E. At 6 P. M. abreast of Cape Flattery, the wind hauling more to seaward. At midnight passed Cape Bedford, and at 3 A. M., when feeling the way with the lead, being abreast of the reefs off Endeavour river, saw a vessel, apparently at anchor, luffed up boldly for her; when near her saw the reef close aboard, and got less water very suddenly; laid all flat aback, and when in a good berth came to. The vessel was the *Castlereagh*, tender to *Bramble*, which vessel being inshore of us, was passed unseen. The *Castlereagh* had touched on the reef but soon got off. Lieut. Aird boarded us and kindly sent a turtle for us. I gave him the position of the rock on which I struck in Endeavour Strait. At daylight we both wayed and parted, at 8h. it came on thick with S.S.E. winds. At 6 P. M., came to under the lee of Endeavour reef, the same weather continuing till noon next day, when we wayed, and beat through between Endeavour reef and the islands; the channel is much narrower than is marked on the chart, and a long reef extends from the eastern extremity of the north island; passed these at 6 P. M., the wind hauling to eastward.

At daylight next morning the wind backed to S.E. with rain: abreast of Cape Tribulation, the tide running strong to the northward, came to. The tides here beginning to slack in their strength, when running to the southward. At noon wayed and made but little way, at sunset light variable airs and rain; came to. At daylight moderate E. winds, wayed, and at noon passed Snapper Island; at 4h. passed Low islands, wind veering to S.E. with rain. At 8h. calm, and the tide setting north, came to with stream, in 10 fathoms; at midnight blowing strong from the south-east, and not being inclined to lose what I had gained, by running back to anchor under the lee of the Low islands, let go the best bower, and gave a good scope of chain. By daylight the wind increased to a gale, the top-gallant-yard and mast were sent down, and main-top mast struck, and 30 fathoms of the small bower chain, shackled to the stream, and veered out. The same was done to the best bower. This gale lasted four days; attended with heavy rain; at the same time, according to my mates, the gale blew from the northward at the Turtle Group, with a much longer continuance of rain. The *Thomas Lord* was driven on shore, and lost her false keel and rudder; where she was lying further north.

Wayed anchor when the gale was over, which took nearly six hours, as there was 105 fathoms stream, and about 120 best bower chain out, and the bottom was mud. Towards evening a fine land breeze came up and by 4h. next morning Cape Grafton was passed, but when round it, the tide ran without ceasing to the northward, and the wind backed to S.E., after sunset we came to under Cape Grafton. Next morning tried it again, and by tacking close in-shore, got as far as Fitzroy Island by noon, blowing hard from S.E., came to. There are several streams of water at Cape Grafton and Fitzroy island, many native fires were seen and paths in the island, with remains of fires and fish. At daylight, next day, wayed and tried to get between Fitzroy Island and the main, but the tide not slacking, after thrashing about all day, came to again:

found the jaws of the main gaff sprung. This day a continual brisk gale from S.E.; at daylight went ashore and cut new jaws for the gaff: busily employed this day in fitting them and watering. At daylight wayed, and passed between the island and main. At noon calm, came to hold on against the current. At 2 P.M. a moderate E. breeze, wayed, and at midnight passed the Frankland with light S.W. winds; at daylight abreast of Point Cooper. This day light E. and S.E. breezes; at 8 P. M. calm, came to abreast of Barnard Group. Midnight wayed, light land winds, here the tides began to be more regular, and helped us to the southward. Daylight, Dunk Island S.W. Noon, light E. and S.E. winds, past to eastward of Bookes Islands. Sunset passed Cape Sandwich,* and at midnight calm, came to near Point Hillock. Daylight, light E. breeze, wayed, and at noon abreast of the north end of Palm Islands; at 9h. passed the south point and rock. Midnight, light E.S.E. winds; at daylight Magnetical Island, S.E. From this the winds were constantly at S.E. and E., sometimes veering a little to the northward, in the afternoon. The tides mostly ran in the direction of the channels and pretty regularly, running longer to the northward when strong S.E. winds prevailed. There is good water and good anchorage on the west side of Gould Island and Cape Upstart.

The *Heroine* left Sydney, with a small cutter the *Ariel* in tow, in company with the *Enchantress* and *Sapphire*. After clearing the heads, kept close in shore to avoid the southerly current. When abreast of Point Stephens got strong N.E. breezes which lasted seven days, and much retarded our progress; the breeze generally blew very strong in the afternoon and night-time, often bringing us to double-reefed-top-sails. Near daylight it usually fell calm and the currents drifted us about sadly. One morning in a stark calm the *Enchantress* went away to the north-westward, hull down, in a couple of hours, though she was in speaking distance of both the *Sapphire* and *Heroine* before. We rounded Break Sea spit on the 21st at 1 A. M., with moderate easterly winds, at daylight passed the south Bunker; at noon light airs and calms; at 4h. moderate N.E. winds; midnight more easterly; at daylight Cape Capricorn S.W., increasing breezes from S.E. At noon strong S.E. winds, Peak island N.W. At midnight Peak island, No. 2, bore W. four miles. At daylight Percy island bore S.W. ten miles; at 8h. fresh S.S.E. and rain; at noon passed between Hummock island, K., and the sandbanks to eastward; thick rainy weather and fresh S.E. winds; at 6h. more clear, passed to westward of the dry sand, about six miles, and made signal to the others to speak, and gave the course for the night, N.W. $\frac{1}{2}$ N. till 1 A. M.; the distance was 58 miles from the reefs. We were going 6 to 6 $\frac{1}{2}$, and a current of $\frac{1}{2}$ knot per hour, giving a distance in seven hours of 49 miles.

At 1 A. M. showed the light to alter the course, and kept away N.W.b.W.; while preparing to jibe the main boom for a W.b.N. course, just then the vessel struck aft; the helm was put to starboard and the light thrown overboard; she was answering the helm rapidly when she struck again with terrific violence: the reefs now the light was out, were

* Reefs were seen about ten or twelve miles to the eastward of Cape Sandwich.

visible on the port bow and starboard side. Seeing that there was no chance of getting off, let go the peak topsail, and foresail halyards by the run, and ordered the crew of the *Ariel* to cut their warps and let go their anchor, they lying in the smooth under our lee. The reef being small, the port anchor was let go for fear of forcing over into deep water, and the lee boats ordered to be cleared away. The vessel striking tremendously all this time, at the third or fourth time, the fore-topmast went above the cap, and the main-boom unshipped and went like a battering ram along the port side of the deck, probably disabling some of the crew who were afterwards missed. Directly after she heeled to port and went down in deep water, on the weather side of the reef, sinking in about 5 or 6 fathoms, after striking the davits, hooking into the boats, which had been only partly lowered, and took them down with her.

The whole of the crew and passengers got on board the *Ariel*, at different times during the night, with the exception of four passengers and three of the crew who were drowned. For myself, having a young child three years old, in one arm, and being heavily clothed, I could not fetch the boat, the tide running along the edge of the reef carrying me away. After considerable time I got into a heavy tide ripple and eddy which turned me round and round several times, and took me under: in my drowning struggles I must have parted with the child. I fortunately rose in a smoother spot, and when a little recovered, took off my clothes and merely floated until daylight, the heavy seas often breaking over and completely swamping me. At daylight I saw the *Sapphire* some distance from me, and was picked up by her boat when I was in speaking distance of them. The remainder of the crew got the *Ariel* off at high water, set their sail and made for the *Enchantress* which vessel sent her boat and three hands, who boarded the cutter, made their boat fast astern, and sailed to the *Enchantress*; the crew were then divided between the two vessels. Don Angelo Confalonarie, a Roman Catholic missionary, who could not swim, was saved by one of the dogs.

I shall now try to explain, as well as I am able, what I consider the cause of this dreadful occurrence and loss of life. From noon to 6 P.M. we ran from K island to the outer sandbank, a distance of 30 miles nearly, the tide then against us, making the progress over the ground 5 knots. From the sandbank to the reef is 58 miles, and a fairway course, N.W. $\frac{1}{4}$ N., the steering compass showed a $\frac{1}{4}$ point more northerly than the azimuth compass used to observe the variation, and consequently a N.W. $\frac{1}{2}$ N. course was steered. We had averaged 5 knots against the tide, and as the wind was steady, $6\frac{1}{2}$ was a fair allowance with it, I gave her 7 knots; she was going 6 by the log which would have placed her 9 miles from the reefs at 1 A.M. The *Sapphire's* position was nearly the same as mine on her chart, and the *Enchantress* 4 or 5 miles to the southward. I can only account for the increase of current by supposing that the strong N.E. winds previous had caused an accumulation of water in the bight, and the S.E. wind had brought up a rush of tide with it. For when bound down to Sydney, I an-

chored several times during calms amongst these islands, and found the tide set barely $\frac{1}{4}$ knot to W.N.W., and this after strong S.E. winds had been blowing.

For the unfortunate loss of life, I can only say that there were three new boats in the quarter-davits ready for lowering, the preventer lashings having been removed when the Bunkers were passed: and the boats hung merely by the tackle falls and gripes. I had always made it a rule to have the boats in readiness, oars, masts, sails, &c., always in them; but the time between striking and sinking was so short, and in a dark night with a vessel striking heavily, it was impossible to get them lowered in the time.

The two vessels passed close to us on the port side and worked to the southward all night; when at daylight they found themselves to leeward of us. From this I am inclined to believe that this is a detached patch to the southward of the other reefs, and our course steered after leaving the wreck was W.N.W. On the voyage down, when beating through between these islands and reefs, I noticed a place near there that had apparently strong rippings. The lead was not used, as the reefs I previously knew, were steep to and the same depth, about 35 fathoms, extended across to the islands. I never spared the lead when it was likely to be of any use, and there was always one stretched forward, for the look-out to drop at a moment's notice. There was a good look out kept, but at this time a brilliant light was burning which cast such a glare, that it was impossible to see the breakers at the time. I was in the starboard boat giving orders about trimming sails. The vessel sank in 9 fathoms, her main-topmast-head being just above water. The two remaining vessels proceeded on their voyage, and on arriving at Turtle island I found the *biche-le-mer* party had left. They afterwards boarded us off Homes island. The mate had gone thus far north, as the natives had made a night attack on the island: fortunately he had seen their canoes, by his glass, go from the main to the next island full of men, and as it was a very unusual thing, it put him on the *qui vive*. All the arms were loaded with pistol-balls and the swivels with bags of musket-balls, and good watch kept. They came in seven or eight canoes at about 2 A. M., and on being hailed and told not to land, a shower of spears and a dash for the shore was the reply. The first boat's crew landed, and two other canoes only beached; but, before they could land, two vollies of musketry were poured into them at about four or five paces distance, which was so destructive that only three or four were left standing in one canoe. The remainder hauled off: and the next morning the three captured canoes were burnt in sight of the others who were on the adjacent islands.

Being fearful now of continual harrassing attacks and interruption, they embarked all the stores that the boats would carry, and buried the remainder, and then sailed northward, with the intention of being near the Thomas Lord, for mutual protection. After being obliged to lighten the boats they at last came up to that vessel at Cape, and found that after having been ashore and severely damaged her keel and rudder, &c., they had tried to beat down to Sydney, but not being able to do so had

determined to bear up. From Cape the *Heroine's* boat led the way, and passed inside of Flinders islands, a good passage and plenty of depth, there are also several streams of fresh water. When they arrived at Haggerstone island it was proposed, with the assistance of Mr. Rae's party, to repair the vessel. Here the superior subordination of the Malay seamen was of great service, as they worked willingly at the strange vessel, whilst her crew were disobedient and disorderly, threatening to go away in the boats, and plundering the stores; and the commander was obliged to stave in the spirit casks to keep them from open mutiny.

About this time a number of New Guinea canoes came down, most probably in search of wrecks, they brought some tortoiseshell with them which they exchanged for iron, &c. After the *Thomas Lord* was completed, she sailed for the northern part of the straits, and lately I have seen an account of the death of the supercargo, Mr. Besant, who was cut off by the natives.

Whilst the *beche-le-mer* party were at the Turtle Group, a white man came to them out of the bush, and said that he had been wrecked in a boat, and been several months with the natives, who had used him as a slave, making him do all their work, &c.; the probability is, that he was a runaway convict. He was received and afterwards put on board of the China schooner *Ariel*, as Mr. Rae had no wish for such a man amongst the Malays, and no provision to spare. After leaving the island, this man said that when the natives went inland, where they were not likely to find water, they took a quantity of the roots of a shrub which contain a quantity of juice like water. Here was also a root like a small potato that they used for food. These were found on Haggerstone island. Arrow-root also was abundant. Water was got on Cockburn and Sir Charles Hardy islands in pools.

Both Capts. Millar and Essinghigh received the crew of the *Heroine* with great kindness, and supplied them, as far as they were able, with clothes, they being all nearly naked, when received on board the vessels; and Capt. M'Kenzie will always remember with gratitude their great kindness and attention to himself and crew all the passage to Balli, where they were landed and forwarded to Sourabaya.

THE CINQUE PORTS AND THEIR LOCALITIES.

ORAL tradition must have had some origin more worthy than the love of the marvellous, or the idle inventions of mankind; in days long past it was regarded with extreme veneration; the names of places and of things were carefully preserved, and transmitted from generation to generation, as an unfailing register of sudden casualties and extraordinary events. The mind of the historian may be warped by national prejudice, or misled by ignorance, but the antiquarian will find in natural causes, and their effects, proofs in oral tradition too strong to be refuted by books, many of them of doubtful authority although the productions of monastic or

secluded men. It is very natural to judge of the capacities of our fellow men by our own feelings and standard; hence, a learned writer on the antiquities of Dover expresses a doubt as to the precise situation of Julius Cæsar's army, and the proximity of Cassivellanus, with his warlike Britons, because "The sending a messenger sixty or seventy miles, through an uncultivated country, intersected by two large rivers, would certainly have retarded the business." Did he then believe that the hardy barbarian of Britain was less of a man than the Mohican of the American forest, or the Cisalpine Gaul of coeval history? What would have been such a distance to an Indian following the trail of his enemy? What to the skin-clad warrior of Albion, rushing towards the frontier of his invaded country, and excited by the war-cry of his chief? Yet the same writer assures us that Cæsar was awed by the warlike appearance of the Britons, who lined the shore to oppose his landing, and that he sailed a considerable distance along the coast before he attempted to disembark his legions.

In a history of the Isle of Thanet, a feeble attempt has been made to throw doubt on oral tradition, and to prove that the extraordinary changes which have taken place in its neighbourhood were brought about by the gradual recession of the sea; yet had the reverend author been as good a geologist, and mathematician, as he was an amiable pastor, he would have perceived that he has negatived his argument in his own pages, where he describes the burial place of Ethelbert as a fortress now covered with the deep, yet at some times in very low tides visible—its demarcation perfect—the strata around it abounding in Roman pottery, coins, and armorial fragments, &c. The latter is a well-authenticated fact. The Reculver Rock is unquestionably the ruins of an ancient fortress, at a comparatively short distance from the churches, which (but for the artificial means used to preserve their remains) would soon share the same fate. If the recession of the sea from the estuaries on our coast had been gradual and progressive, how could we possibly account for the extraordinary discoveries continually made in our tracts of marsh land? The Richborough Channel and Wantsume was an extensive oyster ground according to Tacitus, Antoninus, and others of the Roman writers.

If we dig a well in many parts of the marsh, the first soil gives place to a confused mass of marine substances, flints, and fossils, hurled indiscriminately together as if by a sudden bursting in of the sea in its fury; and to these succeed a line of shelly stratum, regularly deposited, as is the method, with all the beds or reservoirs of oysters. In tracing this stratum to that part of the coast near the Reculvers, where the entrance of the channel existed, we have a convincing proof that it was no gradual recession, but a more violent operation of nature, which destroyed this and the several other armlets of the sea upon our coast. Here, upon a stratum of disrupted chalk, united by a muddy cement, is a deposition of sea-sand, shell, chalk, flints, and other marine substances, in an undistinguished mass; not in regular lines, but, to use the language of Fussel, "resembling the figures upon what is called marble paper." Above this variegated stratum is a layer of light sand and pebbly flints, about two feet in thickness, being the last deposit of the waters. What but a ter-

rible inundation, or stormy convulsion of nature, would have produced these effects and appearances, and thus have choked the mouths of the channel? Are there any proofs, then, of the gradual recession of the waters? What has become of the land around the Reculvers—of Whitstable street, and great part of the Island of Sheppy? 'They are all existing proofs of the impossibility of the sea having gradually retired from a navigable channel—converted the anchorage of navies into smiling pastures—and, at the same time having covered for ever the stone-built fortress, in the immediate vicinity, or buried the greater part of a town a few miles distant, in the bosom of the deep.

That a most extensive devastation did take place upon the coasts of the Northern Sea and British Channel in some period of the Saxon heptarchy, is generally believed in the history and traditions, both of our own country and Belgium: treating it, therefore, as a matter of amusement and speculative inquiry, we will begin with the Cinque Ports; and, in comparing their present topography with their ancient traditions, I think we shall find that the mighty waves of the ocean do not abandon their empire; but, while they encroach upon our chalky cliffs and promontaries, undermining their bases till their nodding crowns are precipitated into the restless tide, they have in no one instance left proof of a retrograde movement, except where, by the erection of breakwaters, natural causes are counteracted by artificial means.

It appears, from history and tradition, that the Romans had fortified those prominent features of our coast, which in after years the Norman invaders designated the Cinque Ports. It is also evident that the Romans selected the most eligible places for the reception of their fleets and the encouragement of general commerce and intercourse; their being on a parallel with those ports in Gaul, from whence their armies would embark on their continual and successive expeditions, and affording so many immediate and direct keys to their newly acquired dominions. That they would also erect piers and moles for the better protection of their navies, is without a doubt: it was always the first employment allotted to the conquered by their victorious consuls. Hence, we find the port of Civita Vecchia, or Rome, was entirely raised by the Egyptian slaves, in the reign of Trajan; and the manner of building, with those people, afforded quickness of dispatch and solidity of structure: caissons were formed, and huge masses of rock placed in them; the intermediate spaces were then filled in with a liquid cement, which, as it hardened, penetrated into the more porous substances, by which means it was firmly attached and became an impenetrable and solid mass. Those who have travelled on the shores of the Mediterranean, and observed the magnificent moles of ancient engineering, will find the stone, in many instances, worn away by the restless waters, and the cement, hard as adamant, defying their power. Admitting, then, that the Romans, when established in Britain, pursued the same line of policy which they adopted in Liguria and Gaul, what has become of the harbours they constructed, and why are their remains buried in oblivion, while the moles and piers in the Mediterranean still exist as imperishable monuments of their former skill and energy? Was the material on our coast less durable?—No!

Dover, Studfall, Richborough, Chilham, and other fortifications, exhibit a cement in their walls from which the tool of the mechanic recoils as though it had struck upon iron. Is it rational—when we inspect the ruins of these once powerful fortresses, the strongholds of a renowned and enterprising people, or when we accidentally lay bare a suit of magnificent baths, and costly pavements (as at Dover, beneath the old church)—is it rational to suppose they would neglect a shelter for their navy, or build a line of fortifications where there existed no pier or harbour to protect and defend? What then, we will ask, has produced the difference?

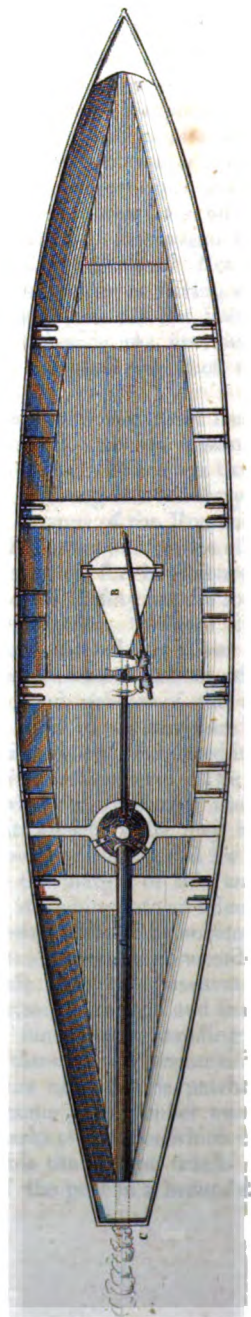
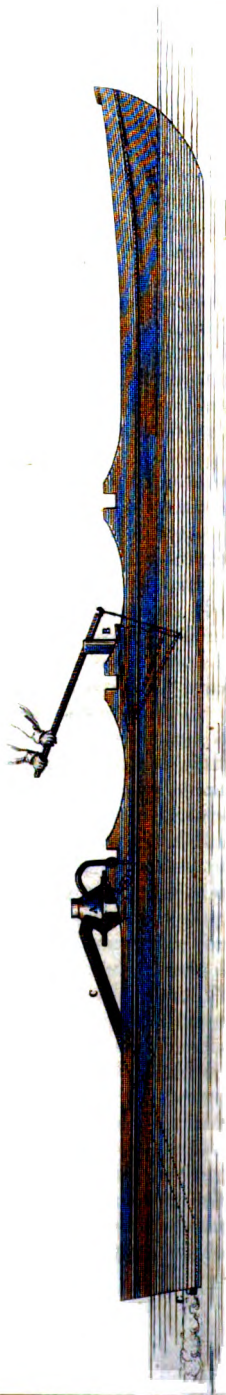
The practical engineer will have no difficulty in solving this problem: the Mediterranean has no sensible tides—no considerable rise and fall of its waters—no recession of distance from high water mark, leaving its harbours dry, and then rushing in a mighty flood, rising to an elevation of twenty feet in a few hours, impelled, perhaps, by the sweeping hurricane, driving its resistless billows in terrific grandeur to the strand, and fearfully overleaping their ancient boundaries; thus creating changes upon our coasts of which the Mediterranean is not susceptible: by such causes, most probably, the Roman ports were ruined, at a period when the energies of the projectors were withdrawn from the aid of a country then retrograding as fast as the arts and arms of its conquerors had called it into civilization and power. Britain at that period of its history must have resembled an adopted child suddenly deprived of its foster parents, and exposed a prey to the world. If we may believe Tacitus, Marcus, Flaminus, and others, they were an intuitive and noble-minded people: but the age was a sun of glory sinking into a night of darkness and ignorance—clouded by superstition, and debased by barbarity. The Britons were again conquered, not by the exalted and immortal legions of Rome, but by the rude unpolished warriors of the north; the Britons were enslaved, and their local history and records perished with their freedom. The early Saxons were careless even of their established towns; adventurers of the European seas, and warriors of the forest, they neglected the establishments so necessary to a more social and improved state of society, and their rule in Britain has very properly been termed by the historian the dark ages. What wonder, then, if the decay or destruction of the noblest relics of antiquity was unheeded or despised; or that the earthquake or tempest was ascribed to the anger of their fancied deities, in lieu of being recorded as natural phenomena, for the instruction of succeeding generations? The Normans were not so slow in appreciating the value of the Roman fortifications. Governors were appointed to improve the stations, and from them they received the appellation of the Cinque, or Five Ports.

Which of the towns was first honoured by this mark of distinction is at present mere conjecture. Hastings being contiguous to the conqueror's descent, and presenting a bold outline of ruins upon its aged cliffs, was most probably the western station, as it would flank and overlook the level of Bexhill and Pevensy. According to tradition and history, Athelstan had a mint at Hastings, and the old town had a very fine harbour, the site of which is now called the Stade; and I was once gra-

tified by a view of the foundations and massive stones of the said ancient pier. It was a very low ebb, and crowds of people flocked down to the shore to examine that which they had so often heard described by their fathers. The piling extended still beyond the margin of the receding tide, and the encroachment of the sea must have been to a great extent; for the visitation is recorded as having effected the complete destruction of the old town of Hastings. An insignificant wooden pier was erected upon the ruins; but this shared a similar fate during a tempest in the reign of Elizabeth. The sea continues to encroach upon the whole of this line of coast; and, after washing the shore around the noble cliff of Farleigh, we are again attracted to an account of its ravages by a view of the interesting and picturesque town of Winchelsea. Not a vestige of the old town remains. It is described in history as having contained eighteen churches, and a great population. The site has been covered by the sea for ages, and the date of the calamity was previous to the Norman conquest, and most probably at the same period of time with Hastings.

Here again we have the most positive proofs that there has been no gradual recession of the waters, but a sudden and overwhelming tempest, accompanied probably by an earthquake. Here was that extensive arm of the sea, which, uniting and receiving the tributary streams of the Rother, was called the *Portus Lemanus* of the Romans, having the havens of Winchelsea, Rye, and Romney, the castles of Studfall and Lympne, with several minor fortifications, for its defence. This, in ancient records, was styled the Haven of Safety on the south coast of England; and, as Fusell emphatically observes, "Where ships once sailed, cattle are seen grazing. Where once flowed the River Lympne (or Rother) is now an expanse of level fields, where patches of verdure are strikingly intermingled with the sand and pebbles of the sea-shore which have blocked up its channel and choaked its harbours." From among this stratum a vessel was raised, which has been exhibited in the vicinity of London as a relic of Roman naval architecture. The environs of Studfall castle are the best points of view for comparing the levels of the marsh; and in the massive ruins of its ancient walls may be traced the holes from which mooring rings have been suspended for ships to make fast to. An extensive forest lined the margin of this once noble port, its length, in a north-west direction, stretching into an inland district upwards of a hundred miles. This fact being attested by ancient writers, we are inclined to look for the proof of its existence; and, accordingly, we find that, wherever drains, wells, or canals have been excavated, large trees have been found imbedded in the masses of shingle and marine substances, thrown in by the ocean, and in most places standing in their natural position, protruding as it were, through the encumbering beds of flinty pebbles with which the whole line of marsh is patched. The only singular exception is this, that in some places timber was found as black as ebony, quite perfect, with the marks of the axe which had felled it, and the dismembered branches beside the parent trunk. *Acorns*, *chesnuts*, and forest fruit, are dug out of the peat in a beautiful state of

The discharge of the hot products of combustion from the close furnace A, through the pipe C, by one stroke of the bellows B started the boat (weighing in all 437½ lbs) from a state of rest, 3 feet in 2 seconds. An impact as good as any which can be had by any Paddle Wheel or Screw Steamer.



Alex. Gordon.

preservation; hence many have inferred that the inundation took place in the autumn, before the trees had shed their honours.

The sea, it would appear, had thus done its worst upon this point of coast, having destroyed the old towns of Hastings and Winchelsea, and, lifting from its secret bed an overwhelming mass of shingle, hurled it into the mouth of the Lympne (or Rother); and, choking it up, at low water it would exhibit an immense flat of loose swampy marsh land, having a complete peninsula of sea-beach at Dungeness, extending for several miles into the British Channel. The natives would then progressively form embankments to stop its further progress and ruinous effects, and in the course of time the advantages they gained induced them to unite and make a simultaneous effort for the security of their possessions. Accordingly we find that upwards of fifty thousand acres of the finest land in Europe was regained from the sea by the formation of Dymchurch Wall. Henry de Bathe and his colleagues obtained from King Henry the Third a royal grant, called "The Statutes of Sewers," in which statute they were styled "The Lords of the Level." What a pleasing retrospect it brings to the mind, as the eye of the antiquarian surveys from this proud embankment the beautiful expanse of patronage, covered with milkwhite flocks grazing peacefully, where the surge once rolled in maddening fury to the desolated shore. Studfall, whose base stood upon the strand, is now in the centre of a fertile district;—and imagination may then pourtray the Portus Lemanus, when, in the reign of Alfred, the Danish fleet sailed up to Appledore, and destroyed it with fire and sword. The little rural village of Appledore, now ten miles from the sea, was then a maritime and principal town of the Anglo-Saxons. The river, then navigable for a large fleet which had crossed the Northern Ocean, is now a narrow, muddy stream, emptying itself, through the little harbour of Rye, into the bay which is formed by the projecting bank of sea shingle at Dungeness.

RESULT OF EXPERIMENTS MADE WITH THE FUMIFIC IMPELLER.—*By Alexander Gordon, M. Inst. C. E.*

THERE are two methods of moving bodies by inanimate power contained in those bodies. One is by combination of combustibles and a supporter of combustion in furnaces of boilers, for the generation of steam. The other is also by the combination of combustibles and a supporter of combustion; but it is in a rocket-case, for the generation of very elastic aeriform matter.

The first is the method known to us in locomotion, whether by water or by railway. The second method has not yet been employed as a means of intercommunication. The intimate combination of the combustibles and the supporter of combustion in a rocket-case, has been admirably adapted for the projection of signals and of missiles of war, but is not yet adapted to the necessities of the carrying trade, where much safer mechanical and chemical actions are required.

The locomotive powers, both of the steam-engine and of the rocket, is derived solely from the action or agency of heat, and I request especial attention to the two methods by which the same power of heat has been used.

That of steam is the result of a *transmission of part* of the heat from the fire to the water, and thence through the elegant apparatus which has dignified the names of Watt and of Trevethic.

The locomotive power of the rocket is had by the direct application of the hot products of combustion themselves, for impelling these bodies in air or in water, without the intervention of machinery; and, let it be observed, that it is by making use of all the heat generated, and all the heated bodies put in motion.

It is impossible to deny that heat is the source of power in the instances referred to.

The steam-engine owes its general adoption, to the beauty of its mechanical adaptations to the necessities of tender and easily condensed steam, which mechanical adaptations are of no use when permanently elastic, heat-carrying bodies are to be employed instead of steam.

From time to time, the law of the specific heats of water and of air, which is so decidedly in favour of the latter* has led men of high mechanical attainments to venture from what may be called the steam-channel, and to attempt the formation of a prime mover, by bringing the improvements of the steam-engine to subserve the application of air heated by transmission, or the application of the products immediately obtained from combustion, and thus to actuate some modification or imitation of the steam-engine. They took the steam-engine as their prototype; I take the rocket as mine. They differed from their pattern by changing the elastic medium only; I differ from my pattern by changing the supply of the support for combustion and of the application of the power when generated. The particulars are described in the specification of my patent, of date 3rd March, 1845; also in the "Mechanics' Magazine," October 1845, and in "A Description of the Fumific Impeller," which was published by Dalton.

It is only necessary to say here, that machinery, whatever may be its beauty, cannot add to the power of heat as the prime mover. On the contrary, it always wastes part of the power by non-appropriation, friction, radiation, and leakage.

The power of a steam-engine is obviously more in the steam-pipe which conveys the steam from the boiler to the engine, than in the engine, and it is more in the furnace than any where else. It is really in the chemical action of combustion in the furnace, but we find the only available part of it in the steam-pipe; the engine, machinery, and paddles of a steam-vessel being nothing more than the arrangement necessary in applying steam to operate indirectly upon the water, and thus to impel the ship in her desired course. In using steam, we must operate, indirectly upon the water, because all attempts made for applying the rush of steam along the steam-pipe under and directly upon water

* See page 189.

in the manner of a rocket, have failed, by reason of the condensation of that steam whenever it comes into contact with the water upon which its power was wished to act.

It is of the utmost importance to the right understanding of this paper, that these facts be kept in mind.

In a steam-ship making a passage across the North Atlantic Ocean, the currents of steam of a certain pressure rushing along the two main steam-pipes from the boilers, multiplied into the sum of the areas of these pipes, and by the pressure (adding the value of the vacuum), constitute and express the power of heat which impels her. These currents of power are in constant flow, and correspond in their velocity to the ship's rate of going.

We have just seen that these streams of steam-power are not disposable for use by directing them at once against the sea. We shall now observe that, *what cannot be done by steam, can be done by hot air, or by the hot products of combustion*; currents of which may be discharged at once under water backward to impel the vessel forward, or forward when the vessel is to be impelled backward. These currents being permanently elastic, do not collapse as steam does; and, being tenacious of their heat, the necessary impact can be had to move the ship in her required course.

The Congreve rocket is impelled without any machinery and without steam, the impelling composition consisting of combustibles and a supporter of combustion, selected, proportioned, and intimately mixed for augmenting volume by a fresh arrangement of particles, and for producing the aeriform fluid at a high temperature. There is a mass of this intimate mixture within the case, which, independent of any oxygen from the atmosphere, forms in a few seconds, a *fumific impulse*, which discharges itself through the "throat" of the rocket.

The composition produces 500 times its bulk of gas at the mean temperature of the air, whilst its elastic force is increased by the heat to not less than 2000.

One of the largest rockets now used in the English service, for either bombardment or field-work, is called a 32-pounder Congreve rocket. The entire weight, with composition, clay, iron, stick, and the gunpowder for bursting the cast-iron head at the end of the range, is 33lbs. The length of the head and case is 2 feet, the external diameter $3\frac{1}{10}$ inches. The rocket-composition occupies an interior cylindrical space of $3\frac{1}{2}$ inches diameter, \times 21 inches long; and this composition weighs 10lbs.

The combustion of this 10lbs. of composition, and its rush *a tergo*, project the rocket over a base line of 3450 yards (or only 70 yards short of *two miles*) in *seven seconds*. Here, then, is an instance of much higher velocity than that of any machinery or implement, not even excepting a cannon-ball.

We need not discuss here the rocket's flight.* The fact of its flight in the air, and of its passage through water and even through loose sand,

* See page 190.

is enough for my purpose of shewing the direct action or reaction of the hot products of combustion for navigation.

Having constructed a small model-boat with a brass rocket-case in the keel, I made a course of rocket experiments with different compositions. The result of several experiments may be stated as follows:—The model-boat displaced 15 lbs. weight of water, and a common 1 ounce rocket, inflamed under water, impelled this boat 30 feet in 4 seconds, or at a rate rather over 5 miles per hour.

In all of these small experiments a perfect impact was obtained on the instant of inflammation, and so great was this, which may be called the initial velocity, that the small vessel skimmed the surface with less draft of water than she had when at rest.

Being thus satisfied that, if I could economically apply a continuous stream or streams of hot products of combustion of requisite pressure, and at a velocity little above the speed required of the ship, I should probably supersede the steam-engine for purposes of navigation, I proceeded with the following experiment.

The approval of some friends, and also of some who to me were strangers, was encouraging. These were gentlemen of high chemical and philosophical attainments. Among the latter was Capt. Sir Thomas Hastings, R.N., whose extensive and intimate knowledge of what is now done and may be done in gunnery and rocket practice, particularly fitted him to express an opinion upon the proposition; and I must not omit the name of Professor Baden Powell, of Oxford.

To these two gentlemen in particular I am much indebted for the unexpected and unlooked-for encouragement they have given me in a matter where engineers have been unconcerned, or unable to appreciate the invention, or unwilling to be troubled in the matter.

The difficulty I have had in convincing any steam-engine men has been very great. They bring everything to that *machine* as the standard of excellence, and seem (with very few exceptions) to disbelieve, practically, that heat is the source of power in the machine which they idolize, and that the same heat is available, independent of water, steam, and the numerous elegant contrivances and appliances which are rendered necessary for using the tender and easily condensed steam.

Those engineers and steam-boat parties who could believe in the possibility of obtaining power by the hot products of combustion, directly applied as I propose, could not see how a sufficient impact could be obtained to impel the boat in her course with sufficient economy. Therefore, I determined to demonstrate the fact at once by an experiment on a sufficiently large scale.

The experiments of Mr. Ericsson,* of Mr. Robert Stein,† of Mr. Sterling,‡ and of Sir George Cayley§, shewed how the continuous production or presentation of hot air could be relied upon.

The proposers of hot-air engines have taken the steam-engine, subse-

* Recorded in the Institution of Civil Engineers.

† See "Repertory of Arts," 1821.

‡ "Transactions of the Institution of Civil Engineers," 1846.

§ Idem.

quent to the discoveries of Newcomen, as their model, whilst they should have reverted at once to the engines of Savery and of Papin. They should be referred to the Marquis of Worcester's scantlings, and even to the smokejack of Hieronymus Cardan.

The Marquis of Worcester employed the pressure of steam to act at once and directly upon the water which he desired to put into motion. Savery, also, used steam in direct connexion with the water. Dennis Papin improved on these by interposing a loose floating piston between the steam and the water to be moved.

Now, had any one of these latter used, instead of steam, the hot products of combustion from a close furnace, the steam-engine would not now be the only available inanimate artificial power in use for such purposes as raising water, and for navigation.

The streams of hot products of combustion from Sir George Cayley's close furnaces to his engine cylinders were as regular and as powerful as the stream of steam along any main steam-pipe.

All previous attempts to make hot-air engines have been by following the form of the steam-engine. I attempted to make close furnaces imitate a rocket, and the following will shew with what success:—

Into a boat 26 feet long and $4\frac{1}{2}$ broad, I fitted a close furnace, or retort, and a common small forge bellows. The accompanying drawing exhibits the whole arrangement. The furnace being opened at top and at bottom, an intense fire was got up; the bonnets at top and at bottom were then luted and fitted tight. The upper or reservoir portion of the bellows was not used. Each stroke of the lower portion of the bellows passed air through the now close fire for the hot products of combustion to rush out against the water, as shewn at C.

The boat, when tried with this apparatus, weighed in all 4375 lbs.; in other words, that weight of water was displaced by her flotation when the discharge-pipe C was immersed 12 inches.

Each stroke of the portable forge bellows sent cold air into the close furnace. The appropriation of oxygen to support combustion was *instantaneous*; and the heating of all the aeriform body which passed off by C was also *instantaneous*. The products of combustion, almost altogether aeriform, but also occasionally mixed with smoke, dust, and ashes, rushed out (at a temperature of 800° or 900°) by the pipe C, which was three inches in diameter.

Not to be tedious,—a narration of mistakes and disappointments may be avoided, and the action or *reaction* of the arrangement shewn on the drawing, explained.

A valve being, of course, in the cold-air pipe, between the bellows and the furnace (and, as has been said, the upper chamber of the bellows inoperative), I sent a succession of blasts into the bottom of the furnace, and, consequently, up through the intense fire, to find its way out under water by the pipe C.

The first blast, by one man, always started the boat (weighing nearly 2 tons) from a state of rest 3 feet in 2 seconds; and I believe that no two men, with oars or sculls, with all the advantage of their flexor and extensor muscles, could do more. And neither paddle-wheels nor the

Archimedian screw can start the same weight into such motion in the same time.

I several times repeated these experiments upon what may be called the initial velocity had by the first blast, or jet, or shot.

The leaky and sinking condition of the old boat, broken, and out of shape by liftings by a crane, prevented my continuing the course of experiments so far as to be able to take her rate, consumption of fuel, and the line-haulage power necessary for the same rate. These latter points will be more fully illustrated when I shall have fitted a larger vessel with several close furnaces, and with blowers either actuated by a steam-engine, or kept in motion by part of the power of the vessel's own velocity through the water.

Enough has, however, been done to shew the value of the discharge proposed. There are several chemical means for increasing the power and rapidity of the currents, for starting suddenly, or for increasing the ship's rate in cases of emergency.

A succession of such discharges will give the required accelerated velocity, and the shipwright can arrange to have them in the bilges, after-body, or other parts of a ship, so that one or more discharge-pipes may deliver their power backward to send the ship a-head; or forward to send her astern; or backward on one side, and forward on the other side; to bring the ship about, or direct her head to any given point.

The fire, and one man blowing air, have, we have seen above, done the work of two men. From which it follows, that suitable close furnaces, blown by a 50-horse-power steam-engine, will do the work of 100 horses in impelling the vessel; and so on in proportion.

Even let a sceptical reader doubt my accuracy as to the one man's power being, with the fire, equal to two men's power in rowing—let him even insist that one man with oars could do as much as this man did with the products of combustion, such a reader cannot reasonably deny that shipshape vessels can be impelled, without smoke, chimnies, paddles, or screws, by the mere discharge of the hot products of combustion, whilst the blowing is effected by a steam-engine, which may be worked from a boiler or boilers, which may be made to surround and embrace the close furnaces.

I may now anticipate the possibility of expression of any doubt upon the economy and safety of impelling vessels by the direct application of the hot products of combustion.

The economy will be greater than in the steam-engine for several reasons:—Because the expansion of a gaseous body by heat is greater than that of steam: Because 1 lb. of fuel will raise $7\frac{1}{10}$ lbs. of water 1212° , or 19 lbs. of water 480° ; and 1 lb. of the same fuel raises 29 lb. of air 1212° , or 74 lbs. of air 480° .* Because the steam-engine does not and cannot use all the heat generated in the furnaces; 500° pass off at the top of the steam-boat chimney,† and what heat the engine can use has

* See page 190.

† Paper in the Institution of Civil Engineers, by Andrew Murray, Esq., Chief Engineer of Portsmouth Dockyard.

to overcome the friction, the drag of the air-pump, the feeds, waste, water, &c.; whilst by using the hot products of combustion, as shown in this paper, all the heat of the furnaces is applied; there is little friction but that of the air-pumps or blowers, and only half the power obtained in the furnace is required to work the blowers. Another feature in the proposed mode of impulsion is that, whilst the working economy of a steam-engine depends upon slow combustion in the furnaces, and a uniform and limited speed of the machinery, the working economy of the proposed system is rather promoted by rapidity of combustion, and is capable of being worked slowly by gentle currents, or jets, or puffs; or fast by roaring blasts, there being no machinery which can be injured.

The safety of the proposed impulse is not affected by a store of power in many tons of boiling water ready to burst into steam; it may be assured by their being no store of power whatever.

Perhaps this mode of impelling bodies is the nearest approach to the variable intensities of animal power, where the combinations of oxygen and carbon are more slow, or more rapid, as the same size of lungs may require it to be for slow motion or for the fleetest course of the animal.

ALEXANDER GORDON.

22, Fludyer Street, Whitehall, and
98, Gracechurch Street, London,
10th February, 1847.

Specific Heat of Water and of Air.

Reference to any chemical authority for the proportional quantities of heat or fuel, which uniform weights of water and of air require, in order to have their temperatures raised the same number of degrees, that is to say, a reference to the undisputed specific heats of the two bodies, will prove this to be so.

The specific heat of water being 1, that of an equal weight of air is 0.2669;* therefore, if 1 lb. of fuel is required to heat a given weight of water 1°, the smaller quantity, 0.2669 of the same fuel will suffice to heat the same weight of air 1°.

Such is the result of the experiments on the specific heats of bodies by Lavoisier and Laplace, who burnt various bodies in the calorimeter, and estimated the heat by the quantity of ice melted in each experiment. These philosophers were followed by Crawford, Dalton, and Count Rumford; and the expense of heating water is determined by them to be nearly four times the expense of heating air in careful laboratory experiments.

The value of one fuel or another, for the purpose of generating heat,† is not a question here; but whether the body to be expanded by that heat should be water or air, is the matter before us. Dr. Ure, in his "Dictionary of Chemistry," art. *Combustion*, informs us that 1 lb. of charcoal melts on the average 68 lbs. of ice; and by Turner's "Chemistry" (p. 57.) 68 lbs. of ice melted is equivalent to $68 \times 140^\circ = 9520$ lbs. of water raised 1°. Hence it follows, that

* Turner's Chemistry.

† Experiments made by the calorimeter lead us to believe that

1 lb. of charcoal raises	9520	lb. of water 1°.
— wood —	6.330	—
— coke —	13.963	—
— coal —	6.534	—

but in experiments by the calorimeter there is the mechanical obstacle of the body through which the heat has to be transmitted. In the Fumific Impeller I have no transmission; I have chemical union. The distinction is important.

1 lb. of this fuel raises 9520 lbs. of water 1° , or $7\frac{8}{10}$ ths lbs. of water 1212° , or 19 lbs. of water 480° ; and 1 lb. of the same fuel raises 35,575 lbs. of air 1° , or 29 lbs. of air 1212° , or 74 lbs. of air 480° .

There can, therefore, be no doubt that air, by *Nature*, is a better body than water to work with. But hitherto *Art* has not accomplished the manner of doing so.

Readers disposed to pursue this part of the inquiry further, may refer with advantage to the recorded experience of Dalton and of Silvester, and to the opinions of Messrs. Donkin, Farey, Gravatt, Brunton, Simpson, Field, and Clegg, as recorded in the "Transactions" of the Institution of Civil Engineers, 4th and 11th February, 1834, paying attention to Mr. Farey's pointed observations, that any discrepancy between the theory of the specific heats and the practice of that date in warming buildings, may be "accounted for by the difficulty of bringing the air into contact with the heat produced, owing to the large space occupied by the given weight of it, as compared with that occupied by the same weight of water; 100 lbs. of water occupying a space of 1.6 cubic feet, whilst the same weight of air occupies 1328 cubic feet." The discussions which elicited the opinions of these gentlemen had especial reference to heat transmitted from the fire to the body. It was not the chemical union of bodies, which is an important feature in the Fumific Impeller.

Motion of Rockets.

On the combustion of the composition of a rocket, an elastic fluid is generated, the full force of which is exerted in the first instant alike in all directions, whether there be any other substance for it to act against or not. Hence, if, in a vacuum, the combustion took place as freely as in common air, the force of a laminum of the composition in its transformed state (equal to the initial strength of the same into the rocket's base,) would be that which constantly acted upon the rocket during the time of its burning; for it is only the first force of the gas in this case that has effect upon the body to move it, it being the very next succeeding instant so greatly diminished from the extreme velocity with which it rushes into the vacuum, that it affords, comparatively speaking, no resistance whatever to the fluid next generated, whereby more motion to the rocket would be communicated.*

Each laminum of gas, as it is produced, acts upon and fires at the same time the following laminum of composition; and the produce of this exerts its force upon, and converts into fluid, in the same manner, the next contiguous laminum of matter, which acts upon and fires the next, and so on continually, till the whole body of the rocket is consumed. If the rocket burns in a medium, then, as there is a body reacting against the fluid that rushes from the rocket, there is not so instantaneous a dissipation of the force of the latter the moment after it is generated, but a time of its action upon the rocket, which is greater or less according as the surrounding medium is more or less dense and elastic. In this case, therefore, more motion is communicated to the body than in the former, and, but for the resistance to the fore part of the rocket, it would move farther in a medium than in a vacuum. A gun recoils farther when fired with powder and ball than when it is charged only with powder, from the same cause of a longer action of the fluid against the breech of it.—*Treatise on the Motion of Rockets, by William Moore, of the Royal Military Academy, Woolwich.*

Expansion of Air by Heat.

Air, it is well known, will, when heated by 1° of Fahrenheit, expand about $\frac{1}{480}$ th part, and continue to expand so as to have its expansive force or tendency increased in about the same proportion for every additional degree of

* Supposing the elastic force of the gas from the rocket composition to be 1000 times as great as the elastic force of the atmosphere at the earth's surface, it will be found by accurate computation that the velocity with which it would rush into a vacuum is nearly at the rate of 8 miles per second.

temperature.* It follows that, if the temperature of a permanently elastic aëri-form body be augmented by about 480° , the bulk of that body will be doubled, or, if it be retained within the space it originally occupied, its pressure will be doubled. It is by availing myself of this well known law of expansion by heat, and the new arrangement of particles in the close furnace, that I can obtain a rush of power from the furnace along the pipe C, analogous to the rush of steam from a steam-engine boiler along the steam-pipe to the engine—equal to it in pressure, power, and constancy, and, when required, at a much greater velocity.

The air driven into A for the support of combustion must, of course, be driven in against the pressure due to the heat of the products of combustion; for, supposing the latter are at the temperature of about 500° , there will be an atmosphere of surplus pressure against the blower; and it will be found that the blower, to do its work, will require half the power generated by the heat.

AUTO-BIOGRAPHICAL SKETCHES, *by a Merchant Sailor, illustrative of the State of the British Merchant Service.*

(Continued from page 127.)

THE neglect by the master of the duties of his station, and the continued dissipation of the mate, had completely disorganized the crew; they had lost all respect for the mate, were inattentive to their duty, quarrelled amongst themselves, and fought frequently; at night the majority would go on shore contrary to the mate's orders, and unknown to him, the negroes would come under the bows after dark, the men sliding down the cable into the boat, spent the night on shore in dissipation, and were frequently absent during part or the whole of the succeeding day; or, if on board, entirely useless as regarded performing their duty. The carpenter was a lazy, idle, dissipated fellow, who would not caulk the sides, feigning sickness; so satisfied was the mate even, of the dodging of Chips, that he insisted on his going on shore to the doctor, who at once saw through the artifice, and applied to his seat of honour and back a very strong mustard plaster, which prevented his sitting or laying with comfort; the punishment was deserved, and I never saw any man meet with less sympathy, when giving vent to his painful feelings in execrations against the doctor.

During the rows and fights that were now daily occurring on board, the mate began to shew his vindictive spirit to the crew. Abuse conveyed in most unheard-of language, and plentifully interspersed with oaths, was heaped upon the men; his irritating language and conduct produced sharp answers from the crew; on several occasions the mate knocked some of the men down, altercations ensued, and on more than one occasion, he gagged one or two of them. This he effected by putting an iron belaying-pin in the man's mouth, and laying the man on

* Dalton determined that 100 parts of air, being heated from 55° to 212° , expanded to $132\frac{5}{10}$ parts; this gives us an expansion of $\frac{1}{433}$ parts for 1° Fahr. Gay Lussac determined the expansion to be $\frac{1}{480}$; and although, in Sir David Brewster's edition of Robinson's Philosophy, 1830 or about 47, is stated, we find Dr. Ure, in his "Dictionary of Arts, (article "Expansion,") states that all gases expand $\frac{1}{480}$ for each degree of Fahrenheit.

his back on the deck, lashed both ends of the iron pin to a ring-bolt. It may be wondered at that the men thus suffered without complaining to the master or the authorities on shore—at the present day such conduct would result in that—but at the time I am writing of, an application to a magistrate would only have resulted in a worse punishment, and the poor unheard sailor, would, on the mere assertion of the master or mate, have been transferred to the common jail, which in that climate, swarming with all kinds of vermin, and putrid from filth, would have been only making his condition worse. Even at the present day such conduct is too often pursued, and while I am quite aware that there are many improper and bad characters in the merchant service, still, in a majority of cases, when disturbances occurring on board ship result in punishment by some authority, the offence, if any, has generally been generated by the improper conduct, or at least want of management on the part of the master and officers. I write this after considerable experience as a master, and feel certain that whenever the master and his subordinates treat the crew fairly, firmly abstain from all bad language, and endeavour to gain the respect of the men, a very bad crew may be managed easily enough, and without any appeal to magisterial authority. When that authority is appealed to, the sailor but too often is, either not listened to, or not believed, and too often upon an *exparte* statement by his superiors, is punished unjustly, and thereby engenders ill-feeling against all masters and officers, which frequently gives trouble to future commanders willing to treat their men properly.

As constant intoxication continued to render the mate more incapable of attending to his duty, my services became more important to him. I took an account of all the cargo, kept a log in a private book for his benefit, kept the keys of the spirit lockers in the cabin, and became a sort of *factotum*. He frequently gave me orders to get certain duties performed by the men, while he would remain below drinking or sleeping. During the whole time he was excessively jealous of my influence with the men, and afraid of my informing the master. I never, however, considered it my duty to do so, and was always glad when the night permitted my retiring to the fore-castle and enjoying a gossip over passing events with my friend the cook. The Sunday I spent on shore on liberty, and many a pleasant ramble I enjoyed amongst the neighbouring plantations, conversing with the negroes, and under the shade of the bread-fruit trees,* enjoying the splendid scenery of the magnificent bay.

Every succeeding day brought the same scene of drunken disorder and misrule, and the morning of that day before the midnight of which we must be under way for England, found us very unprepared for effecting it. The cargo was taken on board and stowed by negroes, fifteen of whom were that day employed; lighters were discharging on both sides, cotton, rum, and sugar; the decks were in confusion,—the vessel moored with both anchors, the main-yard secured, and the derrick rigged. The mate was, if possible, more stupid than ever, symptoms of approaching

* These had been brought by Capt. Bligh from Otaheite.

delirium tremens were apparent, and it was evident there was to be some queer work 'ere the object contemplated could be accomplished. The vessel should have been unmoored the previous day, and common diligence in taking in cargo would have completed that, some days previous. While the negroes were busy taking in and stowing away cargo, the mate was generally parading about the decks, swearing and abusing any one who came in his way. Sometime near 8 A.M. he got the crew to commence preparations for heaving in chain, he would give them orders to commence, and then, 'ere they had hove in a fathom, he would order them to desist. Every facility had been allowed for getting spirits from the shore, and he served out a liberal allowance on board, the majority of the crew were, consequently, in a maudlin state of intoxication, and completely wanting in the energy necessary to accomplish their duties.

The forenoon was passing away in this manner, nothing was done, I became completely disgusted; and determined, at all hazards, to inform the master of the state of matters. Taking an opportunity while the mate was below, I sent the two boys ashore, desiring them to ask the captain to come on board, and to say, if he asked, that I sent them. In a few minutes he came off accompanied by his brother and the consignee. The mate was called, his state discovered, a grand scene ensued between him and Jemmy, who was not sober, in fact, the old vacant unmeaning stare told my practised eye that brandy and water had been at work, and that the skipper was little better than the mate. The keen eye of the skipper's brother, a clever, active man, soon saw how matters stood. I was called and questioned as to the cause of the delay, I replied that the men would do what they could, but the mate would not permit them. The brother urged Jemmy to depose the mate, and turn him ashore, but Jemmy, too conscious of his own irregularity, and afraid of the mate telling the owner at home, patched the matter up, lectured the mate, and then the men; talked magnificently about doing their duty like men, and finished with an oath or two. While the master remained, the men again commenced heaving in chain, he stopped however, a very short time, and 'ere he was half way ashore, the mate had ordered them all to leave off working, and retired to the cabin to console himself for his late wiggling with an additional dose of his favourite grog.

Determined, if possible, to get on with the work which Jemmy had begged me to do 'ere he left, I appealed to the better feelings of the crew, who were a generous hearted set of fellows, and drunk as they were, I got several of them to work. We got the long boat in, the yards unsecured, and the derrick unrigged, not quickly or consecutively, but with considerable intervals between each operation. One fellow would, with an imprecation on his eyes, declare he would not work; another would light his pipe, and smoke, or drink some more grog; the mate occasionally appeared on deck, swearing at all, and sundry, and almost insensible. Thus passed the afternoon of this day; the deck was completely strewed with ropes, and blocks, and spars, nothing was lashed; the long boat ungriped, the hatches not battened, or even the tarpaulins put on, the anchors still down, when just as the short twilight was passing away, the boat came alongside with Jemmy, his wife, a young niece going to

school in England, and their luggage, stores, and fresh stock. With considerable difficulty they were got on board, adding to the confusion on deck. The master was nearly as bad as the mate, he was completely powerless and useless; even at this time a master of another vessel, who accompanied him, wanted him to send the mate ashore, but he could not resolve. An altercation ensued between the two, and language was uttered on either side, too disgusting to be repeated; adding to the noise of the two superiors, came frequent exclamations from the drunken crew, mixed with oaths and execrations. The scene was dreadful and appalling. Mrs. M. came up to me, and with tears in her eyes and an imploring look, begged me to tell her if there was any danger. I could merely assure her that there was no fear of personal injury to herself, but that she could herself see the state of all hands; I urged her to persuade her husband to dismiss the mate, but she merely shook her head, and said she was afraid to speak to him. The mate retired below to get some more grog, when I and the master appealed to the crew, Jemmy did not order, that was useless, he implored them, to try and heave up the anchors.

Night was now fast passing, and the want of light added to the difficulty of getting anything done. Rallying some of the crew, the cook, and the boys, we commenced heaving the windlass, sending the more drunken of the crew to the capstan to heave on the messenger, we would get in a fathom or two of chain, when the hook of the messenger block would catch the galley, and bring all up, then a fellow would fall down drunk at the capstan, and cause another stop; sometimes the mate made his appearance and abused the skipper. Such a scene as was then passing cannot be described; often did I wish I had never come to sea, and even interested as I was in Jemmy, on account of old associations and the presence of his amiable wife, I sometimes wished I had deserted the vessel. Amidst such interruptions as I have described, at length we got one anchor stock just about level with the water when the chain was stoppered; we then began on the other, and with a difficulty similar to the first, we got the second anchor wayed from the bottom, but all my exertions could not get it up. The brig began driving to leeward out of the bay with the trade wind, the crew gradually went below or fell asleep about the decks, until I was left alone with the boys, the cook, and the skipper. I lashed both chains to the ringbolts, and as I knew the vessel was driving seaward, I begged the master to permit everything to stand as it was for the night, which he did. Here then we were, driving onwards, in a vessel with one anchor level with the water, the other hanging ten fathoms under her bottom, the topsails sheeted home but not set, the decks lumbered up with live stock, stores, blocks, ropes, handspikes, and capstan bars, a disgrace to the merchant service, and in imminent danger had the weather proved bad. Fortunately it remained fine, and daylight found us drifting away, a helpless mass of misery and wretchedness, caused by intemperance and its consequent evils.

The crew now began to suffer from a sudden cessation of drinking. Several could not turn out the first day; the mate was in a dreadful state of excitement, and remained so for a week, evidently having some

spirits hid away in his berth; the master was useless and powerless in the morning from the effects of intoxication, and as mad as ever in the evening from repeated draughts of the stimulant. During the day we got the vessel into something like order, the anchors stowed, boats secured, hatches battened, and plain sail made; a course being steered given by an old apprentice who had been frequently at the same island. The mate's jealousy towards me increased, as when capable of giving orders about anything, Jemmy invariably gave them to me. The crew obeyed willingly, I had gained their respect, and even the old cook, with all his experience, used to speak respectfully, as I was expected in the meantime to navigate the vessel. Not permitted to go down into the cabin, from the mate's jealousy and Jemmy's entire thoughtlessness, I got the steward to spread out on the cabin-table a large old-fashioned chart of the West Indies on a large scale, and in which the compass lines were very strongly and distinctly marked. Watching a chance, when the mate was below, I used to look down the open skylight, and casting my eye along the line of bearing of one of the passages through the Virgin isles, gave such courses as brought us safely to, and past them. Every one was familiar with their appearance, and amidst very squally weather with much thunder and lightning, we took our departure from the last little rock of the Virgins, and pushed boldly on towards England, the dead reckoning, which I kept, being the only one on board. The second mate had no education, could not indeed write at all. The crew gradually got well, being now kept sober; the mate and master continued in the same state, having frequent altercations, particularly at night, when both were under the influence of grog. Mrs. M. caused the spirits to be kept from the mate, but he must have had a private store as the effects were still as visible as ever.

THE ESTUARY OF THE RIVER EXE.

(Concluded from p. 136.)

I AM of opinion that at a less expense than has already been incurred in building this sloping embankment of solid masonry, an efficient break-water might have been formed between the Chickstone and the Warren, thereby narrowing and deepening the south channel for the convenience of small coasting vessels; as well as stakes driven and wattled for groins at the back of the Warren; and by such precaution a large portion of this natural defence to the port which the late October and November gales swept away, would have been saved. In fact, unless some measures are not very shortly adopted, there can be little doubt but that the whole of the remaining high part of the Warren, will in a few years disappear. The harbour will then be entirely destroyed and the Estuary of the Exe converted into a dangerous bay of shoals, having narrow channels between them, with shifting bars, only navigable for small craft. During the late gale of the 20th November, the sea actually forced a passage

through the Warren, close to the railway embankment at Langston, near the spot where I presume the outlet of the river once was, converting the remaining few acres of the Warren, for the time being, into an island. The South Devon Railway Company have caused groins to be formed near the breach, and the sand is now accumulating very fast at that spot, but the most exposed part of this natural ancient embankment at the harbour's mouth, the part which mainly effects the preservation and existence of the harbour itself, is left to its fate, no one appearing to care what becomes of it. There is a charge levied by the chamber of Exeter of 1½d. per ton on all cargoes discharged within the Port of Exeter, which, (as I am told,) by a strange anomaly, not only includes Exmouth, Starcross, Limpston, Topsham, and Exeter basin, but also the ports and towns on the sea board from Teign-ness to Lyme Regis, comprising Shaldon, Teignmouth, Dawlish, Budleigh Salterton, Sydmouth, Beer and Seaton.

How this money is expended, or how it *has been* expended for the last four or five centuries, it would be difficult to tell. It was, it appears, originally intended for the purpose of keeping in repair the walls, battlements, gates, towers, and ditches, which existed around the ancient and royal city of Exeter, and amounts to a very considerable income; no doubt it was a good tax of its kind, in its day, for keeping up the city defences which must have been considered highly necessary, for I find that Exeter has been besieged no less than ten times,

“Urbs sita Devonix in medio cui Excestria nomen,
Cincta fuit decies obsidione gravi.”

but, like most of the good old rates levied in times of yore for particular objects, in ancient and loyal cities, it has been annexed, as brother Jonathan would say, for so long a period, and appropriated to some other object more immediately connected with the convenience, comfort, or hobbies, of the highly respectable and loyal corporation from time to time, that although it is every body's business to know what becomes of the money, it is nobody's particular business to inquire. The establishment of this tax may be traced to the reign of Edward the First, in the year 1275, under the head of “Chipping-gavel,” and it appears, by documents in the archives of the Guildhall of Exeter, published in 1724, by Samuel Isacke, Esq., the chamberlain at that period, to have been the source of much litigation, and which has continued even up to the present day; it having been lately decided in a court of law, that all cargoes discharged in the river Teign, are liable to pay the city of Exeter “Town dues,” Teignmouth being included in the port of Exeter. Besides this tax, all vessels discharging in the Bight of Exmouth, or any part of the river within the manor of Kenton, subject their cargoes to an impost of two-pence per ton to the lord of the manor, *in addition* to the town dues of the city of Exeter; I presume on the old feudal right of “Murage;”—and ballasting, at fourpence per ton, under the head of “Lestage.”

If these taxes had been expended in keeping the channel of the river clear groining the Warren and preventing abuses such as I have

pointed out, no one would have complained, and it is high time that a bill, such as the Tidal Harbours Commission seems to point to, should be passed, abrogating these feudal privileges and establishing laws for the better regulation of the ports and harbours of the kingdom.

The trade of this port was formerly very considerable both coasting and foreign, the latter has now much fallen off, although the former is still of some importance. The register tonnage of shipping inwards over Exmouth bar for the year 1846, has averaged monthly 4000 tons, coastwise, and 700 tons foreign and colonial; there were formerly several whalers out of the port and it also enjoyed a large share of the Newfoundland trade. The largest vessels now out of the port are in the timber trade, registering from 300 to 370 tons, and as there are scarcely any exports worth naming in the present day, every vessel is obliged to take about half her register tonnage of ballast on leaving the port, upon which, "lastage" is levied by the lords of the manors from whence it is taken,—

"Onerariæ naves saburra gravatæ."—*Livy*, 37, 14.

besides the cost of lighterage and heavage.

Bull-hill and Shilley are still the favourite resorts of the ballast-lumpers, and the Warren point is occasionally trespassed upon, there being no harbour-master to regulate or prevent this abuse; and as large vessels cannot go up to Exeter or Topsham, but are obliged to discharge their cargoes in the bight, nearly half the ballast in quantity, as to relative tonnage, is taken from the neighbourhood of Exmouth, to the detriment of the harbour; and before the last extension of the Exeter canal, which enabled larger vessels to go up to the basin than formerly, it must have been far greater than at present. Indeed so lucrative was the income derived from the sale of ballast, that a law suit commenced a few years ago between the lords of the manors of Kenton and Lyttleham, as to whom the shoals of Bull-hill and Shilley belonged, which was decided in favour of the latter, at the instance of the parish authorities at Exmouth, who marched a multitude of boys out at low-water from Exmouth beach to the black buoy upon Bull-hill spit in procession, something after the manner of the white-rod processions, headed by the beadles, which takes place annually in the parish of Cockayne.*

There is a singular tale related by Isacke, in the history of Exeter, of a quarrel arising in 1309, between the chamber of Exeter and the Lord Courtenay, about a pot of fish, which runs thus:—

"In the year 1309, when one Roger Beynim was mayor of Exon, a controversy arose whence ensued great troubles between Hugh Courteney, the third Earl of Devon, and the mayor and commonality of this city, the occasion thus:—The said Earl, on a certain market day,

* Query.—Are not the Exonians equally entitled to the London *soubrequet* of "Cockayne," as I find by Stowe, that Cozinæus, the nephew of Brute, who built London, afterwards was the founder of Exeter, no doubt assisted by his worthy nephew. Hence the term probably only applicable to that portion of London built by the said Cozinæus.

sent his cator hither to buy fish, at which time there were only three pots of fish in the market. The bishop's cator likewise came, and both of them thinking the whole to be too little for either of them, were at some strife thereabout. The mayor, on his part, minding the welfare of the commons of the said city, and that they also might have the benefit of the said market, did decide this controversy, and delivered one pot of the said fish to the Earl's cator, another of them to the bishop's cator, and the third he here reserved for the market. The Earl being advertised hereof, thought himself much wronged by the mayor, in not having all the fish, and was much displeased thereat, and threatened to be revenged on him," &c.; and in 1311, two years after the supposed affront, "the said Hugh Courtenay, Earl of Devon, in his high displeasure against this city, maliciously destroyed the haven belonging thereunto, or an arm of the sea coming up from Topsham to the walls of the city, whereupon, sundry bills of complaint were exhibited against him to the king, and divers inquisitions thereon taken, but no redress could be had, might at that time so much overcoming right."

Again, in 1316, he says, "the displeasure of the aforesaid Earl of Devon being grown into anger, and from thence to an extreme hatred and revenge, he now persevered therein, devising all possible means to prejudice the whole city, as by intruding upon their liberties, destroying their haven, building up a key at Topsham, taking from them perforce the fishing in the river of Exe, and every way oppressing them, in so much that what was once observed of King Henry the Second, and Thomas à Becket, may be as truly said of this Earl in reference to this city:—*Immortale odium atque insanabile vulnus.*"

"The said mayor and commonality exhibited their bill of complaint unto the king against the said Earl, who thereupon sent forth his writ to the sheriff of Devon, bearing date 20 Mertii hoc anni, for an inquisition to be taken; and albeit, the same was accordingly executed, yet was it never returned up; for which cause, the king sendeth his second writ unto the said sheriff, dated 12 Junii then next following, strictly charging him to speed the execution thereof, and to make return, which was so done; and albeit the inquisition was found against the said Earl, yet could no relief be thereupon had, or redress made of the said grievances."

About a hundred years ago, the exports of manufactured goods from the port and city of Exeter, according to Brice, were very considerable. In 1750, 302,760 pieces of woollen cloth were exported to Italy, Spain, Portugal, Holland, France, and Germany. The annual value of exported goods at that time, including cloths, corn, hides, &c., were estimated at a million sterling.

Exmouth, in the reign of King John, was a port of some considerable note. In 1347, it furnished 10 ships and 193 mariners for the expedition against Calais. The Earl of March sailed from hence in 1459. In February, 1646, Exmouth Fort, then a garrison of the king's, was blockaded by Colonel Shipcote, it was taken on the 15th March, with nineteen pieces of ordnance, and a great quantity of arms and ammunition.

The ancient British name of the present city of Exeter was Caerwise,

and it appears by the authority of Stowe, to have been founded before London, in anno mundi 2855. By the Romans it was called Isca, but to distinguish it from the town of Usk in Monmouthshire, it had the distinction of Isca-Danmoniorum. The river Exe is the foundation of both its English and Roman name Isca or Esk, signifying water, hence Excester or Exeter. Roger Hovedon, an old historian, says, that Caer-wise was the British name for Exeter, from Caer-w-ise, meaning "civitas (aquæ) isca." It must have been one of the earliest cities founded in Britain, as it appears to have been besieged by Vespasian, in anno domini 49. In the reign of King "Alfred," in A.D. 875, the Danes were signally defeated before the walls of Caer-isk and driven to their ships. They were again defeated in A.D. 1001, but returning with a large army in a great number of ships twenty-nine years afterwards, they took the city by treachery, put all the inhabitants to the sword, and burnt and laid waste the whole city; thirty-eight years after this, William the Conqueror took it by storm.

The river Exe rises in Exmoor, Somersetshire, and, including its various sinuosities, is sixty miles in length. It is supposed to have been navigable as high up as Colebrook formerly, as I find the following license to discharge vessels under a fine at that place, which is several miles above the city of Exeter:—

"A.D. 1359, Licentia concessa est pro discarganda navi apud Colepool per finem quadraginta solidorum."

And it is said that barges once navigated to Crediton. I am of opinion that, at the time the river had a direct outlet to the British Channel between Langston cliff and the Beacon cliff; the tidal wave must have flowed up without impediment and risen much higher than at present, from the appearance of the extensive low level lands in the neighbourhood of Exminster and Countlessmear, also near Powderham and St. Thomas.

The present rise of tide at Starcross is 14 feet at the top of the springs, and this is nearly a foot more than it used to be when Shilley island existed, and before the Warren point was swept away, which is obvious, for the breadth of the entrance at Exmouth at high water spring-tides is now more than double what it used to be, and from half flood to high-water, the tidal wave, instead of winding round Shilley as formerly, now runs over all towards Topsham, where the difference of the time of high-water has been visibly accelerated within the last twenty years. It is high-water at Starcross, full and change, about 6h. 30m., and the highest tides are those of 8 o'clock.

Starcross, Jan. 10th, 1847.

GEO. PEACOCK.

SAILING DIRECTIONS FOR ENTERING THE RIVER OF KENMARE.

THE entrance of Kenmare River can never be mistaken; the Skellig rocks, with lighthouses on them, on the north side, and the Bull, Cow, and Calf rocks, on the south side, will make the place plain to either the

most careless, or the most timid navigator. Leave the Bull rock on the starboard hand, at the distance of six cables' lengths, an E. b. N. course for twenty-three miles will then keep you in about mid-channel, safe from every danger, and will bring you to Rosmore island, which may be known by the ruined castle of Ardea, appearing right opposite upon the starboard shore, and Kepinakosh castle (a handsome castellated mansion, the property of Mr. Dennis Mahony,) which will appear right ahead upon the port shore; keep Kepinakosh castle right ahead, giving Rosmore island a berth of four cables' lengths, and you will avoid the Maiden rock, which lies nearly midway in the channel between Ardea castle, on the starboard shore, and Rosmore island, on the port shore, and on which the sea breaks at half tide. Continue to keep Kepinakosh castle right ahead until Rosmore island is one mile right astern, then haul over to the starboard shore, giving it a berth of four cables' lengths, and steer for the mid-channel between the Roanharick rocks. You will now perceive Danish island, distinguished by a remarkable clump of trees upon the eastern end, keep as near as possible in mid-channel, until this clump bears S. b. E. distant half a mile, when you may anchor in 4 fathoms, good holding ground, and well sheltered; go, however, cautiously, and feel your way with your lead.

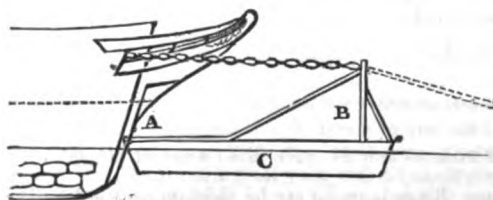
In exactly mid-channel off Kepinakosh castle is a most dangerous shoal of limestone rock; it is half a mile long, and a third of a mile broad; the depths of water on it are extremely irregular, and vary on it, in a boat's length, from 10 to 20 feet. This shoal is only known to the officers of the *Odin*, (which ship was saved from getting on it, by feeling her way cautiously with the lead,) and to a couple of fishermen; for even the coast-guard men were not aware of it.

It is the more dangerous, because all the charts give plenty of water there, and the sailing directions desire you particularly to keep in mid-channel, in which very situation the shoal lies.

Good water can be procured in all parts of Kenmare river, and Kenmare town is a good place for fresh beef and refreshments.

W. I. WILLIAMS, *Captain*.
J. TUCKER, *Master*.

THE RECOVERY OF THE SPHYNX STEAM SHIP.



Two camels, capable of supporting about 70 tons each, were floated, at low water, under the framework constructed underneath the vessel's paddle-boxes.

C.—Another camel, capable of supporting about 50 tons, having one end confined to the vessel's

bow, by means of two pieces of timber, for forking the stem, and pressing upwards against two stout cleats firmly fastened one against each side of the stem.

At the other end of this camel, a frame-work was erected, over which the chain-cables, hawsers, &c., used to haul the ship off, were led.

The draught of water at which the vessel draws, independently of camels, and other buoyant applications, is 10 feet. The ridge over which she was carried had very little more than 6 feet water over it. Thus it will be seen that the vessel was lifted up to the dotted line by the buoyancy of the camels and casks.

THE recovery of the *Sphynx* steam-ship from the fate which was generally predicted for her, has reflected so much credit on Capt. Austin, c.B., Com. Caffin, Lieut. Thompson, of the *Victory*, Mr. Bellamy, assistant-master attendant of Portsmouth Dockyard, Mr. Biddlecombe, master, and Mr. Mallard, second-master of the *St. Vincent*, and the officers and men belonging to the royal navy, and Mr. Watts, assistant-master shipwright, and the officers and men of Portsmouth Dockyard, that although it involves a repetition, in some respects, of what we have already published, we shall be excused for giving the following correct details of an operation which has excited so much attention. As we have before stated, it is impossible to commend too highly the exertions of all engaged in the arduous task, and the cheerful manner in which they endured all sorts of privations. It will be recollected that Com. Caffin, of the *Scourge*, steam-sloop (a most worthy officer,) was at first sent to assist in getting off the *Sphynx*. He at once saw the necessity of mechanical help, and immediately applied to the dockyard, when Rear-Adm. Parker, ordered Mr. Watts to go to her, taking fifty mechanics of different departments. In an officer of Mr. Watt's attainments, scientific and practical, Com. Caffin had a most agreeable colleague, and no time was lost in consulting on the best means to be adopted. It occurred to Com. Caffin that they should avail themselves of the paddle beams and framing to apply buoyant vessels of some kind underneath, and Mr. Watts thought a raft of casks or of tanks might answer the purpose. The difficulty, however, of lashing or uniting them together sufficiently secure to withstand the immense force of the rollers and breakers, so common off that part of the island, was seen, and Com. Caffin then suggested the London barge, decked over and applied as camels underneath the paddle-boxes. On this the framing was immediately planned, and Mr. Watt's designs were received at Portsmouth yard, where it, together with the barges, was prepared. In the first attempt with these barges they failed, in consequence in part of one of them having received injury for want of sufficient security. Unfortunately, it forged a-head, and the pump, which projected up through the deck, came in contact with one of the bearers of the framing, and ripped up a portion of it, which caused it to fill. But even if this accident had not happened, the change of weather would have defeated them. They profited by this experience, and Com. Caffin having left, Mr. Watts went to work to remedy and improve on the first attempt; and Capt. Austin having arrived, determined on carrying out the plans agreed upon. The barges were found not to possess sufficient buoyant power, and, consequently they were raised upon so as to bring them up to about 140 tons. Mr. Watts found that the nose of the vessel, instead of being lifted over the reef of rocks or banks, was rather forced into it by the downward action of the cables when hove upon. To obviate this, he had a third barge or camel prepared, with a framework at the extreme end sufficiently high so that when the cables, hawsers, &c., were carried over it, this downward action, instead of depressing the vessel, should produce the contrary effect. To accomplish this, he placed at the opposite end of the camel, firmly secured to its deck, two strong pieces of timber, kept sufficiently asunder for the stem of the vessel to pass between them, so that they forked the stem. Attached to the stem, immediately over this fork, was a strong cleat on each side. By the depressing of the end on which the frame was placed, the end next the vessel was raised, and an upward pressure on the cleats resulted therefrom.

Beyond this a great portion of the buoyant power of the camel came into operation. The undulations of the sea also contributed to increase its effects.

The *Sphynx*, cleared of everything except her engines, drew upwards of ten feet of water; and the reef over which she was ultimately carried had not more than six feet on it at the time. She had twice before been brought up to this point, and could not be got over it; but, on Wednesday last, by the joint effects of the camels under the paddle-boxes, the one against the stem, nicknamed the dromedary, and the two tiers of casks (*alias* bulls,) under the bottom, and main strength in heaving, she effected the passage. The outer shoal or reef, on which there was only about six inches more water than on the inner, brought her up again. The purchases having been perhaps prematurely detached from the vessel, not expecting that they would be further required, they impeded the progress of the vessel over the intermediate flat, and would perhaps have prevented her reaching the outer reef in time to get over it in that tide, so that the result would have been the same in either case; thus she was not got entirely over these reefs before ten on Thursday morning.

On the water being cleared from the dock into which this vessel was taken on Saturday, it was found that although she was not strained nor twisted in her hull, and the copper on her sides unbroken, that she had sustained some very considerable injury in her bottom. Her false keel has been entirely knocked away, and the main keel is so much rubbed and chafed the whole length of the vessel, that it is only in some places that any of it can be seen; indeed, it is chafed away to the garboard streak planking, which is also much rubbed, the copper bolts being either broken off, driven into her bottom, or else doubled up. The copper sheathing, (the whole length of the vessel's flooring,) for about 30 feet on each side from the keel is entirely rubbed off, and the floor planking very much chafed and rubbed away; indeed, in some places, particularly one on the starboard bilge, the planking is nearly worn through.

We have not heard what the expense of her repairs is estimated at, but we imagine it will take nearly £10,000 to place her in readiness to hoist the pendant. The shipwrights, on Saturday morning, stripped off the copper and began to clear out the wreck. We before stated Mr. Bellamy proceeded on Saturday in the *Echo* to Brook. He returned to Portsmouth on Monday evening with anchors, cables, and other gear which had been left behind. As many articles are still in the water which may at times be washed on shore, the Commander-in-Chief, Admiral Sir Charles Ogle, has given the necessary directions to the officer commanding the Coast-guard of that district to ensure their security. The two 68 pivot guns, and four smaller broadside guns, which were thrown overboard, still remain, and are covered at low water, to the depth of four or five feet; these will be recovered probably next spring tides. The rudder is also in the water, but at a considerable depth, and there is a doubt of its recovery.

The *Sphynx* has been ordered from Portsmouth to Deptford, where Messrs. Penn will refit the machinery, and the defects of the hull, &c., will be made good. With great pleasure we mention the Admiralty Board had, previous to the getting the *Sphynx* off the shore, rewarded the riggers and artisans employed on her for their extra exertions, and the damage done to their clothes, by a payment of about £6. 10s. each, and higher rewards to the leading men; in addition to which, all hands employed on her recovery were on Saturday assembled at the Naval College, when a public letter of thanks from the Admiralty was read to them acknowledging their services.—*From the Nautical Standard.*

ANTI-SHIPWRECK LEAGUE.

Melbourne, August 10th, 1846.

SIR,—In my letter, which you did me the honour to publish in your columns the 6th instant, I threw out the hint, whether it might not be for the interest of the inhabitants of this colony, that steps should be taken to diminish shipwrecks? If you will give me permission, I will add a few remarks on the subject. I lay it down as an axiom, which cannot be disproved, that, by the blessing of God, on the use of well known means, three-fourths of the shipwrecks, and the drownings consequent thereon, as they are now taking place in the mercantile navy, might be prevented. For proof of the axiom, I point on the one hand, to the British Royal Navy of the new and improved construction of vessels, where, in the course of these last forty years, there have not been ten vessels in a hundred, lost. I exclude from this enumeration, as not coming within the rule, vessels of the old construction, vessels battered to pieces by an enemy, and the old Falmouth packets. The latter used to be lost so frequently, that the editor of the *London Courier*, and author of *Stuart's America*, recommended if we could not build safe packets, that we should purchase them from the Yankees. A bitter taunt, on account of its truth I point, on the other hand, to the British mercantile navy, where there are not ten vessels in a hundred, above forty years old, and in corroboration, and to set refutation at defiance, I refer to Lloyd's Register of Shipping. If I had said five vessels in a hundred, I would not have exceeded the truth, but I wish to take up a position which cannot be disproved. Has there then been any special interposition of the Almighty in the case. I think not. In the royal navy, there has been obedience to his laws, ordained before man was created, or ships were built, and the reward is safety. In the mercantile navy, there is a disregard or neglect of these laws, and the punishment is danger and death. The next question which arises is, how long is this practice to be continued? The answer is, just as long as the public are inclined to tolerate it. When the new system of conducting Lloyd's Register of Shipping was established in 1834, it was apprehended by M'Culloch, author of the *Commercial Dictionary*, and other authorities, that the system would not answer the end intended, if the object was safety to shipping. And when we see by the register, vessels built to stand only four years in the first class, of which, at an accidental opening of the book, I see no less than five vessels in one page, what can we expect but that numerous shipwrecks and drownings will take place? But the public at large, and I do not say it either assumingly or presumptuously, but respectfully, since they consider it to be none of their business, know nothing about the matter. They have never thought of the subject, or if they did, the name of Lloyds' carries such a magic charm with it, as the greatest commercial establishment in the world, that they consider it to be the especial duty of Lloyd's to see that vessels, whether of wood or iron, are made as safe as it is possible to make them. To prove that M'Culloch's apprehensions were correct, first came a law (after Lloyd's rules had been established,) to make the carrying of deck loads illegal, and after a few more thousands of British subjects had been drowned, a recommendation that masters and mates of merchant vessels should be subjected to a voluntary examination of qualifications, which had at first been resisted to the knife's point. It is still not obligatory. Much remains yet to be done; and the sooner the public are made aware that merchant ships are built with very little regard to their safety, the better will it be for mankind. I do not give all the credit of safe navigation to a better construction of merchant ships and their proper equipment, although I consider it an important item in the

account, but I give all due weight to the proper use of the sextant for solar, lunar, and sidereal observations, the newest charts, chronometers, sympiesometers, sounding machines, buoys, beacons, lighthouses, seamanship, professional experience, and, above all, cautious and prudent conduct. Where the officers and crew survive, or part of them, call them to a strict account for the loss or abandonment of their vessel, under a penalty to themselves of fine and imprisonment, and to the owner of a forfeiture of insurance, unless they could prove that all due precautionary means had been used by them, and that the loss or abandonment did not arise from any neglect or default of theirs. When these means are used, it will be found there is little danger in navigating the ocean. The application of this, and some remarks on the loss of the *Cataraqui*, will occupy the space of another letter.

I remain, &c.,

To the Editor.

JAMES BALLINGALL

NAUTICAL NOTICES.

THE FREDERICK SHOAL, CHINA SEA.

SIR,—I send you an extract from the letter of the master of the late Frederick the Sixth. This ship had passed through the Straits of Sunda and Banca, and struck on the afternoon of July 6th, 1846. It is dated from Singapore.

“The shoal on which the ship struck is in the fair way of vessels bound to this place through Singapore strait, and is of small extent, not exceeding a cable’s length in any direction. There were even no breakers seen unless when blowing fresh at low water, nor any appearance of a shoal, the coral being of a dark colour. It is evidently of recent formation, for it is rather soft, the vessel having sunk into it about four feet before I left her.

Observations place it in—	N. Lat.	E. Long.
Master of Frederick the Sixth,	00° 36'	105° 17½'
Master of H.M.S. <i>Spiteful</i> ,	00° 36'	105° 19'
Master of brig John Baghew,	00° 36'	105° 15'

It is not named in the last edition of Horsburgh, nor is its position marked in *any chart*. The nearest danger mentioned in Horsburgh’s is the Geldvia shoal, in lat. 00° 48', long. 104° 59' E, upwards of sixteen miles to the westward, and twelve miles to the north, of this previously unknown danger. The least water found on it was 2½ fathoms, on a small patch about forty yards from the ship, and that was the only place on which the sea was ever seen to break.”

[The foregoing account of the Frederick shoal we have received from one of the directors of the Peninsular and Oriental Company. The shoal is laid down in the Admiralty chart of the China Sea, and is alluded to in a former page of this number. We have seen no other account of it than this.—ED.]

Trinity House, London, 24th February, 1847.

BUOY ON THE SALT SCAR, OFF REDCAR.—Notice is hereby given, that a *Black Buoy* has been placed to mark the extremity of the eastern projection of the *Salt Scar Rocks*, off Redcar, in the North Riding of the County of

York. The said buoy lies in $6\frac{1}{2}$ fathoms at low water spring tides, and with the following marks and compass bearings, viz. :—

Seaton High Lighthouse,	N. W.
Redcar Mill, and the Tower on Easton Nab in line,	S. W. b. W.
Marsh Church,	S. $\frac{1}{2}$ W.
Hartlepool Pier Lighthouse,	N. N. W. $\frac{1}{4}$ W.

By order,

J. HERBERT, Secretary.

STROMBOLI ROCK, Blasquets.—Extract of a Letter.

Leaving Valencia at 9h. 30m. A.M. yesterday, arrived at Tarbert at 7h. 30m. P.M., and reached Limerick at 8h. 30m. this morning. In passing through the Blasquets Sound, a very hollow sea at the time, I saw a rock which I suppose is the same that H.M. steam-vessel *Stromboli* touched. Its bearing and distance, as near as from state of sea that we could obtain, was, from the Islet of Dunmore Head, S.E. $\frac{1}{2}$ E. by compass, distant $2\frac{1}{2}$ cables, as near as possible in mid-channel between the point of Great Blasquet and the Islet of Dunmore Head, $\frac{1}{2}$ cable within the southern entrance of the Sound at low water spring tide. There is about 9 feet on the rock. I should say that it never would shew a break. At the time I saw it, it was dead low water, and in a very hollow swell, its point was a *foot* out of the water; no break shewing, although a very heavy surf on the shores, and in appearance and size it is very like Cleopatra's Needle; deep water close round it.

H.M.S. FIGGARD STRUCK BY LIGHTNING.

A tremendous burst of thunder and lightning fell on the mainmast of the *Figgard*, on the 27th of September last, off the Nisqually River, in the Oregon, which was carried fairly off by the lightning conductor fixed on the mast, without doing the slightest damage. Capt. Duntz reports to the Admiralty that but for the efficiency of the conductor the mast must have been totally destroyed and much other serious damage sustained.

It appears that the ship had been exercising the guns in the course of the afternoon, to the no small astonishment of the Indians. Although stunned by the repeated discharges, we are informed, by an officer of the ship, that when the heavens pouted forth their dreadful artillery the previous roar of the cannon sunk into comparative insignificance. If 50 broadsides had been discharged at once the report would have fallen short of the crash of the thunder. The storm commenced about 6 p.m., with heavy rain and sheet lightning. It gradually approached nearer and nearer the ship. At 45 min. past 7, the first lieutenant, whilst standing within a few feet of the mast speaking to one of the men, was astounded by an intense blast of light, accompanied by a most violent crash,—the electric discharge had fallen on the mainmast. The seaman close by nearly lost his sight by the vivid light, and was at the time thrown down on the deck. The electric matter passed by the conductor on the mast through the lateral branches to the side, and from thence into the sea, leaving every one in the ship stunned and amazed by the concussion and noise of the explosion. On examining the conductor, the vane spindle aloft was completely melted at the upper end, and blackened about two-thirds down. The lightning had passed harmlessly over the top-gallant mast and topmast down to the spider-hoop of the awning on the lower mast, about which point two of the joints of the conductor were started

from the mast, and the copper plates in one place separated by the expansive force of the discharge for about four inches. It finally passed by the conductors in the hull to the sea, bulging the copper sheet which covered the joint at the iron knees and bolts passing through the side. Not the least damage or inconvenience to the ship arose out of this most astounding explosion, which it must be allowed is a great triumph of science over the commonly destructive element of lightning.

Although the universal application of Snow Harris's lightning conductors to her Majesty's ships gave rise some years since to much controversial discussion, yet it appears from this and several other similar instances, that the general principles on which they have been applied are perfectly borne out by experience, and there is little doubt but that our navy has been rescued by Mr. Harris's labours from a large amount of destruction, the consequences of which have certainly been very prejudicial to the naval interests of the country.

Some of the greatest men in science of which we have to boast—the learned Dr. Wollastone, Sir H. Davy, Faraday, Daniel, Wheatstone, &c.—fully coincided in the general views entertained by Mr. Harris relative to the most effectual method of preserving shipping from lightning; that is to say, by rendering the whole mass together with the masts, so uniformly conducting in every part, that a discharge of electric matter falling on the mast would thereby lose its explosive form of action, constituting lightning, and being converted into comparatively quiescent current, traversing capacious metallic conductors, would become dispersed upon the sea without intermediate explosion or damage. Such really appears to be the result as shown in a great variety of instances in which lightning has fallen with explosive violence on ships of the Royal navy so prepared.

The surveying ship *Beagle*, under Captains Fitzroy and Stokes, was frequently exposed to severe thunder storms in parts of the world where such storms are most to be dreaded. This ship is reported on more than two occasions to have been struck by discharges similar to that which fell on the *Fisgard*. In the Rio de la Plata an electrical cloud was seen to thunder forth its lightnings on the mainmast. The vessel it is stated by Lieutenant, now Captain Sullivan, who had the duties on deck at the time, fairly trembled under the violent crash and concussion, the mainmast seemed a blaze of electric fire aloft, but the great body of the discharge passed harmlessly off by the conductor, as in the case of the *Fisgard*. Capt. Stokes in the account of the last survey, mentions a similar instance.

It appears that many of her Majesty's ships, the *Actæon*, *Asia*, *Dryad*, *Minden*, *Racer*, *Daphne*, *Scylla*, and some others, have all received similar protection from equally powerful discharges; indeed, since the universal employment of these conductors in the Royal Navy we have not been enabled to trace any instance of damage to her Majesty's fleet or ships by lightning: which considering the great amount of destruction and loss of life, besides the loss of the services of the ships when most needed, is certainly of vital moment, to the naval interests of the country.

It appears by the inquiry which took place into this question in 1839, under the countenance of the House of Commons, that nearly one half of Lord Exmouth's fleet, consisting of 13 sail of the line, employed in the blockade of Toulon, in 1813, were, on one occasion, all disabled by lightning within an hour. A similar occurrence took place in the squadron, under Sir J. B. Warren, in 1801. The *Hepulse*, of 74 guns, was so handled by lightning in April of the same year, in the Bay of Rosas, that she became almost a wreck; no less than eight men were killed outright, and nine others so severely hurt, that several died very soon after. No less than twenty of the ship's crew

were placed *hors de combat*. The *Repulse* is said to have suffered more than if she had been in a general action.

It is stated in the *Edinburgh Review* for October, 1844, that between the years 1809 and 1815, 30 sail of the line and 15 frigates are recorded in the official journals of the navy as having been disabled by lightning. These are most important facts for the consideration of any naval administration, and we feel assured they will not be lost sight of by the Admiralty.

Much of this damage has arisen, undoubtedly, either from an improper use of the temporary forms of conductors or ginally supplied to the navy, or from their insufficiency—for it is to be remembered, that during all this time lightning conductors are supposed to have been supplied to her Majesty's ships, as they are even now supposed to be supplied to merchant ships, especially those taken up by the government. The want of capacity, however, in these conductors—their irregular use and application—their dependance on the officers and crew of the ships for a judicious care and employment of them, together with their being constantly exposed to the operation of all those violent mechanical forces incidental to a ship's ropes and rigging, render lightning conductors for ships of a mere palliative kind, very uncertain and precarious, as experience daily shows. The merchant navy is said to carry wire ropes and other kinds of lightning conductors; yet the mass of damage by lightning constantly occurring in the merchant service is something frightful.

It was only in October last that one of those splendid American liners, the *Thomas Cope*, was struck by lightning and positively destroyed—ship, cargo, all lost. Another fine merchant ship of 400 tons, burden, the *Bayfield* of Liverpool, was destroyed in a similar way by lightning in November, 1845. Within a few years not less than 10 fine merchant ships are known to have perished in a similar way, and their rich cargoes lost. Among these are the *Walter Scott*, *Poland*, *Tanjore*, *Ruthelin*, *Bolivar*, and *Lydia*. The number severely damaged and set on fire is immense. We quite agree, therefore, in the principle, that if you desire to effectually defend shipping from lightning, it is requisite to make the vessel perfectly conducting throughout, as done by Mr. Harris—to make the conductors, in fact, an integral part of the ship, totally independent of the crew for their general employment and correct application—to make them so capacious, and apply them in such way, that, a stroke of lightning falling on the ship, the electric fluid cannot enter upon any circuit of which the conductor does not form a part. We have no doubt that were this system carried out in the large class ships of the merchant navy, those ships would be rendered as secure as those of the Royal Navy, against the destructive ravages of lightning; and we cannot but think that the Court of Directors of the East India Company have done wisely, in following the course of the government in the general use of such conductors in their Indian navy.

The positive uncertainty in the use of temporary forms of lightning conductors was strongly evinced in the cases of her Majesty's ships, *Kent*, of 74 guns, and *Perseverance*, frigate. It appears by the House of Commons' report, that the *Kent*, on the blockade of Toulon in 1810, had usually a chain lightning conductor in the main rigging, but it became so damaged by the working of the ropes, &c, that it was obliged to be taken down for repair, during which time the ship was struck by lightning, July 31, about daylight. Lieut. Godfrey, then in the ship, states to the commissioners that the mainmast was set on fire and totally destroyed, and all the spars more or less damaged—one seaman killed.

In the *Perseverance* a similar result ensued, the ship's rigging having undergone refit, the conductor was neglected. A heavy discharge of lightning fell on the ship, in the Bay of Bengal, and ruined the foremast. Several men were killed.

It is quite clear, therefore, that we cannot trust to such partial and temporary form of lightning conductors for security, especially since, as it is now admitted, it is quite requisite to defend each mast; thus giving the sailors three such conductors to look after and apply, instead of one only, as once thought sufficient.

EXAMINATION OF MASTERS AND MATES IN THE MERCHANT SERVICE.

March 3rd, 1847.

SIR,—In the *Nautical*, we frequently find instances mentioned of the incapacity and neglect of masters in the mercantile navy, and a strong argument adduced therefrom, of the necessity of an examination of these officers. On the other side of the question, it is only right and fair, that it should not be forgotten, that several of the most disastrous losses which have recently occurred, have been of steamers, *commanded by officers of the royal* (and, of course, of the *examined*) *navy*.

The *Great Britain*, we all know, was commanded by Lieut. Hoskin. Well, nine hours or so after leaving Liverpool, with a fair wind and fine weather, she is stranded in Dundrum Bay, her position being *unknown* to her officers *in that short time*.

The *Sirius* leaves Dublin for Cork, has fine weather during the passage, yet is run on the rocks in Ballycotton Bay, shortly becomes a total wreck; with a heavy loss of life. The ignorance of the master, as to the ship's position, of course was *the only cause of this wreck*. Lieut. Moffat (1811) commanded this unfortunate steamer, yet, despite his having passed the much lauded examination, and his long practical experience, he loses his ship.

The stranding of H.M. steamer *Sphynx*, which has so recently taken place off the Isle of Wight, despite her host of examined officers, does not afford much proof of the real value of an examination. What are the facts of this case? The ship is run on shore in a fog, just as the *Sirius*. In both these instances, surely the simple knowledge of the *bearings* of the land, together with the most ordinary share of prudence, should have prevented these casualties.

In the *Shipping Gazette*, within the last few days, it is mentioned that a revenue cutter struck on the rocks, somewhere near Dartmouth, and went down. The constant local experience of the officers of this description of vessels, combined with the first-rate sailing properties which it is absolutely requisite that these vessels should possess, certainly *ought* to tend to prevent accidents of this nature.

If the simple fact of there being a fog, can palliate and account for the loss of vessels, commanded by *examined* naval officers, why should the outcry against the mercantile masters be so great, when the greatest enemies of the latter would be sorely puzzled to produce instances of their *misconduct*, *greater* than the cases which I have previously cited.

The *President* was also commanded by a naval Lieutenant, but as we are not acquainted with the particulars, it would be unfair to draw any inference from this melancholy loss.

The *Great Liverpool* was also commanded by a Lieutenant.

In your number for last month, in reciting the loss of the *Sirius*, it states she was the first steamer that ever crossed the Atlantic. In Capt. Marryat's "Diary in America," it states that a steamer (built at New York,) made the voyage from Savana or Charleston, (I forget which,) to Liverpool, in the year 1819, in twenty-six days.

I remain, &c.,

To the Editor *N.M*

FAIR PLAY.

SUFFOCATION AND MURDER OF CHINESE EMIGRANTS ON BOARD THE SOPHIA FRASER.—*Precautions taken by the Government of India.*

[When we penned our remarks in the case of the *Maria Soames* in September and October last, we fervently trusted that we should never again hear of a repetition of these frightful tragedies; but hardly had those remarks reached Calcutta, when a correspondent there, from whom we trust often to hear, sends us back, literally by return of mail, another instance of these awful catastrophes, which we give below, with the pithy remarks of the *Calcutta Englishman*, following the extract, and introducing to his readers a most praiseworthy measure of the government of India, adopted at the suggestion of Mr. Piddington, who so to speak, was almost predicting the dreadful event which has served as a commentary in his note while it was occurring. We do not find in the Calcutta papers the advertisement alluded to, but our friend incloses it, and we congratulate the people of India on having such a paternal government, for, in this matter, at least, it has shewn that the poorest soldier and cooly emigrant *shall* be taken due care of; and, since it seems that there is still so much risk of life from ignorance, we trust the matter will be looked well into. The statement given in Mr. Piddington's memorandum of 10,000 souls and 50 ships having to cross, most of them these hurricane tracts, at hurricane seasons, is perfectly correct, and as perfectly startling that it should, apparently, never have been thought of before. If we add to this the Chinese who are now, it seems, proceeding from China to their various places of emigration in British and American ships, by hundreds and thousands, preferring them to their own junks, we shall shortly have a total of some 20,000 souls afloat every year. We trust that the subject of hurricanes will meet with that attention from our commanders which its importance demands, and are glad to find it in such good hands at Calcutta.]

"Commanders of vessels that may be engaged for the service in question will be required to supply themselves with a copy of the second edition of Mr. Piddington's Horn Book of Storms, and to undergo an examination, if thought necessary, as to their knowledge of the subject."—*Advertisement for Troop Ships, Cal. Exchange Gazette, 23rd. Dec., 1846. Orders to the same effect issued for Cooly Ships.*

A TYPHOON.—*Shocking Catastrophe.*

ON the 3rd January, the barque *Sophia Fraser*, Capt. McKellar, belonging to this port, arrived here, having experienced a typhoon in the passage from Amoy to Singapore. The typhoon commenced on the 26th November, when about in lat. 45° 13' N., and long. 112° 36' E. Through the kindness of Capt. McKellar, we are enabled to give the following particulars relative to the typhoon. It will be seen that, during the hurricane, a fray occurred amongst the Chinese passengers, which terminated in more than thirty of their number being killed, and many wounded. The fray originated, we believe, between two Chinese, belonging to different villages; the cause in dispute was espoused by others which led to blows and a sad loss of life; this occurred in the midst of the gale, when the attention of the captain and his officers was directed in securing the safety of the vessel. The wholesale manslaughter which occurred among the Chinese passengers, is not, perhaps, cognizable by our laws, as the flagitious acts of barbarity were committed on the high seas, by subjects of the emperor of China, on their fellow countrymen. It is, however, very lamentable to notice the inhuman proceedings of the Chinese coolies, all of whom who escaped death, were more or less in-

jured, and some of their number are now in hospital. To the presence of mind and resolution of Capt. McKellar, the preservation of the vessel and all on board is due :—

Nov. 26. 1 P.M., blowing a strong gale and every appearance of increasing, with thick cloudy weather; barometer falling. Furl'd the main-sail and driver, and double reefed the top-sails. At 4h. gale increasing; at 6h. still augmenting; barometer continued to fall. Furl'd courses and top-sails; at this juncture the sea was running fearfully, rolling in on both sides. At midnight blowing a perfect hurricane, accompanied with small drizzling rain. Great difficulty in steering the vessel owing to the heavy and adverse sea. At midnight hove to; head to N.W.; gale now raging furiously, barometer 28 in.

At 4 A.M., 27th, blowing very strong, and sea running mountains high: the sea washed away top-gallant bulwarks, stove the starboard quarter-boat and two of the stern dead-lights, filling the cabins with water.

The Chinese passengers were helpless, and in a most deplorable condition. Wind at N.E., barometer at 28.5. At noon, main-trysail and gib split, and were, in consequence of their being useless, cut away. At 2 P.M. gale shifting more to the N.W., but decreasing; barometer stationary 28.5; set a reefed fore-sail and closed reefed top-sail, and put the vessel before the wind, At 4 P.M. gale shifting to west and gusty. At 6 P.M. found the gale veering round to the southward, blowing more violently than before; barometer 28 in., and the mercury still sinking. The main and after hatches were then secured with tarpaulings in the form of tents, to admit air to the passengers, who were almost dead with fear and sickness. At midnight still blowing a perfect drift with no symptoms of alteration in violence. The bulwarks and bobstay were now carried away; cut away the mainsail and fore top-sail, in order to save the mast; ship labouring heavily. Shortly after midnight, or early on the 28th, heard a great noise proceeding from between decks; had no means of ascertaining the cause of the disturbance without opening the covering of hatches which would have allowed the sea to enter. At daylight the hurricane still blowing furiously; bar. 28 inches. Opened the covering of the main hatch, and ascertained that there had been a severe fight among the Chinese, a number of whom, about thirty, were found dead in a heap, dreadfully bruised and mangled; several others were severely wounded from blows inflicted with billets of wood, and crockery, which they threw at each other. The Chinese, in the height of their affray stove in seven casks, containing 250 gallons of water. The supercargo had the dead bodies removed; the captain dressed the wounded. Still blowing a fearful gale; not a stitch of canvass could be raised, barometer 27.90, slings and truss of the main-yard adrift, and chafing the mast. No observation.

At noon on the 28th, gale raging, and not in the least abated; sea running very high, in fact, it was washing fore and aft; the cabins were knee deep in water. At sunset still the same, but the barometer was manifestly rising. At 9 P.M. clouds breaking and wind lessening. Tried to set the mizen to keep the ship's head more to the sea, but, while securing the boom, the latter broke adrift, carrying one man overboard, and also wounding another severely. Ship had but little way, was fortunate enough to save the man; the mizen-sail was then made fast. At midnight, gale evidently breaking, barometer 28.10, still unable to set any sail.

At 4 A.M. on the 29th, gale moderating, the sky still thick and cloudy, bar. 28.30, got the mizen set. At 8h. set the fore and main top-sail close reefed, also set reefed fore-sail. Gale fast abating, sea running now higher than during the gale; during the forenoon were making sail with all possible speed, the masts, however, were in danger of going over the side, in conse-

quence of the heavy rolling of the vessel. A Chinese passenger, who had been some time sick, expired.

On the following day there was a heavy swell; the wind lulled into a calm.

Additional particulars of the Catastrophe on board the Sophia Fraser.— Since the above was in type, the shocking catastrophe has been inquired into by the police authorities here. From the evidence taken before the sitting magistrate, it would appear that 310 Chinese coolies were shipped at Amoy for Penang. On mustering the Chinese, on arrival of the vessel at Singapore, it was found that no more than 275 remained; the mortality, therefore, was thirty-five, four only of whom died from natural causes. The sufferings of the cooly passengers, crowded together, and without food, were fearful; in their agonies they appear to have become desperate, and to have fallen upon each other.

The circumstances attending the heart-rending affair, require a most searching investigation, with the view of preventing a recurrence of such shocking scenes as were perpetrated during the four days when all communication from the deck with the people below was cut off. Capt. McKellar appears to have done all that was in his power, his attention being directed to the safety of the vessel, during a severe typhoon, with a fearful sea running at the time, which washed over the ship repeatedly, threatening instant destruction. It certainly appears highly culpable on the part of the Chinese supercargo in failing to supply the coolies with dry rice, there being neither means nor opportunities for cooking, some of the poor wretches are affirmed to have expired from positive inanition, which a supply of dry grain would have prevented. The following particulars elicited at the Police-office will be read with melancholy interest.

Singapore, Police-Office, Thursday, November 10th.

Duncan McKellar, on his oath, stated as follows:—I am master of the barque Sophia Fraser, from Amoy, and the following is a correct statement of occurrences on board that vessel on the passage to this port, as entered in the log-book.

“ Three o'clock on Saturday morning the 28th of November, heard a noise among the Chinese passengers in the 'tween decks, but, at the time, owing to the gale, and our attention being to the vessel, had no means of ascertaining what was the matter; at daylight, when inquiring into it, we found there had been a fight among them, a number found dead dreadfully bruised and mangled, and several others wounded, according to their statement, with billets of fire-wood, and pieces of crockery which they had been throwing at each other during the fray. The supercargo had the dead bodies removed, and I endeavoured to dress the wounds of those who were wounded.

By the magistrate. What cause was assigned to you at the time by any of the survivors for the fight?

I understood that there were two parties from different villages who had been at feud between themselves, and two men began fighting, and it spread generally. I don't know the men of the different villages.

How many do you think were killed?

I really can scarcely say: I was fully engaged with the vessel in consequence of the severity of the typhoon, and also in taking care of the survivors, but I should think from 25 to 30 men. I understand from 300 to 310 were shipped, and mustering them last evening we found 275; four only had died natural deaths during the passage; the gale lasted for four days, during which it was impossible to cook, and I have no doubt that many died from sea-sickness and exhaustion. I was obliged to sustain my crew with biscuits, &c. We left Amoy on Monday afternoon the 23rd.

Koo Hang Leng, on his affirmation, stated that he was supercargo of the *Sophia Fraser*, from Amoy to Singapore and Penang. I shipped 310 men, four days afterwards the wind and sea were very high, and every one expected to be lost. I remained in the cuddy holding on by the leg of the table; for four days the storm raged, all my things broke loose and were destroyed. In the evening, about six o'clock, the Lascars looked down where the Chinese were, and said many of the men were dead. The captain and the mate said to me, it would be better to remove and throw the bodies overboard, which was done. I passed down, but cannot say how many dead bodies there were. I saw marks on the bodies and heads. Two days after, I inquired how the others had met with their deaths; some said by the motion of the vessel, and others said they had quarrelled among themselves, I heard no noise below. None could be heard from the violence of the gale. Some of the wounded men informed me that they were thrown, by the motion of the vessel, against the fire-wood, and it against them, as well as all their crockery. We had nothing to eat during three or four days; there was nothing in the place but water-butts and fire-wood; there were 30 campongs of people, they were all friendly on coming on board; but, from the gale, they had nothing to eat, and were like drunken people from weakness and sickness.

Lin Jun stated, that, during the gale, the Captain had the hatches fastened down, and when they were opened, there were 70 or 80 dead bodies. If the hatches had not been on, the sea would have swamped the vessel; the fire-wood was where the men were, and people were thrown on it—those who died, expired from suffocation, the galley was thrown down, and no cooking could be done. More than 300 men came on board, and more than 200 remain. I did not hear any thing of their being at enmity below, and fighting among themselves. It was God's doing, not man's. I was on deck; all my clothes were washed overboard.—*Straits Times, Dec. 12.*

We copied on Monday, from the *Singapore Free Press*, an account of the dreadful catastrophe on board the *Sophia Fraser*, by which it would appear that some thirty or forty Chinese labourers at least, if not more, have been suffocated or killed in their struggles to obtain fresh air on board of that vessel during a typhoon, when the hatches were necessarily battened down. We say killed in their struggles to obtain fresh air, because we believe that all the fighting was exactly for this and nothing more. It was the fight of the sufferers in the Black Hole "to get near the window," so graphically described in Governor Holwell's account of that tragedy. As to sea-sick coolies fighting out a village dispute, when sailors could barely stand on their legs, and this in the dark, we do not believe a word of it; those of the same village were probably calling to and helping each other, and the billets of fire-wood were good helps to force one's way with nearer to the hatchway, or out of the crush of the lee-wings, into which probably the whole of the poor wretches were swept by the rolls and lee-lurches of the vessel; and thus the idea of a village fight may have arisen.

We have permission to publish to-day a memorandum sent in to Government by Mr. Piddington, in October last, recommending, and on good grounds, precaution against the chances of such a catastrophe with our own troop or cooley ships, and we do so with great pleasure, for it reflects high honour on Sir Herbert Maddock's government, and on the marine authorities, that the suggestions of the memorandum were forthwith adopted, and all ships from hence taking troops and coolies ordered to be furnished with the work on storms alluded to, and the question of the best form of storm hatches to be reported on immediately. In the last advertisement for tenders for troop-ships, we notice that they will be required to be furnished with

Mr. Piddington's *Horn Book of Storms*, and their commanders to undergo an examination if necessary. We hail such steps as this, and the establishment of the Mesmeric Hospital, as cheering instances of the enlightened policy of our government, and doubt not that the principle which has dictated them, will force its way in due time in all other matters, whether of physical or moral science.

To return to the *Sophia Fraser*, it is clear, from the newspaper account, imperfect as it is in a nautical point of view, that her commander fell into the old and lamentable error of allowing himself to be tempted by a "fine fair wind," and ran headlong into the centre of a typhoon, against the warning of his barometer. He had only to heave to for a few hours, and the vortex would have passed a-head of him, and all the inconvenience he would have felt have been the heavy sea when he stood on, or the trouble of heaving to again if the southerly and south-casterly breezes, which almost always follow those storms on their north-eastern quadrants, had been strong enough to enable him to overtake the storm again. In the *Maria Soames'* hurricane, which we noticed in July, the *Orient*, Capt. Wales, not only kept out of it by heaving to, but after bearing up *twice*, hove to again, finding that the slow progress of the storm allowed the ship to overtake it. She had coolies on board, and with this able and scientific management, no inconvenience was sustained beyond that of a common gale of wind.

MEMORANDUM RELATIVE TO THE EMIGRATION OF COOLIES AND TRANSPORT,
OF TROOPS FROM INDIA.—By *Henry Piddington, President of Marine
Courts of Inquiry, Calcutta.*

28th October, 1845.

1. It would appear by the Newspapers that sixteen ships have been taken up by the Home Emigration Committee, to convey coolies from Calcutta to the West Indies, and about as many more for Madras. We have also ships proceeding from Madras and Calcutta with coolies to the Mauritius at all times of the year, and regiments returning home from the different Presidencies, so that altogether it may not be excessive to estimate that within the year upwards of fifty ships will proceed to sea from India, with fully 10,000 souls on board, all as dependent as children on the care and foresight of the Government for their safety and comfort.

2. In the beginning of the present year, the ship *Maria Soames*,* 1,000 tons burden, proceeding home from Ceylon with troops on board, ran, in pure ignorance, headlong into a terrific hurricane, in which she all but foundered; and, being obliged to batten down her hatches, *fourteen* individuals were suffocated, many seriously hurt, and the sufferings of the whole detachment were frightful. Had the hurricane lasted but a few hours longer, half the troops must have perished.

3. In November 1843, the ship *John Fleming*, proceeding from Calcutta to the Mauritius, also ran headlong into a hurricane, in the midst of which, Capt. Clerk states, in a letter to his owners, of which he gave me a copy, (and he repeated the statement in detail to me personally,) that the coolies, maddened by the want of air below, burst open the after-hatch, rushed into the steerage and cuddy, seized on all the boarding-pikes, cutlasses, &c, they could find, and, throughout the hurricane, kept forcible possession of that part of the ship, until fine weather returned. Capt. Clerk assured me that

* A full account of this catastrophe will be found in our last volume, along with some simple instructions for the conduct of ships caught in hurricanes.—Ed. N.M.

at one time he greatly feared they would have murdered himself, his officers, and crew.*

4. The foregoing are two distinct instances of imminent risks of foundering and suffocation, or partial suffocation, and always of severe suffering incurred on board of vessels carrying troops and coolies, by their running, through ignorance, into hurricanes. The instances of the foundering of the *Golconda*, with 300 troops on board, in the China Sea, in 1840, the wrecks of the *True Briton* and *Runnymede*, in 1844, and the recent narrow escape of the H.C. steamer *Pluto*, may be adduced, amongst many others, as unquestionable instances of the enormous expense and loss and sacrifice of life to which the Government may be subjected by the captains of troop or emigrant ships being ignorant of the law of storms.

5. Of the fifty ships above alluded to, a considerable number (all of those leaving Bengal and Madras from October, or to April or May,) have to cross three most dangerous hurricane tracts, and in the hurricane season. These are, the Bay of Bengal; the remarkable and most dangerous one which exists between 5° and 15° S., and 75° and 90° E. long.; and the neighbourhood of the Mauritius. The ships from Bombay have but to cross one, the Mauritius hurricane tract. The ships from India for the West Indies seem to have been properly timed to escape the Cape winter and the hurricane season of the West Indies, and the earlier ones, those of the Mauritius. Of the prevalence of hurricanes on both sides of the equator, from November, or earlier, no knowledge seems to have existed.

6. In transmitting to the Lords Commissioners of H.M. Admiralty, a pamphlet copy of my twelfth memoir on the loss of the *Briton* and *Runnymede*, I took occasion to suggest to their Lordships that ships conveying troops to India should be furnished with the works published on the Law of Storms, by Col. Reid and myself, as offering, for a few shillings expense, to every commonly intelligent commander of a ship, the knowledge whereby he might escape from, or even at times *profit* by, these tremendous storms; their Lordships have ordered all H.M. ships on the eastern station to be supplied with my *Horn Book of Storms* for the eastern seas, and by a letter from my booksellers in London, I have reason to suppose that they have also ordered that transports proceeding to India shall be likewise provided with them.

7. A farther precaution, which does not seem to have occurred to the Transport Board or Emigration Commissioners, though it is one which every sailor would think of, is, that ships carrying emigrants or troops through hurricane latitudes, should be provided with storm hatches. By means of these the hatches can be kept open for a very long time without risk of taking in water between decks, and the expense, which is trifling, is assuredly a matter not to be considered for a moment when the question is one not only of great pecuniary loss, but of human life, and, perhaps, even of a catastrophe rivalling that of the French frigate *La Meduse*; and the cases of the *Maria Soames* and *John Fleming* wanted but little more to make them so. Such an event, in the present state of nautical science, on an English ship, and with coolie emigrants, would be justly reproached to us as a nautical disgrace.

H. PIDDINGTON.

* The idea formerly prevalent amongst the native population, and no doubt carefully propagated by the females of the villages, was, that the Government "purchased" the coolies to feed a *Rakusha** with at the Mauritius! The poor wretches on board the *John Fleming* might easily suppose that the process of being suffocated between decks in a hurricane, was the first part of the sacrificial ceremony.

* Demon giants: a gang of them would eat up the moon at every eclipse, if we did not make a noise to help her.—PRINTER'S DEVIL.

WHALE-FISHING PROJECTS.—This is a subject which of late has been greatly before the public. It began in the *Aberdeen Journal*, in consequence of the return of the ships from the Greenland fishery to that and other northern ports. This was followed by the formation of a chartered company in London, of which Mr. Thomas Baring was the president; and lastly, by a plan to form a whaling station, by the Messrs. Enderby, in the Auckland Islands, 160 miles south of the New Zealand group. Thus there are three plans, of which it is proposed to give an account, and to say a little of their merits. 1st, Mr. Baring's Company. By this it was proposed to raise a capital of £250,000, and to engage in the Greenland as well as the South Sea trade. It was intended to send out picked crews,—that the best conducted were to succeed to be mates, and the mates to be promoted to the command of ships. All this part of the arrangement was excellent. Then it was thought that the average of voyages would yield a profit in a trade which was often attended with individual loss—and great reliance was placed upon the better arrangement made by a company and directors on a great scale than can possibly be done in any single ship. Still there were two difficulties which could not be obviated—1st, the severity of the climate of the Greenland seas; 2d, the necessity of fitting out a whaling ship for the northern hemisphere, for at least four years, without the chance of any return under three years. Notwithstanding the names, respectable in character, in wealth, and amongst them gentlemen of great experience in whaling business, recommended by a charter from the crown, every attempt to give it vitality has been adjourned; to speak in plainer terms, it has been abandoned. 2nd, Messrs. Enderby's plan was made known by the *Times* of the 13th ultimo, who, at the time of announcing, foretold its not being supported. Much is due to the Messrs. Enderby. Their respected father began the South Sea whaling; their worth, their talents, their means, are universally acknowledged—so much so that the French King Louis Philippe has presented them with a copy of the magnificent collection of French marine charts with which every French Admiral commanding in the Pacific is furnished; and the English government has made them a grant of the Auckland Islands, containing 100,000 acres; this small group was discovered by one of their whaling ships in 1806. It is without inhabitants, believed to have a fertile soil, and known to enjoy a delicious climate and excellent harbours; and here Messrs. Enderby propose, under a royal charter, to establish a whaling colony. All this may occur, but it will take many years to establish.—*Dundee Advertiser*.

BANKOK.—*Cape Town, Dec. 18.*—Among the arrivals of the present week we note that of the Margaret Connal, from the city of Bankok, in the kingdom of Siam. This is one of the eastern empires, which has hitherto been little known, and little visited by European enterprise, and as such we deem it interesting to our readers to furnish the following information, elicited from Mr. Maxton:—The populous city of Bankok is situated on the river Minam (translated, “the mother of waters,”) about twenty miles from its mouth. After crossing a bar it is navigable for ships of any size, having a depth of ten fathoms all the way up to that city. The river is deep to the very margin of its banks. The country is flat, and in the rainy season is overflowed, for which reason most of the houses are built on posts, and there is no communication for some months, except by boats. Sugar is the principal article of export, but the resources of the country appear to be immense, as it abounds with ivory, sticklac, hides, gamboge, tin, and other articles of eastern produce in great abundance. Rich mines of iron and extensive forests of teak exist in the interior, and the white elephant is occasionally to be seen among

the wonders of the place. Bangkok is one of the most commercial cities of Asia, and is much frequented by junks from China, Batavia, and Singapore; a number of junks are annually built and repaired at that place. A considerable proportion of the inhabitants are Chinese, by whom the trade of the place is chiefly carried on. The Siamese themselves are of an indolent character, and much of the business is effected by their women. The cargo of the Margaret Connal consists of 8,475 bags of white sugar of the first class, with 265 picols of sapan wood as dunnage, and two slabs of tin. Two thousand bags were shipped on board at the city, and the remainder of her loading was completed outside the bar. French and American missionaries are established in the country, and the Portuguese have a resident consul and vice-consul. There are two English mercantile establishments there at present, that of Messrs. James Hayes and Co, and that of Daniel Brown, Esq. The recent events in China, and the opening of that trade, will no doubt be the means of making us acquainted with many rich countries of the eastern world, of which Siam appears to be by no means an unimportant kingdom. Mr. Maxton is intrusted with a Siamese youth of intelligent appearance, and of influential parents in that country, for the purpose of being educated in the habits and acquirements of European civilization. Mr. Maxton had an interview with the mother of the Siamese twins, who inquired concerning the welfare of her children.—*Cape of Good Hope Shipping and Mercantile Gazette.*

Further particulars of the Hurricane in the Havana on the 10th and 11th of October, 1846, experienced on board the brig William Murray of Liverpool.

The weather for several days previous had been rather boisterous, wind steady at N.E., squalls at intervals with heavy showers, which moderated after sunset, the barometer ranging from 30.0 to 29.90, and thermometer in the shade 84°. On the morning of the 10th of October, the wind from E.N.E., with smart squalls and heavy showers of rain, which veered about noon to N.E. I then observed the barometer to have fallen two-tenths of an inch, and was then standing at 29.80, thermometer 84° in the shade, the weather looked rather squally, but no appearance of a hurricane. The barometer standing steady until 8 P.M., when the wind increased rapidly with showers of rain; when the second anchor was let go, yards pointed to the wind, and the vessel made as snug as circumstances would admit. At midnight, blowing a heavy gale, with a very wild appearance; the barometer had then fallen 29, and was falling rapidly, and gale increasing; at 8 A.M., blowing a terrific hurricane until the wind veered from the northward, remaining a short time in that quarter, and running to N.W.; blew a heavy gale for about one hour. I observed the barometer to have fallen as low as 28 in the height of the hurricane; the wind veered to the northward about 10 A.M., and to the N.W. about 10h. 30m. A.M., the wind then veered westerly and moderated, and finally veered and settled in the N.W. quarter. There was neither thunder nor lightning apparently attending this hurricane from sunset on the 10th of October until the wind veered from the northward; the wind was steady from the N.E. quarter. I observed, as soon as the wind veered, the barometer was rising rapidly, and at noon, on the 11th, had risen to 29. Probably, the barometer may have been lower than 28 inches in the hurricane, as I was laying at the time athwart hawse of a man-of-war brig in the height of the hurricane, and had no opportunity of attending to the barometer.

W. H. GREBOW,
Master of the late brig William Murray of Liverpool.

H M.S. *HERALD*, *Surveying in the Pacific*.—By letters from this vessel, dated Panama, Jan. 20th and 21st, we are informed that while at Siquatanejo, a circumstance occurred which had nearly proved of fatal consequence. Capt. Kellet, the Master, Mr. Hill, the Purser, Mr. T. Woodward, the Surgeon, Mr. Goodridge, and thirteen men, in two boats, went ashore to collect objects of natural history; and, shortly after landing, the whole party were seized by a large body of Mexicans (half Indians, half Spaniards,) armed to the teeth. It was with much difficulty they were restrained from using their long knives before the arrival of the Commandant, who declared them to be Americans, and took them all prisoners.

Notwithstanding all remonstrance they were hurried up to a rising ground, and imprisoned in a filthy shed. The Commandant would not credit their declaration of being Englishmen, although Capt. Kellett offered to take him on board his ship and convince him. At last the Commandant was prevailed upon to allow Lieut. Wood, of the *Pandora*, tender to the *Herald*, to go down to Acapulco (about 100 miles off), where there was a superior officer, for instructions. The *Herald*, meanwhile, had anchored in the port, and the seamen came forward in a body, on hearing what had taken place, to request the First Lieutenant, Mr. Maguire, to allow them to man the boats and make the attempt to rescue their captain, officers, and messmates, which he most prudently declined, as likely to lead to much bloodshed without accomplishing their object, as 200 troops had been brought up to the spot by the Commandant, who informed them that the moment any one attempted to escape, or a boat left the ship's side, he would break up the two boats which they hauled on the beach, and the troops should fire upon them.

Having no arms, the prisoners were obliged to put up with these insults, and remained in their wretched prison six days, on the last of which, one of the party was taken into the bushes and shown a large hole, which their captors had been digging, and was told that on the morrow they would all be hanged, and buried in that hole. On the following morning, however, Lieut. Wood fortunately arrived in the boat, bringing a letter from the Governor of Acapulco, ordering the liberation of the party, which took place in the afternoon, when they returned to their ship, right glad to be once more on her deck. "A narrow escape we have had of it," says one letter, "as any indiscretion on our part, or attempt to rescue ourselves, would have cost us all our lives." The *Herald* will remain at Panama until after April, when it is expected she will proceed to the northward to endeavour to gain some intelligence respecting Capt. Sir J. Franklin's expedition.

LOSS OF THE SIRIUS.—The late frequent loss of life and destruction of property, by casualties at sea, seem to us to demand the serious attention of the Government. Ship after ship is lost, hundreds of lives are sacrificed, and the series of tragedies serves but to awaken an ephemeral sympathy, or provoke a barren discussion in the daily prints.

It appears to us strangely inconsistent with the character of our legal system, which is ever careful of human life, that there is no tribunal of inquiry into the cause of death, when the result of circumstances, which do not come within the jurisdiction of the sheriff. A man is killed upon a railway; the most rigid inquiries are immediately set on foot. The skill and competency of the engineer are most rigidly inquired into; evidence is received of his caution or neglect in the performance of his duty. The character, construction, and fitness of the locomotive engine, is each made the particular subject of the severest scrutiny; and upon the result of the accumulated evidence on all these topics, the coroner's jury deliberate, and declare whether the loss of

life is the consequence of criminal neglect, or the result of combined circumstances over which man had no control.

How is it on the sailor's home? A ship is seen at sea, perhaps an emigrant ship, in an unworthy state, she of course founders in the first foul weather, hundreds of lives perish, "a melancholy shipwreck and loss of life," appears recorded in a newspaper, it feeds the curiosity of a day, and is forgotten, except by those who are made by the tragedy, mourning widows and helpless orphans. Another ship leaves the port of Liverpool, the model of her race, expensively freighted in human life and property, a few hours find her leagues from her proper course, a worthless wreck; her passengers providentially saved, it is true, but all else lost; and this is recorded, but the cause, whether criminal or purely accidental, is never revealed to the public. The result is too palpable to encourage doubt, but still it is a miracle, and the circumstances which attend it are too extraordinary to leave it properly without inquiry.

We have now the loss of the *Sirius* little less extraordinary than that of the "Great Britain."

We however, in fairness to the officers responsible for this last calamity, abstain from making any remarks. We are unwilling to deal with particular cases, it is the general principle that we advocate; and sure we are that if human life is of the same social value at sea as on land, its loss on the former element should be as rigidly and carefully inquired into, as is the case where the victim happens to be within the jurisdiction of the common law of England.—*Nautical Standard*.

NUMBER OF OFFICERS on the list of the Royal Navy, on the 27th February, 1830, and on the 30th September, 1846.

	1830.	1846.
Flag-Officers,	171	139
Ditto, superannuated,	24	...
Retired Captains,	14	2
Captains,	858	730
Retired Captains, under order in Council of 1840, . . . . .	...	48
Commanders,	918	855
Retired Commanders, under order in Council 1816,	100	100
Ditto, ditto, . . . . .	...	195
Ditto, ditto, from the Masters' list, . . . . .	...	41
Lieutenants,	3,550	2,538
Masters,	523	437
Inspectors of Hospitals and Fleets, . . . . .	...	9
Physicians,	12	2
Deputy Inspectors of Hospitals and Fleets, . . . . .	...	19
Surgeons,	793	644
Assistant-Surgeons,	862	293
Paymasters and Pursera,	642	481
	Totals, 7,967	6,533

TONNAGE.—*Extract*.—I have only been able to procure the new tonnage of a few ships, but they are sufficient to show that the difference in size between the old and new ships of each class, is much less than the old tonnage would give an idea of. The new plan may be relied on, as it gives the actual capacity, while, by the old method, all ships of the same

length and beam were made the same tonnage, whether deep or shallow, sharp or full:—

	Guns.	Old.	New.		Guns.	Old.	New.
St. George, .	190	2719	2670	Spartan, . . .	26	198	515
Queen, . . .	110	3099	2733	Eurydice, . .	26	921	517
Nile,	90	2622	2546	Andromache, .	26	717	471
Rodney, . . .	90	3088	2621	Rover,	18	590	346
Vanguard, . .	80	2589	2231	Hyacinth, . .	13	460	290
Ganges, . . .	80	2255	2100	Cygnets, . . .	6	358	212
Vernon, . . .	50	2082	1276	Infernal, steamer, ...	1058	1027	
Barham, . . .	50	1761	1213	Sampson, . . .	1299	1240	
Lancaster, . .	50	1501	1002	Terrible, . . .	1847	1736	
Flora,	36	1634	1003	Porcupine, . .	382	293	
Thetis,	36	1533	978				

As nearly every class ship is included in this list, it will give an idea of the new tonnage of all the ships in commission. I know nothing of the dimensions of *Sharpshooter* or *Rifleman*, but am anxious to know them, also their power and draft of water, and if possible the weight of their engines and screw. I think a return to the House of Commons is to be made of their particulars shortly, but it would not be difficult to get them in town.—*Nautical Standard*.

NEW BOOKS.

TABLES FOR FACILITATING THE APPROXIMATE REDUCTION OF OCCULTATIONS AND ECLIPSES FOR ANY PARTICULAR PLACE—By Charles F. A. Shadwell, Esq., F.R.A.S., Commander R.N. Bate, London.

In our volume for 1839 a paper appeared on the different modes of determining longitude, by Mr. Raper,* having been previously read by that gentleman, at the United Service Institution of London. The great importance of the method of Occultations was therein duly pointed out, and its favourable and unfavourable conditions freely discussed. The former preponderate so considerably over the latter, that for some years it has been practised, and stars occulted by the moon, have long taken their place in the *Nautical Almanac*, with the calculated times of the phenomena.

The observation is simple, and the longitude is thereby found after no very tedious computation. In a practical view, however, the familiarity acquired with other methods (the chronometer for instance) does not follow so readily with the occultation—the calculation is longer, the method less frequently available, the projection, if required, not only tedious but demanding considerable experience in nautical astronomy. Still it is valuable, and for determining absolute longitude, when corresponding observations of the same occultations have been obtained at Greenwich is, in its favourable conditions, unexceptionable.

The work before us is the first result of an attempt by Commander Shadwell to familiarize seamen with Occultations, by supplying them with "tables for facilitating their approximate prediction." He disclaims all novelty of design, having availed himself of the papers already published on the subject by several mathematicians. But assuredly the credit is due to him of having first placed in the hands of seamen a compendious set of tables calculated by himself from established formulæ; by which tables,

* Author of the "Practice of Navigation," a deservedly favourite work among seamen.

“ a quantity of tedious computation is reduced to little more than the mere trouble of inspection.” We will venture to predict that Commander Shadwell's method will be much approved, and that the work before us will soon become the established companion of the observers of Occultations.

NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

- NORTH AMERICA, East Coast.**—Sheet 8, from Cumberland Sound to the Gulf of Florida—Soundings by Capt. Barnett, 1846. Price 2s.
- HOSPITAL BIGHT AND PLAN OF OMOA HARBOUR.**—Capt. Barnett, 1841. Price 6d.
- SPIRITU AND ASCENSION BAYS, with a Plan of Cosumel Harbour.**—Capts. Owen and Barnett, 1831 and 9. Price 1s. 6d.
- BAHIA BLANCA TO RIO NEGRO with Additions.** Price 2s.
- MONGALUA—New Zealand.**—Mr. Halloran, H.M.S. late sloop *Osprey*, 1846. Price
- GREAT FISH BAY—West Coast of Africa.**—Lieut. Popham, R.N. Price 6d.
- LITTLE FISH BAY—West Coast of Africa.** Price 6d.
- THURSO BAY, including Scrabster and Dunnet Roads.**—Capts. Slater and Otter, 1844. Price 1s. 6d.
- OBAN BAY—West Coast of Scotland.**—Messrs. Symonds and Calver, H.M.S. *Shearwater*, 1847. Price 6d.
- SAILING DIRECTIONS for the Outer Passage from Sydney to Torres Straits.**—Capt. Blackwood, R.N. Price 3d.
- SAILING DIRECTIONS for the Inner Route from Sydney to Torres Straits.**—Capt. King. Price 3d.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

ADMIRALTY, Feb. 12—The following promotions have this day taken place, consequent upon the death of Vice-Admiral of the Blue W. Young:—

ADMIRALS—Sir S. Pym, K.C.B., to be Vice Admiral of the Blue.—Sir L. Curtis, Bart., C.B., to be Rear-Admiral of the Red.—J. R. Phillips, to be Rear-Admiral of the White.

Feb. 19.—The following promotions have this day taken place, consequent upon the death of Admiral of the White Sir Willoughby Thomas Lake, K.C.B.:—

ADMIRALS—Right Hon. John Lord Colville, to be Admiral of the White.—R. Honyman, to be Admiral of the Blue.—Z. Mudge, to be Vice-Admiral of the Red.—Sir R. H. Bromley, Bart., to be Vice-Admiral of the White.—S. Butcher,

to be Vice-Admiral of the Blue.—Sir J. Louis, Bart., to be Rear-Admiral of the Red.—P. Stoddart, to be Rear-Admiral of the White.

March 8.—The following promotions have this day taken place, consequent upon the death of Vice-Admiral of the White Nicholas Tomlinson:—

ADMIRALS—Hon. Duncombe Pleydell Bouverie, to be Vice-Admiral of the White.—Robert Jackson, to be Vice-Admiral of the Blue.—Brian Hodgson, to be Rear-Admiral of the Red.—William Bowles, C.B., to be Rear-Admiral of the White.

LIEUTENANTS—E. F. Dent—J. M. Reeves.

APPOINTMENTS.

CAPTAINS—A. Lowe (1845) and C. J. Boranquet (1846) to study at the Steam

Factory, Woolwich—T. Graves (1846) to *Volage*—G. W. D. O'Callaghan (1847) to study at Naval College.

COMMANDERS.—A. J. Woodley (1845) and C. Barker (1845) to study at Steam Factory, Woolwich—J. Rawstone (1846) to *Belvidera*—F. W. P. Bouvene (1842) to *Electra*.

LIEUTENANTS.—H. Stewart (1846) to *Crocodile*—Lord J. T. Browne (1846), A. C. Hobart (1845), and J. B. Field (1846) to *Hibernia*—F. D. Young (1845) to *Queen*—W. K. Hall (1841) to be Act. Com. of *Vindictive*—G. Raymond (1815) to *Ocean*—F. W. Smith (1846) and F. Wetherall (1846) to *Excellent*—A. C. Murray (1841) to *Victoria and Albert*—F. Beckett (1805) out-pension of Greenwich Hospital—B. H. Bunce (1838) to *Superb*—J. T. Dickens and H. W. Hire (1840) to *Rattler*—J. O. Johnson (1844) and H. Bullock (1843) to study at the Royal Naval College—L. Dennys (1812) to the Semaphore, at Putney—G. Johnston (1846) and T. A. B. Spratt (1841) to *Volage*—R. Reid (1843) to *Mariner*—S. T. Dickens (1846) to *Apollo*.

MASTERS.—G. Allen to *Undine*—J. Scarlett (Act.) to *Fanny*—W. T. Chapman (Act.) to *Volage*.

SECOND MASTERS.—J. Wallis to *Canopus*—T. C. Cove to *Penelope*—G. L. Carr to *Victory*—G. F. Macdougall to *Jackal*—J. F. Tomlin to *Volage*.

MATES.—F. L. A. Bullock to *Porcupine*—W. H. J. Browne to *St. Vincent*—F. M'Kenzie and J. P. Miller to *Excellent*.

MIDSHIPMEN.—E. Tonge to *Canopus*—M. S. Peile to *Superb*—R. Onslow to *President*—G. H. Mansell, J. H. Glover, G. Morrell, and A. J. Bullock to *Volage*—R. V. Hamilton to *Spartan*—T. Greer to *Ocean*—W. C. S. Sullivan to *Sidon*—N. B. Beddingfield to *Excellent*.

NAVAL CADETS.—O. Brock to *Trafalgar*—H. H. B. Webb to *Canopus*—H. Vincent to *Mariner*—R. B. Cay, G. Twiss, W. S. Bridger, V. H. Cumming, and C. W. Manthross to *Volage*—A. J. Villiers to *Thetis*.

MASTERS' ASSISTANTS.—H. Powell to *St. Vincent*—E. P. Stanistreet to *Crocodile*—A. R. Paterson to *Victory*—T. H. Laity to *Mariner*—Unguimban to *Vanguard*—A. Veitch to *Mastiff*—J. H. Kerr and J. Elms to *Volage*.

NAVAL INSTRUCTOR.—G. Foster to *Vanguard*.

CHAPLAINS.—Rev. C. Bellamy (1840) to *Ocean*—Rev. C. L. Bell (1826) to

Rodney—Rev. A. Watson (1829) to *Vanguard*.

SURGEONS.—A. Baxter to *Volage*—T. H. Keown to Royal Marines at Cork—W. Folds to *Royal Sovereign*.

ASSISTANT SURGEONS.—F. Harvey to *Volage*—J. Gunn to *Electra*—G. B. Hill (Act.) to *Ceylon*—J. M'Whinnie to *Excellent*—C. B. Wood (Act.) to *Caledonia*—C. P. Mingaye to *Spartan*—G. H. Edwards (Act.) to *Queen*—C. Ede to *Constance*—E. J. Walsh to *Flamer*—J. Gallagher (Act.) to *Victory*—G. A. Hallion to *Penelope*—W. Fasken to Plymouth Hospital.

PAYMASTERS AND PURSERS.—T. Hockings to *Endymion*—J. C. Little to *Volage*.—The following have been removed from the active list and placed on the retired list of 8s. 6d. per diem, making the number complete to 30—J. Browell, G. B. Harrison, and S. Giles.

CLERKS.—C. Cartwright (Assist.) and B. P. Heather to *St. Vincent*—F. Bradon to *Penelope*—J. W. Griffiths to *Terrible*—W. Rogers, as Secretary's Clerk to Sir J. J. G. Bremer—G. E. B. Robins to *Belvidera*—Major to *Hibernia*—E. Smith (Assist.) to *Victory*—C. Richards to *President*—W. W. Jackson to *Queen*—F. Buist (Assist.) and H. W. Jackson to *Volage*—O. D. Sibbald to *Caledonia*—Eversfield (Assist.) to *Excellent*.

FIRST ENGINEER.—J. Hurst (Act.) to *Avenger*.

SECOND ENGINEERS.—A. Douglas to *Terrible*—B. Greetham to *Amphion*.

THIRD ENGINEES.—R. Sleeman and B. Cokley to *Fury*—J. Bell, H. Orr, D. Fotheringham, W. Litchfield (Act.), J. Lovesing (Act.) and C. M. Collins (Act.) to *William and Mary*—J. Anderson to *Amphion*.

COAST GUARD.

APPOINTMENTS.—Com. T. Carpenter, R.N., to be an Inspecting Commander, appointed to the Sunderland District—Lieut. A. T. Freese, R.N., to be in command of a station, appointed to *Frazerburgh*.

REMOVALS.—Com. E. B. Nott, R.N., from Sunderland to Padstow District—Lieut. R. J. Bevians, R.N., from Yealm to Southampton Water—Lieut. L. Stephens, R.N., from Whitehouse to Carrickfergus—Lieut. W. Burt, R.N., from Orlock Hill to Bangor—Mr. J. Adams, from Bangor to Whitehouse.

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stubbington, near Fareham,
Hants.—February, 1847.

A. M. Day of Month	P. M.																							
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
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TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—FEB. 1847.

A.M.	1	2	3	4	5	6	7	8	9	10	11	12
70086	.0086	.0172	.0516	.
8	.	.	.	.	.	.	.	.0086	.	.	.0172	.
14	.0774	.0774	.0774	.0774	.0774	.0774	.	.	.	.	.	.
15	.	.0086	.0516	.0172	.0430	.0516	.0172	.0172	.	.	.0258	.
16	.	.	.	.	.	.	.	.	.	.	.0516	.0516
18	.	.	.0086	.0258	.0086	.0086	.	.	.	.	.	.
Total	.0774	.086	.1376	.1204	.1290	.1376	.0172	.0344	.0086	.0172	.1462	.0516
PM 7	.0086	.0086	.	.	.	.	.	.	.0258	.	.	.
8	.0258	.0258	.	.	.0258	.0344	.	.	.	.	.	.
10	.	.0172	.	.	.	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	.	.0774	.0774	.0774	.0774
14	.	.0172	.	.	.	.0086	.0250	.	.0430	.	.	.
15	.0172	.	.0086	.	.	.	.	.	.	.	.	.
16	.0172	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.0172	.0086	.	.	.	.
Total	.0688	.0688	.0086	.	.0258	.043	.043	.0086	.1462	.0774	.0774	.0774

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—FEB. 1847.

Miles	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
		156	213	437	729	.	.	.	153	.	87	677	1039	1151	663	13	72
No. of hours		19	18	30	57	.	.	.	19	.	14	20	67	58	43	2	6
Velo. pr hr.		14	11.9	14.5	12.8	.	.	.	14	.	6.33	8	16	19.9	15	6.5	9
Amt. Rain.	086	.	.	.	.086	.	.	.774	.422	.121	.052	.043	.017

Considering from 6 A.M. to 6 P.M. *day*, and from 6 P.M. to 6 A.M. *night*, we have 3114 miles the amount of wind during the *day*, and 2244 during the *night*. .585 inches the amount of rain during the *day*, and 1.024 during the *night*. Total wind 5356 miles, rain 1,609 inches. The greatest amount of rain was from S.W. to W.S.W. The number of hours during which rain fell was 47; and the number of hours during which the amount of wind is recorded was 320; during 272 hours it was calm.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

March 4, at Pembroke Dock, the lady of Lieut. Warren, of the Coast Guard, of a stillborn child.

March 9, at Eyarth House, Ruthin, the lady of Capt. Lacon, R.N., of a daughter.

March 15, at Kensington-gardens-terrace, the lady of Sir T. Maitland, of H.M.S. *America*, of a daughter.

Marriages.

Jan. 11, at Nusseerabad, East Indies, Major Philip Harris, Commandant 5th

Regt. Scindia's Contingent, to Ellen Mary, third daughter of Robert Burn, Esq., R.N., Stirling.

March 16, at Christ Church, Marylebone, E. Flood, Esq., late of 16th Regt., to Adelaide Jane, second daughter of J. Maddock, Esq., of H.M.S. *Rodney*.

Deaths.

Feb. 24, at Largs, Ayrshire, Mary, daughter of W. Edmonstone, Esq., Commander, R.N., aged 4 years.

March 5, Bernard Kiernan, Surgeon, R.N., aged 93.

March 13, at Portsea, Lieut. E. B. Davison (1807).

H. M. SHIPS AT PORTSMOUTH.—In Port—*Sidon, Salamander, and Rattler.*
—At Spithead—*St. Vincent, Victory, Excellent, and Victoria and Albert* (in dock.)—In Harbour—*Portland, Fairy, Centaur, Bloodhound, Undine, and Emerald.*

AT DEVONPORT.—In Harbour—*Queen, Caledonia, Volage, Confiance, and Constitution* (Brazilian).

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory,
From the 21st of February, to the 20th of March, 1847.

Month Day.	Week Day.	Barometer		Fahrenheit				Wind.				Weather.		
		Inches and Decimals.		Thermometer In the Shade.				Quarter.		Strength.		A.M.	P.M.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	A.M.	P.M.	A.M.	P.M.			
		In Dec	In Dec											
21	Su.	30.20	30.22	45	47	42	48	SW	SW	3	2	o	o	
22	M.	30.32	30.29	45	45	42	46	SW	SW	1	1	og	og	
23	Tu.	30.26	30.24	41	42	39	43	E	E	2	3	o	o	
24	W.	30.18	30.16	31	35	27	39	E	E	3	5	b	qb	
25	Th.	30.12	30.09	32	35	28	37	E	NE	2	3	bc	bc	
26	F.	30.04	30.10	31	38	27	39	N	E	2	4	bmps 2)	bc	
27	S.	30.06	30.08	30	31	27	33	E	NE	5	5	qops 2)	bc	
28	Su.	30.18	30.20	31	35	27	36	NE	NE	3	3	bc	bo	
1	M.	30.28	30.34	36	33	33	39	NE	NE	4	5	o	qo	
2	Tu.	30.42	30.48	38	42	31	43	NE	NE	5	3	qop 2)	o	
3	W.	30.50	30.48	39	41	37	42	NE	NE	4	3	o	bc	
4	Th.	30.45	30.39	33	41	28	42	NE	NE	2	3	o	o	
5	F.	30.25	30.23	40	41	38	42	NE	NE	4	4	op 2)	o	
6	S.	30.16	30.08	36	38	33	39	NE	NE	3	4	o	o	
7	Su.	29.96	29.98	38	40	34	41	N	N	3	3	oprh 2)	oprh 3)	
8	M.	30.11	30.07	40	44	34	46	N	N	4	3	od (1	o	
9	Tu.	29.97	30.01	38	38	36	40	N	N	6	6	qo	qbc	
10	W.	29.90	29.90	31	33	28	38	SW	NE	1	3	ops 1)	bophs (3)	
11	Th.	30.22	30.12	22	33	18	34	S	SW	2	4	b	b	
12	F.	30.05	30.12	34	42	27	43	NW	N	3	4	bc	bc	
13	S.	30.25	30.27	36	44	31	45	SW	W	2	2	bc	o	
14	Su.	30.33	30.31	35	47	34	48	SW	SW	1	2	b	b	
15	M.	30.19	30.15	39	51	30	52	S	S	2	3	b	b	
16	Tu.	29.90	29.84	44	54	40	54	S	S	3	4	b	b	
17	W.	29.83	29.83	46	58	42	59	S	S	5	3	qb	b	
18	Th.	29.86	29.85	45	55	35	57	S	S	4	3	b	b	
19	F.	29.72	29.62	46	54	38	55	S	S	5	5	qb	qb	
20	S.	29.55	29.57	48	54	45	55	S	SW	4	4	od (2	bc	

February 1847.—Mean height of the Barometer = 29.877 inches; Mean temperature = 35.4 degrees; depth of rain fallen and snow melted = 1.67 inches.

TO OUR CORRESPONDENTS.

The continuation of the paper on "GLOBULAR SAILING" came too late for our present number. It will appear in our next.

We have received the 6th number of Professor Berghaus's Atlas—full of interest to our naval readers. It shall be duly noticed in our next.

The "Jury Rudder" in our next.

The pamphlet is returned to Harley Street, with thanks.

Hunt, Printer, & New Church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

MAY, 1847.

THE KII ISLANDS.—*By Capt. M'Kenzie.*

THE Kii Islands are a group situated to the north of Port Essington. The eastern one is high and steep, with deep water close to and well-wooded, the west one is lower, but equally well supplied with wood and water. A quantity of cocoa-nut oil is made on them, and the inhabitants build a great number of small prows from their native wood, which is strong and durable. The natives of Arras, Goram, and the adjacent islands, buy these prows for their trading purposes. There is no anchorage at East Kii, (the north-east point is 3' 57" west of Wama-Arru,) but there is a small harbour on the western one called Kii Dulah, sheltered in both monsoons. S.W.b.W. from the north end of East Kii, leads up to the small island north of Kii Dulah; pass between it and the main one, and keep along the shore into the bight to the southward, leaving another small island to the westward, (there is a reef to the southward of the north island, but plainly to be seen,) when off the village, which is in the bight, come to in 12 fathoms sand. The water is remarkably clear here, and the bottom is plainly seen at 10 and 12 fathoms. Pigs and fowls may be got here. There is also a little biche-le-mer and tortoise-shell. The trade is gunpowder, musketry, hardware, and coarse cloths.

The Matabellas lie to the northward of Kii; they are not inhabited, being high and rocky. About two miles east of the south point of the largest island, is a reef, now above water, with vegetation on it: it was awash when first seen in the *Heroine*, 1842, but has since formed into a sand bank. There is a safe passage between the southern island and the large one, and along both sides of them close in shore.

The Goram group lie to the westward of the Matabellas; the princi-

pal island is the eastern one, Goram. There is a small reef harbour on its north-west side, called Andor, which is the chief place of trade. There are two detached reefs, which form the harbour having $2\frac{1}{2}$ and 3 fathoms coral rock, (and these may be less on some of the heads of coral,) there is 16 or 18 fathoms between these and the other reefs. Keeping the Matabellas their breadth open of the west entrance of Goram, will lead outside of them. If a gun is fired, a pilot will come off, but the passage is plainly distinguished from aloft. About N.E. b.E. leads in between the outer reefs, in 18 fathoms water; and a little more northerly into the entrance between the inner reefs; when fairly entered, keep a little to the northward, and then come to off a sort of stone pier, in 10 fathoms. Care must be taken, when going in to guard against the set of the tide, which runs strong over all the reefs; and the *Heroine* was once nearly horsed on the northern one, when going out with a light breeze and three boats a-head towing, passing over the tail of it, having 3 fathoms with the starboard lead, and 15 with the port one. This is a place of some trade, the inhabitants being rather enterprising and inclined to a nautical life. They claim a sole right of trading with some parts of New Guinea, and the inhabitants of these parts will not trade with Europeans readily, unless one of these people is on board as interpreter, &c. From New Guinea they bring nutmegs, massoy bark, biche-le-mer, birds of paradise, and New Guinea slaves. The inhabitants are mostly Mahomedans, excepting the New Guinea slaves. Refreshments are tolerably plentiful here, *i. e.*, fowls and fruit, and sago, which is prepared by the natives for sale in large quantities. The South Sea whalers call here sometimes for their stock, and the seas about here have often many sperm whales. There is a clear passage between the two western islands, also between the north-western one and the south-eastern Ceram-laut; but the channel is much narrower than laid down on the charts, a vessel ought to borrow to the Goram Islands.

To enter the channel between Ceram-laut and Ghissa, coming from the eastward, the reefs are quite plain, and by keeping along the edge of the eastern reef, and following the trend to the southward, the islet of Ghissa will be seen to the westward, and Kilwarri to the eastward; the anchorage is nearly between them, in 10 fathoms, sand and coral; the bottom plainly visible; the tides run very strong through these straits. The Arru Islands are very little known, the northern ones only being visited by Europeans. The south-west point of the Arru is a bluff point, with 9 fathoms close to it. To the eastward and north-eastward of it, there are several small low islands, with 5 fathoms, rocky bottom near them; the water about here is a dark green, and has the appearance of being deeper. The *Heroine* on one passage from Port Essington, not being able to weather the south-west point, worked to the westward, along the south side of these islands, and found the depth decrease gradually as the shore was approached. From the south-west point the land falls back N.b.E., and there is 8 fathoms at a moderate distance off shore, until the small islands near Dobbo are approached, when the water deepens to 12 and 15 fathoms. There is a clear channel to the southward of the first small island, and round to

the eastward of the next island (Wama), into Dobbo, but the usual passage is to the northward of Wama, between it and Wokano, the next island to the northward. The channel is not more than a mile broad, it being much contracted by reefs, which extend some distance from both shores; the depth is 7 to 9 fathoms, until a small creek on the north side is passed, then it deepens to 12 and 15, and off the Sandy Point, on which Dobbo stands, there are 18 and 20 fathoms. The passage lies about W.b.N. and E b.S., and is about five miles in length; it is high water at 2h. 40m., and, during the west monsoon, the tides are tolerably regular; but, in the strength of the east monsoon, the tide often runs for eighteen hours through to the westward, and merely slacking for a few hours. Wokau has a reef along its west and north-west side, more than a mile off the shore; the soundings on its edge are 6 to 12 fathoms; there is a channel between Wokau and Wadgia, but it is narrow and intricate, there being many coral patches in it, and spits extending from both islands. To the south-east of Wadgia is a small coral island covered with mangroves, distant two miles. The passage eastward of Wadgia is clear, as are the channels between it and the northern islands, Wassia and Kola. There is a large coral bank extending about two miles from off the west side of Wadgia, where the *Heroine* lay aground three days, before she was got off by lightening her. This was owing to an error in the chart, three islands being laid down south of Dobbo, and there were really only two. The *Heroine*, in the night, passed the third island, and was hoove to for daylight, the tide running in between Wokau and Wadgia, drifted her into the bight of the reef, and in standing off shore again she struck and grounded.

There is a large village on the north side of Wadgia where there is a river and creek, which grows of some size can go up at high-water. There is also a village of some size on the east side of Kola, a creek of nearly a mile long leading up to it. Kola appeared more cultivated than the other islands, which had all several villages, each under two petty chiefs called "the rich man," and "the old man," though their authority was very small. These islands abound with pigeons and wild pigs, there is also an animal similar to the kangaroo; fish is also very plentiful. A considerable quantity of birds' nests are found on them, and the bird of paradise is also found here, but it is not so brilliant in its colours as the New Guinea bird, consequently of less value. The eastera islands are those where the pearl shell and biche-le-mer are found. The natives of that part are about on a par with the New Hollanders of the North Coast; the women wearing no covering but a small mat six or eight inches square; they are fond of finery, such as fine beads, &c. Dobbo is the principal place of trade, the natives of the adjacent islands coming there to dispose of their produce, and get European goods in return. Dobbo is small, being merely a rendezvous for the Buggis and other traders of the eastern seas, who come here to buy the pearl shell, trepang, birds' nests, &c., from the natives, which they re-sell in Java and Singapore, where they purchase European goods for this market.

GREAT CIRCLE SAILING.

(Concluded from p. 145.)

III. We can form no adequate idea of the value of the facilities which modern science yields, unless we are acquainted with the immense labour required for the solution of spherical problems, unassisted by logarithms. When Wright had perfected Mercator's system, these valuable mathematical aids had not been discovered. Since we find, even in the present day, that the labour connected with the calculations of the data of Great Circle Sailing, has been adduced as an argument against the use of that system, we cannot be surprised that, previously to the invaluable discovery of Napier, the mariner eagerly availed himself of the more simple system of Wright, which, in shaping the course in a voyage between the Lizard and Barbadoes, reduced the necessary calculations from a series of problems requiring 2,830 figures for their solution, to the compass of 135 figures. Although the invention of logarithms a few years later, reduced the labour attendant on Great Circle Sailing to less than one-third of the previous amount, yet the advantages were not sufficient to compensate the navigator for the additional labour still connected with it, until the means of determining longitude had enabled him to practice it, and the extension of the field of commerce had enhanced its value.

In addition to these considerations, the application of steam propulsion to ships, had a powerful influence in inducing men of science to promote the re-adoption of Great Circle Sailing. For the advancement of this object, the further shortening of the process of the calculations of spherical parts became recognized as a desideratum, and Mr. Raper (a gentleman to whom the science of navigation is more indebted than to any other author of the present day,) succeeded in greatly abridging the labour, by contriving a method of laying down on a chart a track approximate to that of a Great Circle, by calculating the point that deviates the most from the rhumb track; he also computed tables, which show on inspection, the values of the two terms in the cosine of an angle of a spherical triangle whose three sides are known; still Great Circle Sailing was objected to on account of the labour it entailed on the mariner.

These objections are, however, now removed by a method invented by Mr. Towson, of Devonport, and by him presented to the Admiralty, and is now published by the Hydrographer, under their lordships directions, "for the benefit of all mariners." The method is simple and purely mechanical, and by it the course, latitude, and distance, for each fifth degree of longitude requires scarcely a minute to be taken out, and thus the solution of problems previously requiring the employment of hours, now occupy but some seconds. It is in fact, a *table of inspection*, the results being copied *seriatim* from the table, the arguments of which are obtained by a linear index and a pair of compasses, and thus the course can be much sooner ascertained than by Mercator's method.

But this is by far a less important consideration than other facts connected with these tables, the principles of which have hitherto escaped the observation of the mariner; this Mr. Towson designates Windward Great Circle Sailing. To this part of his research his attention was directed by Wm. Walker, Esq., Harbour Master of the Port of Plymouth. The table and method to which we now allude, as connected with windward sailing, is of four times at least, and frequently ten times, the value that it possesses in connection with direct sailing. In all previous nautical works, windward sailing was only regarded as belonging to plain navigation. No author of works connected with this branch of the science had previously regarded the earth as a sphere, or laid down rules for windward sailing between very distant points on the earth's surface. So far from this being the case, it has been the argument most frequently adduced against the practical utility of Great Circle Sailing, that its advantages must be confined to steamers or such vessels as can maintain an undeviating track. But it is now proved to be of much greater value to a ship that is required to beat to windward than it is to a steamer or to a vessel sailing before the wind. If a ship is to be navigated to a port situated in the direction from whence the wind blows, it is of no importance on which tack she sails first. But either on a plane or on the surface of a globe, the position of the ship must change with reference to her port, by the ship continuing to lie on either tack in such a manner, that the tack on which she is sailing becomes less and less favourable, till at length it becomes desirable that the other tack should be adopted.

The rule for windward sailing is, therefore, evidently to keep on that course which deviates the less from the direction in which the place of destination is situated, or, in other words, to sail on that tack on which the ship looks best up to her port. The terms course and angle of position, in connection with navigation, have, however, two significations—the Rhumb Course and the Great Circle Course;—much confusion and error has, therefore, existed in connection with the above rule. The mariner is most conversant with the rhumb course—he refers to his chart to ascertain on which tack his ship looks best up to her port, whereas we have already shown that the Great Circle Course is the true angle of position. We have also shown that these two courses in an extreme case, may deviate sixty degrees from each other. It is then evident that the mariner must be misconducted who chooses his tack by referring to his chart or rhumb course, if he be many degrees of longitude distant from his destination.

The application of the principles of Great Circle Sailing, if conducted by the rules previously adopted, would involve the mariner in calculations so laborious, as to render it impracticable. The approximate method of Raper is for this purpose valueless, because it depends on the point that deviates most from the rhumb track, which point also varies with the latitude of vertex, which again continually changes in conducting windward sailing on spherical principles. A steamer may be navigated on the arc of a great circle, the elements of which may have been calculated previously to her departure, but not so with a sailing ship that has to

contend with adverse winds. The mariner who conducts windward sailing governed by the Great Circle Course, cannot anticipate the calculations he may be required to make, since his track is not dependant on any particular Great Circle, but on a continually changing series, varying with the course which the direction of the wind may render it necessary that he should steer.

It has been suggested, that windward sailing might be founded on that Great Circle on which is situated the ship's places of departure and of destination, by laying down on a chart this track or the approximate one of Raper, and then to tack alternately on this line so as not to depart beyond a certain distance from the original Great Circle track. A little consideration will, however, prove the inaccuracy of this theory. Suppose two vessels, one from Brest, the other from Penzance, were both bound for the Bermudas, which lie, by the Great Circle course, nearly west of these ports. If the wind were west, the French vessel would commence her voyage on the port tack, the English ship on the starboard tack. These vessels might probably meet in latitude $49^{\circ} 15'$, at the very time that, by this proposed rule, both were required to go about. It must, however, be evident that, since these vessels are both bound for the same port, they should both adopt the same means to accomplish the remainder of the voyage with the greatest despatch. If it be the more advantageous for the English mariner to put his ship on the port tack, it must be equally so that the French vessel should be continued on that tack. The positions of the places of their departure can have no influence on the rules by which the remainder of the voyage should be conducted. This must depend on the ship's *present* position and that of the place of her destination; consequently, the ship's course cannot be regulated by the track on a Great Circle connecting the place of her *departure* with the place to which she is bound. The method proposed in connection with these tables is, that the mariner should, at least, once every day, and more frequently as he nears his port, commence his calculations *de novo*, with the data of the ship's latitude and longitude by account, and those of the port to which she is proceeding. By means of the linear index and the table, the course may be taken out in a few seconds, since, for this purpose, it is only necessary to observe the course adjacent to the ship's latitude by account, and then that tack must be preferred which is the nearer to such Great Circle Course.

To illustrate the advantages connected with this method of conducting windward sailing, an example is adduced of a ship supposed to quit Cape Turnagain, New Zealand, lat. $40^{\circ} 32' S.$, long. $176^{\circ} 49' E.$, for Valdivia, South America, lat. $39^{\circ} 51' S.$, long. $73^{\circ} 27' W.$; wind S. $84^{\circ} E.$, the ship sails 65° from the wind; Mercator's course north $89^{\circ} 32' E.$ The starboard tack is therefore $58^{\circ} 32'$ from the rhumb course, and the port tack $71^{\circ} 28'$; consequently, the ship, by the chart, "looks best up to her port" on the starboard tack. But the Great Circle Course is about S. $47^{\circ} 51' E.$, only about 30° from the port tack, but 100° from the starboard tack; consequently, if guided by the chart, the ship would be put on the starboard tack; but if by the Great Circle course on the port tack, supposing the rules for Great Circle Windward Sailing were

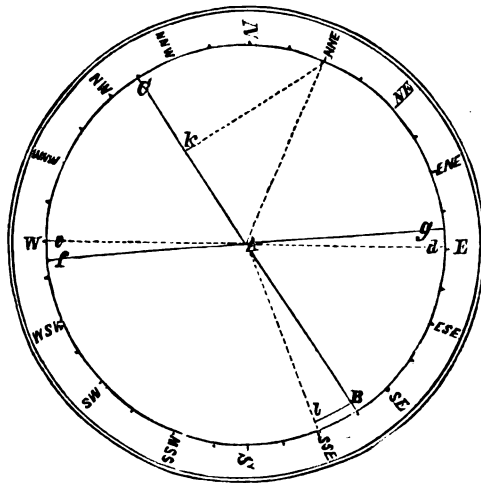
adopted, and the ship were to run therefore on the port tack, 500 miles sailing would thus bring her 456 miles nearer to her port; whereas, if by taking the chart as the guide, the starboard tack had been preferred, she would, *after 500 miles run, be situated four miles further from her port than she was at the commencement of her voyage.* Although this is an extreme case, it shows the extent of the errors that may arise from the adoption of rules in connection with windward sailing, founded on the principle of the earth being a plane. The true course when used in directing us in the choice of a tack, on which to put a ship, is of practical value under circumstances of distance in longitude, which would render it unimportant if connected with direct sailing. Thus, if the place of departure be only twenty degrees of longitude from that of the ship's destination, the direct Great Circle track is only from one to three miles shorter than that of the rhumb; but, under the same circumstances, it would make half a point difference in the course.*

If a vessel can keep within six points of the wind, she can only advance towards her port thirty-eight miles for each 100 miles she runs. But if her course be steered by a standard which is half a point from the truth, she may only near her port twenty-nine miles in the same given time. This, however, is the maximum error, and since the two courses will frequently both direct the mariner to prefer the same tack, and since also the difference between these two courses will diminish in proportion to the ship's approach to her destination, it will be found on an average to effect a saving of only thirty miles on the whole voyage, which, however, is tenfold that which could be obtained in conducting direct sailing. But merchant vessels heavily laden, or even ships of war in stormy weather, cannot keep so close hauled as within six points of the wind. Under such circumstances, the value of Great Circle Sailing is greatly increased. Suppose that, instead of keeping within six points, she cannot (inclusive of leeway,) keep nearer than seven points, then the advantage would be more than double. The maximum difference would be, that she would near her port only ten miles by the rhumb course, to nineteen by that of the Great Circle; and, under such circumstances, the average saving of distance on the whole voyage would be about sixty-five miles instead of thirty.

The advantage is not, however, to be estimated by the number of miles saved, but rather by the time occupied by the voyage. Great as the saving of from thirty to sixty-five miles is, when compared with from one to three miles, still it bears but a small proportion to the saving of time thus effected. Three miles in direct sailing is but half an hour's run; thirty, to a ship that can sail within six points of the wind, will make nearly twenty-four hours difference, and sixty-five miles to a vessel that cannot sail nearer than seven points, would give the advantage of between three and four days, even when the difference of longitude does not exceed twenty degrees. This advantage would be increased five fold in crossing the Atlantic, and twelve fold in navigating the Pacific.

* See table, p. 144, of the number for March, 1847.

The maximum error arising from choosing the tack on account of the ship "looking best up to her port," on it upon the chart, is liable to be committed when the direction of the wind is between the rhumb and Great Circle courses but nearly corresponding with the former.



Let Fig. 3 represent the horizon of South Cape, Van Diemen Land (A). *f, A, g*, is a portion of a straight line, which, on the chart, would appear to pass through that place and the Island of Chiloe, South America, and therefore represents the rhumb course on which a vessel would be steered on a voyage from the former to the latter place. The true angle of position on the globe is represented by *A B*; *C A B* being a portion of that Great Circle which passes through these two places, consequently the ship will near Chiloe or distance it, in proportion as she sails near to the direction of *A B* or *A C*. Suppose the wind to be east, that is, blowing in the direction of the dotted line, *d A e*, the course on the chart that would make the ship "look best up to her port," would be on the starboard tack, *A, N.N.E.*, but by sailing on that tack ten miles, that is, from *A* to *N.N.E.*, the ship would distance her port five miles and a-half, that is, the distance from *A* to *k*. Had the mariner been guided by the Great Circle Course, *AB*, in the choice of the tack, he would have preferred the tack *A, S.S.E.*, and by sailing ten miles on this tack he would have neared his port 9.95 miles, that is, from *A* to *b*. These calculations are founded on the presumption, that, under each circumstance, the ship would run 150 miles in twenty-four hours; but since a ship, when sailing near the wind, cannot make so much headway, as when the wind is favourable, the advantages in practice, will be greater in respect of the time saved than that which is shewn in these estimates. These averages are also made on the supposition of the wind blowing from one point of the compass during the whole voyage. But, under every circumstance of a change of wind, the mariner who is guided by the Great Circle Course, in the choice of his tack, will obtain an additional advantage over him who navigates his vessel by the rhumb course, provided that both mariners experience the same variations. If a part of the voyage is made by sailing directly on a Great Circle, and the rest by windward sailing, the advantage gained will be compounded of that which arises from these two systems.

THE CINQUE PORTS AND THEIR LOCALITIES.

(Continued from page 183.)

WE now come to Hythe: and various have been the opinions respecting its early history. Saltwood castle appears to have been a strong defence, intended for the protection of the town and port. Fusell and others doubt this; but they have again lost sight of natural causes, of the great change which evidently and on a sudden took place;—the raising from the deep that extraordinary mass of shingle called Dungeness. And if we admit that it once did not exist, except in a farther offing, then Hythe becomes another of the harbours on the borders of the Portus Lemanus, which had for its boundaries the rising lands of Hythe and Folkestone. Here, also, the ocean has invaded the cliffs. Leland describes its effects thus:—"Hard upon the shore be greate ruines of a solemne old nunnerie, yn the walles whereofe apere greate and longe Briton bricke; and on the right hond of the quier a grave trunche of squared stone. The castel yard hath been a place of greate buriale, yn so much as where the sea hath worne on the banke, bones appear half sticking out. Lord Clinton's grondfaether had there of a poor man a boate almost full of antiquities of pure gold and silver."

The majestic and stupendous cliffs now present a bold barrier to the tides; and Dover, my native place, next arrests our attention. It was here I first drew my breath, and, rambling among its castellated and romantic scenery, first imbibed a veneration for relics of antiquity, and carefully preserved any tradition or historic record which fell in my way. I had a maternal uncle whose name was Gallant Hampton. He was a man of extraordinary intelligence for his day; was descended of a noble Kentish family; and, uniting the ancient library of his father's house with periodical publications, supported himself by reading and lending books. My grandfather, also, was fond of reciting to us all he knew of ancient tradition from his father, who was a doctor and a scholar; and as my venerable ancestor was born in the reign of Queen Anne, and remembered Dover before the innovations of the first American war, which levelled some of its old ruins to erect batteries, we were highly interested by his descriptions. These, and an old eccentric gentleman, Tommy Pattenden, were my authors, from whose antiquarian researches I obtained the following traditions of Dover localities.

The castle, built by the Romans soon after their invasion of Britain, was no doubt intended as a defence for a much more important harbour or haven than Dover at present possesses. In a survey ordered during the administration of the right honourable William Pitt, then governor of Dover Castle, it was proposed to cut a passage through for the river which flows from the valley, and thus enable it to pass, in a straight line, to the bay, and into deep water; by this means a noble and capacious harbour would have been formed after the description which tradition has handed down to us of its first and ancient port, the proofs of which are many. The houses in Bench Street were built on the parallel

lines of piling which formed the old pier on the bank of the river. The old three-gun battery was erected upon the commencement of its stone mole, which, curving a little to the west, terminated in the bay, where its ruined head, now covered by the deep, is still recognised in its foundation stones, which are to this day called the Mole Rocks. The battery was a play-ground for myself and schoolfellows, till the present bridge, leading to the rope-walk usurped its place, and was a great improvement to that part of the town. From this point (which was the mouth of the port,) the sea flowed in an uninterrupted course up the valley to Waters-end, passing through where the villages of Charlton and Buckland now stand, and evidently navigable to Crab-hole (now called Crab-ble), as the remains of naval architecture have been found in that bottom, and heavy anchors dug out of the meadow lands. It is supposed by many, that the priory and Le Maison Dieu were erected on the ruins of Roman fortifications, which then stood on the bank of the haven; be that as it may, the magnificent baths which were discovered beneath the vaults of St. Mary's church, showed by their arrangement that a river or aqueduct had been in the immediate vicinity for their supply; and whoever has observed the Roman baths, in the Italian dominions, will immediately perceive that the ancients had not the slightest knowledge of hydraulic power, and chose for the site of their buildings situations where the water could be conducted through without any difficulty. Hence it is plain that St. Martin's, St. Mary's, the Priory, and Le Maison Dieu, were on the western side of the haven; Le Maison Dieu has for many years been called the victualling-office, a brewhouse, butchery, and bakehouse, having been constructed by the government under cover of its lofty ruins; and I have often seen the tars filling water from the pure limpid stream which, issuing from the walls of this once splendid nunnery, is still called "Our Lady's Well." St. James's Church is the only one remaining, on the eastern side, of the seven churches which Dover once possessed; and we now come to the consideration of the remote but probable cause which here, as in other parts, occasioned so extraordinary a change.

Had a gradual recession of the sea taken place, the river would still have ebbed in an uninterrupted line to the bosom of the deep, and the moles and bulwarks lifted their heads still loftier than before, in lieu of being hid beneath a mass of shingle, or covered with the turbulent waves. Whoever, in the present day, has observed the effect of one heavy gale upon the mouth of Dover harbour in a few hours, and the moving bar of shingle which will block up its passage, will easily reconcile to his mind the manner in which the Portus Lemanus was overwhelmed, and the different havens on our coast destroyed; when most probably, in addition to the tempest, the earthquake heaved from the dark chambers of the deep the loosened sand and pebbly bottom, and hurled them to the shore; and although from some natural cause that awful visitation is less frequent, still in our own memories it has been experienced in a slighter degree. In my boyhood, about the year 1797 or 98, a sharp shock of an earthquake took place at midnight, and, the generality of people being then at rest, it was little appreciated; it awoke me with a noise resembling

that of shooting coals from a cart into a deep cellar; in the morning we were surprised by the altered appearance of Shakspeare's Cliff, many thousand tons of its crest were precipitated, and formed a chalky promontory stretching into the sea at its base. The cliffs between Dover and Folkstone all bore evidence, more or less, of its effects; but the most remarkable change occurred at the Folkstone signal station. The land there had subsided considerably, while, upon the shore beneath, a bank of soil had been lifted above the waters. It had the appearance of lead coloured paint, and, when rubbed between the palms of the hands, gave out a strong sulphureous smell. A very heavy gale of wind succeeded this slight convulsion, or earthquake, and lasted two days, in which time it threw up such a quantity of beach between the piers of Dover harbour, that for several tides it was rendered unnavigable, till the powerful backwater of the sluices cleared a passage through to the sea. Now, the whole of the strata in the valley from the Marine Parade, through the streets and market-place, is intermixed with extensive patches of this sea-beach; and how clearly the derivation of names will prove the traditions of our forefathers. The sea having, in some extraordinary state of agitation, thrown up an immense barrier of beach and sand against the mouth of the river Idle, or Stream Brook, turned its course along the base of the western cliffs, till, labouring for vent, it issued forth where the present harbour stands, and, being diverted from a straight line to an acute angle, prevented the free ingress and egress of the ocean tides. The sand and soil, accumulating by degrees, would soon occupy the space of a capacious haven or harbour—this may be seen by artificial operations; the rapidity with which land is gained from the sea, when the scouring of the currents or wash of the tides cease, is almost incredible; as a case in point, the sunk island in the Humber is one; and that scientific man, Mr. Smeaton, informs us, that at Ramsgate, in five years, while the works of that harbour were neglected, an accumulation of soil took place in an area of twenty-five acres, equal to 260,000 cubic yards. Similar causes produce effects corresponding, or varying only with local circumstances; hence the derivation of the name of the upper basin or "Old Pent, forming that part of the port contiguous to its former or ancient entrance, from the word Pent," shut in, or shut up, and in contradistinction to the Paradise Pent, which is now covered with streets, but which I remember in high tides an expanse of water; however, as it had become a receptacle for all kinds of filth and rubbish, it was, about the year 1805, levelled and built upon. Round-Tower Street still points out the spot where Henry the VIIIth caused a tower to be erected for the preservation of the shipping lying in this anchorage; and Bulwark Street, formerly a part of the ramparts and fortifications, which terminated at the base of a rock on the strand, now called the Black Bulwark, or Bulwark Rock. Under shelter of this ancient wall, protected from enemies and storms, the seaman, grateful for the security afforded him, called the anchorage "Paradise Pent." In the years 1805 to 8 many excavations were made, and a canal dug out from the upper part of the Old Pent, to the foot of the Castle Hill. In this line many interesting remains were discovered, imbedded in the sea beach, which had been

thrown in upon them; and piling of a foundation was cut through, parallel to the line of the Bench Street. Many other proofs identify the position and existence of the old harbour, and may be traced in the names of different localities in the venerable town of Dover. In Doomsday Book, this harbour is described, and particularly in the reign of Edward the Confessor, as being a port of magnitude, and worthy of the most distinguished honours and privileges.

Proceeding from hence along the coast, we find the next assailable point to be the entrance of the river Stoure at Sandwich. Here the sand-hills, piled upon each other, occupy a large space from the N.E. end of Deal, to the mouth of this once fine river, which formerly communicated with the Wantsumn, and formed the large estuary already mentioned, affording an open channel from Richborough Castle to the Reculvers, between the Isle of Thanet, and the main land of Kent. The smiling villages which occupy this fine level are all upon a loose sandy strata, interspersed with marine substances, covered by a fertile soil, the deposit of many ages. Shells, pieces of wreck, anchors, &c. &c., have given evident proofs of their once proximity to a navigable channel, which their names evidently testify—Sand-Wick, Stonar or Estanore, Fleet or Ebb's Fleet, Stour-Mouth, Fordwick, &c. &c.; Sandwicke, upon the sandy, or sea shore; Stony-shore; Fleet, where Harold is said to have anchored his navy; Stour-mouth, where the Wantsumn waters joined; and Fordwicke, where, at low water, the river might be forded or crossed. This then was the estuary; and let us examine the tides, and see how improbable it will appear that a gradual recession of the waters took place:—it is high water in the Downs an hour and twenty minutes earlier than at the Reculvers, and, consequently, when the tide was at its full height upon their shores, it must have fallen several feet in the Downs, and entrance of Sandwich Haven. With what rapidity then must it have retrograded through the estuary upon the ebb tide, and what would be the effect if a channel were again cut through where it formerly existed? The natural anticipation would be, that the outset of the land waters from the Haven, aided by so powerful a stream, would again form the Brake and Goodwin into an island or islands. The flood which falls with such violence upon the chalky cliffs of Ramsgate and Broadstairs would partially cease, and be diverted into its ancient channel between Thanet and Kent, flowing in nearly a straight course from the South Foreland to Shepway and the Nore. It would be amusing to the antiquarian to sketch upon a chart or map, the probable boundaries of these ancient Roman ports,* havens, and estuaries, and he will be struck with the perfect coincidences between their ancient localities, according to tradition, and the known effect produced by natural causes. He will, I think, be convinced that the change was sudden and not progressive. The mouth of the Wantsumn is now crossed by a bar of soil much higher than the Levels, and its bed filled up with a chaos of chalk, flints, oyster-shells, and sand,

* The author constructed one since the publication of this work, and has a letter of thanks from the Antiquarian and Novomagian Societies.

intermingled with each other quite different to the formation of any natural strata. The sea having thus shut itself out to the north, an accumulation of soil would soon take place, as every tide flowing into the Haven of Sandwich would leave its deposit—mud-banks in a few years would be formed, enclosed, drained, and put into cultivation, of all which most probably we should have had records, but that the destructive wars continually changed their owners. The conquerors, mindful only of getting the lands in possession by their own swords, would bury in oblivion all former and more praiseworthy exertions.

Returning to the mouth of the haven, Richborough Castle, the Rutupium of the Romans, once flanked the southern entrance of the estuary and channel, and proofs are recorded of the sea having washed its walls; and there appears to be no doubt as to its insulated situation: most historians agree that there was a swamp or morass between it and the Isle of Thanet, which, together with the circumstance of that island being covered with wood, rendered it almost inaccessible. This accounts for the number of villages at present in the island which are named after enclosures of forest-land now no longer in existence but as corn-fields and gardens. Upon the open shore, between Richborough and Deal, Cæsar landed, and the difficulties he experienced are best portrayed in the annals of himself and his noble followers. He narrowly escaped losing his whole fleet, and his galleys suffered so much that he was obliged to send Labienus into Gaul for a reinforcement. The shores of the Portus Rutupensis were strewn with wrecks, and, as Romesgate, or Ramsgate, must have formed one headland of the port or haven, at a distance of only four miles from their station, it is very rationally conjectured that some of them first landed upon Thanet in that opening. That it was formerly called Romansgate* and Romesgate, corrupted by the Saxon language into Ramsgate, many historians believe; and that it had a harbour from time immemorial, Mr. Lewis, although piqued at its rising importance, contrasted with Margate, readily admits in his history of the Isle of Thanet.

The encroachment of the sea upon the chalky barrier between Ramsgate and Broadstairs is gradual and severe. The deeds of some of the estates will give an average of more than a foot less upon the edge of the cliff every year. I have conversed with old fishermen who remember the cliff at Broadstairs nearly one hundred feet further out in a sufficient projection to shelter the harbour in S.W. gales. The sea wears it into arches; about the year 1826, one of these formed a cool retreat from the heat of the sun at low water, and added much to the romantic appearance of Broadstairs bathing sands; but three years afterwards it was washed away in a heavy gale, and the land must have lost considerably at the same time; thus it is easy to foretell that, unless an artificial breakwater is run out to the beacon, Broadstairs harbour in fifty years will be quite open to S.W. gales, and afford no shelter whatever. And we may also perceive that the sea is encroaching, in lieu of receding,

* All ancient deeds of estates, with registers of births, are Romansgate. I have also a copper coin of Romansgate in Thanet, dug out of the soil.

along the whole of this line of coast. The Shrine of our Lady, and the Broadstairs leading up to it, are washed away, and the mariner no longer lowers his sails in token of salutation and religious devotion as he passes. At Kingsgate the arch formerly dedicated to St. Bartholomew is gone. The public house which, in the memory of persons now living, had a garden in front, and a carriage road past, now exhibits a very singular spectacle; the front of the house is gone, and the part remaining peers over the precipice as if anxious to follow its better half into the world of waters.

If, then, our own age shows us the remains of antiquity melting away around us upon our coast, while in other countries, not far distant, islands and volcanoes rise into existence, and cities are devastated by the convulsions of nature, reflection should teach us not to be too sceptical as to the traditions of our fathers, and we will now, for our amusement, consider the accounts which have been handed down to us relative to the Goodwin Sands.

AMERICAN STEAMERS AND RODGER'S ANCHORS.

Starcross, February 10th, 1847.

DEAR SIR,—In reading the distressing account of the loss of the American steamer *Atlantic* in Long Island Sound, detailed in the *Shipping and Mercantile Gazette* of the 17th December last, we are naturally led to an inquiry into the description of her ground tackle, and the inference is, that it must have been totally inadequate for the size of the vessel, a fault very universal in American steamers. In fact, it is only within the last ten or twelve years that English steamers have been provided with anchors and cables fit to ride out an ordinary gale in the event of anything happening to the machinery. Previously to this, ground tackle was comparatively calculated, according to Lloyd's rule, for sailing vessels of only *half* their tonnage, and I believe we are indebted, in a great measure, to Capt. Bain, who so long and ably commanded the *Monarch* in the London and Leith trade, for the alteration, as now all *sea-going* steamers in the United Kingdom are obliged to have at least one anchor and cable assimilating to the *required* size for sailing vessels. I say one, in as much as for merely stopping in a roadstead or river, the working anchor *should* be light and handy, there being but few hands on board a steamer in comparison to tonnage.

I have had a great many years experience in steamers both on the home and foreign stations, and have tested the quality of various kinds of anchors both intentionally and the contrary, and am of opinion that the light or working anchor for this class of vessel should be one of *Porter's*, which is not liable to fouling in a tide way, its weight to be of the proportion for a sailing vessel of half the tonnage. The best bower, "*Rodger's Small Palmed*," of the weight proportionate for a sailing

vessel of *three-fourths* the tonnage, and the spare, or sheet, anchor, also Rodger's of the same proportion as for a sailing vessel of *equal* tonnage, the cables to be one-fourth heavier, in size, than the proportion for corresponding anchors according to Lloyd's scale.

I have proved this latter description of anchor under extraordinary circumstances, and will mention one circumstance out of several.

In the month of October, 1843, the Pacific Steam Navigation Company's steamer *Chile*, of 700 tons, took up her usual summer anchorage off the coal mines in the Bay of Talcahuano, (south coast of Chile), for the purpose of coaling expeditiously, the prevailing southerly summer winds having set in for more than a month, and no appearance or likelihood of a norther. The coaling commenced, and, during the following night, the wind came in from the northward light, but the weather did not appear at all threatening. However, towards morning it freshened up so suddenly, that before the boilers and furnaces could be got ready for getting up steam to go further out, it was necessary to let go the best bower anchor, but, as the vessel was lying in shallow water, only 14 fathoms could be veered on that cable, with 35 fathoms on the small bower, the rudder being in 3 fathoms at low water, and the breakers on the shelving beach not above two or three ships' lengths astern. It was a very ticklish situation to be placed in, and although I had great faith in Rodger's anchors from severe trials on former occasions, my anxiety was much relieved when the steam was up. There were nine sail of vessels in the bay off the town, chiefly American whalers, much better sheltered than ourselves, they struck top-gallant-masts and yards, &c., and let go their second anchors, veering to the clinch, and all those which had a third anchor dropped it; every ship drove, more or less, but ourselves; one, the *Elizabeth*, formerly a government packet out of Falmouth, with heavy ground tackling of the *old school*, drove a-shore and became a wreck. Our anchors, both Rodger's, one of 20 cwt. the other 30 cwt., never started in the least, although with so small a scope of cable, and the sea heavy, in fact they appeared to have buried themselves completely under the ground, and we had some difficulty in waying the best bower, both flukes having been under; the gale was at its height by the time the steam could be got up, as the boilers were being scaled and cleaned as usual, but it was not found necessary to ease the cables by working the wheels.

No steamer should be allowed to go to sea without at least one anchor of this description, proportionate to the tonnage of a sailing vessel, to depend upon in a case of emergency, and there is little doubt but if the Atlantic had been furnished with such an anchor, we should not have to record her melancholy loss with so many valuable lives.

I remain, &c.

GEORGE PEACOCK,

Late Marine Superintendent of the Pacific S. N. Company.

To the Editor.

ATMOSPHERIC RAILWAYS AND STEAM NAVIGATION.—*Extract from a Report of Sir John Rennie.*

THE atmospheric system has been the subject of much discussion here and elsewhere. It was first proposed in 1824, by Vallance, of Brighton, where a working model was constructed of sufficient dimensions for the carriages to be introduced at one end of a tunnel, and the air being exhausted by a steam-engine at the other, they were propelled forward by the pressure of the atmosphere. It was even proposed to adopt the system for the speedy transmission of letters; the system, however, was necessarily so imperfect, that except for the ingenuity of the idea, it was of no practical utility. It was afterwards improved by Medhurst in 1827, and was brought forward by Pinkus, in a more complete form, in 1834, by making the carriages travel outside the tube; and in 1839 it was further improved and patented by Clegg; since that period it has been brought into operation by Clegg and Samuda, who tried an experiment upon a working scale, in 1840, for about a mile in length, at Wormwood Scrubs. This experiment showed that a load of 6 tons could be propelled at a velocity of 30 miles an hour, with an atmospheric tube only 9 inches diameter, and induced the leading proprietors of the Dublin and Kingstown Railway to adopt it, for extending that line to Dalkey, a distance of about $1\frac{3}{4}$ mile, where the country was difficult, and not well adapted for locomotives. That extension was opened in the latter end of 1843, and has continued working ever since. The line is single; the rails, although rather lighter, are laid upon the ordinary plan, and in the centre between them there is a tube about 15 inches in diameter, having a slit or opening at the top, which is closed by an elastic valve; a piston, fitted to the foremost carriage of the train, is inserted into the tube, which is connected at the upper end with an air-pump, worked by a steam-engine, which exhausts the air from the tube, and the piston attached to the foremost carriage is then urged along the tube by the pressure of the atmosphere, and draws the train with a velocity in proportion to the perfection of the vacuum in the tube; as fast as the piston advances, the valve in the slit of the tube is opened, and is closed again after the piston has passed, and is rendered tight and impervious to air by a composition of fatty matter placed in the groove into which the edge of the valve falls. The planes of this line are extremely steep, being in places 1 in 50, and the curves are very sharp. The highest vacuum obtained has been 26 inches, with a speed of 35 miles an hour. The train returns from Dalkey by gravity alone. For a first experiment, it has been tolerably successful. The system is being tried upon a larger scale upon the Croydon and the South Devon Railways; a portion of the former has been opened, and a speed of 60 miles an hour has been obtained, with a vacuum in the tube of 27 inches; and a train consisting of 10 carriages, weighing 50 tons, has been propelled 5 miles in $8\frac{1}{4}$ minutes, or at the rate of 35 miles an hour, the barometer indicating a vacuum 25 to 28 inches. The engines are 3 miles apart, and a power of 300 horses is employed for the whole distance. The tube is 15 inches in diameter, and the air-pump 6 feet 3

inches diameter; the steepest plane is 1 in 50. The South Devon line has not yet been tried.

Considering the recent introduction of this system, and the new contrivances required in all its details, much has been done; with further experience, it is very probable that much more will be effected. Pilibrow, in 1844, patented a modification of the system, which is ingenious, but has not yet been sufficiently tested by experience to prove its merit. Hallette proposed to improve the valve on the top of the atmospheric pipe, by means of two small inflated elastic tubes, fixed in grooves on each side of the opening on the top of the pipe, through which the rod attached to the piston should slide between the tubes, and which should close the orifice as the piston moved. This ingenious idea requires the test of experience.

Steam Navigation.—The extraordinary improvement in the mode of communication which has been effected by steam power and railways on land, had been preceded by equally surprising and important effects produced by the application of steam to sea and river navigation. The vast increase of personal intercourse between people of different nations separated by the ocean, which has resulted from this great discovery, and which is still augmenting, has operated more than any other invention on record (not even excepting printing, which has been greatly extended by steam) towards realizing what was once considered Utopian, the bringing of the various nations of the world together, and uniting mankind into one great family, working harmoniously together for their common good. The steam-engine, in its various and numerous applications, may justly be styled the grand improver and civilizer of the age. It is a gigantic yet docile labourer, equally well-adapted for extracting fuel and other minerals from the bowels of the earth, as for performing all kinds of toilsome, complicated, or delicate operations, whether for forging the ponderous anchor and cable to preserve the gigantic vessel of war from shipwreck, or for weaving the most delicate web for a lady's garment. Its power can be increased to almost any extent, and it can be made to perform with a degree of celerity, economy, and skill, every operation which formerly could be executed by the human hand alone, and an almost infinite variety of others, which without it could never have been attempted. It may also be employed as a means of conveying merchandise, and travellers from one place to another, whether for business or pleasure, with a degree of certainty, expedition, convenience and economy, attainable by no other agent. The increase of commerce, national industry and wealth, as well as greater personal intercourse between nations, serves to dissipate prejudices, and to create reciprocal good feelings towards each other, and thus to promote peace; but if, unhappily, war should ensue, then by the increased facility afforded for attack and defence, steam would equally serve to shorten its duration by rendering the results more decisive, and making mankind less willing to embark in it.

The origin of the application of steam for propelling vessels is claimed by several individuals of different nations; but it is generally admitted that to Great Britain is due the merit of having introduced and esta-

blished the successful practice of the present age. The application of wheels to propel boats, dates as far back as the Romans; in 1682, Prince Rupert's barge was propelled in a similar manner, and tug vessels, with wheels worked by horses, for towing vessels against wind and tide, were proposed. Papin proposed, in 1690, to propel boats by racks and pinions with pistons working in steam cylinders; Blasco de Garay, a Spaniard, is said to have made an experiment on propelling a vessel in the presence of the Emperor Charles V., at Barcelona, in 1543. The experiment is reported to have succeeded, and received the approbation of the emperor, who paid all the expenses. The invention, if it existed, died with the inventor, and nothing further was heard of it until after the introduction of steam navigation, when the statement was made in order to claim for Spain the merit of this great invention. Had this claim been brought forward earlier, and published to the world, it perhaps might have been allowed; but appearing at this time, it could have no influence, and must clearly be regarded as in no way interfering with the title of Great Britain to the discovery. Jonathan Hulls, in 1737, published a small pamphlet, wherein he gives a plate representing a boat with a wheel attached to the stern, driven by a steam-engine to propel the boat, and tugging behind her a vessel of war. This is clearly the first representation on record of a steam-boat. He took out a patent for the invention; but experienced so much opposition from prejudice, that he does not appear to have prosecuted it afterwards. Hulls proposed to apply Newcomen's engine for propelling the wheel, but as it was very difficult to produce rotatory motion with that kind of engine, that may have been one reason why it was abandoned. Savery proposed, in 1698, to apply manual power to the capstan of a ship, by the intervention of a wheel and pinion for turning paddle-wheels attached to the sides of the vessel; and, at a later period, Capt. Burton proposed a similar plan. All idea, however, of bringing the invention to bear, appears to have been laid aside until 1765, when the mechanical and scientific world had again turned their attention towards the improvement of the steam-engine, and Dr. Robison of Edinburgh proposed to Watt to apply steam for propelling vessels on land and by sea. Watt, however, at that time had not made sufficient progress with his invention, to enable him to take up and work out the idea with sufficient prospect of success, as it is evident, that he could not have considered Newcomen's engine at all calculated for the purpose. Watt, therefore, confined his views to perfecting his engine, foreseeing, no doubt, that when once that end was accomplished, other important results would follow.

The subject of steam-boats still lay dormant for a time. In 1782, the Marquis de Jouffroi is said to have made a steam-boat, 140 feet long and 15 wide, which was tried on the Saone at Lyons, but it was not successful. About the year 1787, Watt had so far perfected his steam-engine, and rendered it capable of producing rotatory motion, as to enable it to turn mills: he had thus overcome one of the principal difficulties, and prepared the way for the introduction of the modern system of steam navigation; but although numerous attempts were made with imperfect engines for propelling vessels, even after Watt had obtained

patents for his improved engines, yet it was not until after the expiration of his patent for the rotatory engine in 1800, that it was applied to steam-vessels.

About the year 1788, Fitch and Ramsey, of America, and Serrati, of Italy, appear to have tried some experiments, and thus they lay claim to the invention, but upon this point there is no accurate information. In the same year, Miller, of Dalswinton, constructed a double boat, 60 feet long, with two paddle-wheels in the centre, to be moved by manual labour, in order to race with another boat propelled by oars in the usual manner; it was tried upon the sea near Leith, when Miller beat his competitor, and the effect of this experiment convinced him that power only was wanting to bring the invention to perfection. Taylor proposed to apply the steam-engine for this purpose, and he then applied to Symington, a practical engineer of the day, (who had previously proposed some improvements in Newcomen's engine, and had made a model showing how it might be applied for the purpose of propelling carriages,) in order to assist him in applying the steam-engine for working paddle-wheels. A steam-engine with two cylinders, 4 inches in diameter, each of about one-horse power, was accordingly made by Symington and Taylor, and was applied to drive the paddle-wheels in the centre of the double-boat, employed for pleasure on Dalswinton Lake, in the middle of October 1788, when it attained a velocity of about three miles an hour. The success of this experiment was complete so far as it went, and established beyond doubt the merits of the discovery; it therefore induced the ingenious and persevering projectors to prosecute it further by making another vessel of the same dimensions as the former one, to be worked by an engine upon a larger scale; the engine was made at Carron, and was of a peculiar construction, in order to avoid infringement on Watt's patent; it had two atmospheric cylinders of 18 inches diameter, the pistons of which were connected with a lever acting alternately and by means of chains; pulley-wheels and ratchets turned two paddle-wheels, one being placed before the other, in the space between the two parts of the double boat; this machinery, it will be observed, was similar to Hulls' plan, improved, however, by having two cylinders. The boats and engines were completed, and the experiment was tried on the Forth and Clyde canal on the 26th December, 1789, and was still more successful than the first, having attained a velocity of four or five miles an hour. An account of this experiment was published in the Edinburgh newspapers of the day. The signal success of this second steam-boat rendered further experiments unnecessary, and it now only remained to bring it into practical operation. Messrs. Miller, Symington, and Taylor, had proved to the world the merits of the discovery, and not wishing to incur further expense or trouble in combating the prejudices and opposition of mankind, which invariably obstruct the introduction and prosecution of every great invention, did not pursue the subject further but left it to others to work out and develop the powers of their extraordinary invention, which was destined, at no distant period, to produce such a wonderful revolution in the social world. The engines and machinery were accordingly taken out, and deposited at the Carron Works, and the boat, which was only a

pleasure-boat, and fit for no other purpose, was transferred back to the lake of Dalswinton, and again applied to its original purpose. Mr. Miller returned to his agricultural pursuits; Taylor to his profession of a tutor; and Symington to his profession of a practical engineer.

(To be continued.)

WHALEERS IN THE PACIFIC.—*Loss of the Janet and Helvetia.*

By the arrival of the General Hewitt mail ship from Sydney, intelligence has been received of further murderous outrages having been committed on English vessels and their crews, by the natives of the South Sea Islands. The particulars have been forwarded by the officers of the Magnet whaler, Capt. Lewis, from which it appears that on the 14th of last January, that vessel came to anchor off the north-west end of Liffore, one of the South Sea Islands, and by a number of natives coming on board to barter with the crew, the latter were informed that a vessel had lately been captured, and most part of her seamen murdered by the natives of Maryree Island. In order to test the truth of this story, the Magnet got underway, and proceeded to the spot, which she gained on the following day. Soon after her arrival, a canoe came alongside with a missionary and three men, who had but just come from the south-west extremity of the island, and upon being questioned as to the alleged outrage, they confirmed what the officer of the Magnet had previously heard, their information being that all hands had been killed, and the ship sunk; but that the sails, rope, and part of her stores had been deposited in a hole in a rock abreast of the spot where the vessel went down. The missionary further informed the crew of the Magnet that another vessel had met with a similar fate; and that the whole of her unfortunate crew, with the exception of two seamen, who had managed to escape to a more secluded part of the island, had been slain; and that if the Magnet could lie to till the following morning, they would bring the two survivors on board. Capt. Lewis consented, and about the middle of the day the missionary came again alongside with one of the seamen, the chief having insisted on detaining the other, in order to insure the return of his companion. The account the seaman gave of the transaction was, that he sailed from London in the month of September last, in the brig Janet of Dumbarton, Capt. Gorman, on a voyage to the South Sea Islands, for a cargo of sandal-wood and tortoise-shell, but they were wrecked upon the coral reef on Caledonia, on the 14th of December. Some of the crew perished in the wreck, and the remainder (14 in number,) escaped by a boat, and landed safely on the same day in the Isle of Pines. Their stay there was but short, owing to the ferocious disposition of the natives; and they again set sail, in the hope of gaining some other island, where a more civilized race of people might be found. Unfortunately, they touched at Maryree, where they were immediately attacked, their boat destroyed, and twelve of their crew seriously maimed. He and another sailor, named Richards, were saved, and they eventually

sought refuge in that part of the island. He was then questioned as to whether he knew anything concerning the capture of the former vessel, and he replied in the negative, but added that lately a great many things had been distributed amongst the natives, such as sails, clothing, and mathematical instruments. He also observed that a short time previous, he had noticed a proa leave the island manned by natives, and amongst a great quantity of goods on board, he perceived a watch and chronometer. Nothing further having been learned as to the fate of the missing ships or crews, the Magnet proceeded on to Lippore Island, on a further search, and, on coming up to that place, the officers ascertained that the name of the former ill-fated ship was the Two Sisters, a South Sea whaler, and that every soul of the crew had been barbarously murdered. Shortly after her arrival off the coast, a large number of the natives of both sexes went on board. The crew were at their respective duties, but, unfortunately, one of them happened to take a slight liberty with one of the women, and a dreadful slaughter ensued. The natives then plundered the vessel, and, in order to carry out their diabolical revenge, fired her, and she was thereby utterly consumed. The crew of the Magnet being well armed, and believing that some portion of the unfortunate whaler's cargo was distributed amongst the residents of that part of the island, detained the brother of the chief (Bulla) until the things belonging to the Two Sisters were delivered up. Amongst the articles brought on board were a quadrant, greatly injured, a jolly-boat, with the name "Two Sisters," painted thereon, a chronometer, account books, and the log, which had been kept up to the 10th of December last. The Magnet then set sail for Sydney. Respecting the real fate of the Janet, it is strongly suspected that the sailor who gave the above account of her loss, and the other named Richards, planned with the natives her capture, loss, and the massacre of the crew. This opinion is strengthened by the circumstance that when he came alongside in the missionary's boat, he could have easily escaped on board the Magnet, but refused such an offer. Five fine ships, during the last two years, have thus been captured and destroyed, and their crews murdered, by the savage barbarians of the South Sea Islands.

Letters, it appears, have also been received, communicating the total destruction of the whaling-ship *Helvetia*, 330 tons burden, and the French East Indiaman, *Nouveau Tambour*, both of which, we regret to say, are supposed to have been fired by incendiaries.

The loss of the *Helvetia*, which was commanded by Capt. W. Porter, occurred on the night of the 25th of February last, in Sandwich harbour. Besides 150 barrels of sperm oil, she had 1500 of seal and other commodities on board, and preparations were completed for the homeward passage when the discovery was made. It appears to have commenced in the fore part of the vessel between decks, and every attempt on the part of the crew to get at it proved abortive. The alarm was given to the authorities ashore, who instantly caused the military to be turned out, and directed every assistance they were in possession of to save the vessel. Long before the vessel was boarded, the flames had gained the oil in the main hold, and burst forth in a terrific blaze, firing the rigging in every

direction, which, owing to the wind, was soon consumed, the masts falling over the vessel's side. Attempts were made to scuttle her, but she still floated, and was then abandoned. Subsequently, in the course of the night, her cables were cut, and the ship drifted down the channel with the tide; the guns on the fort opened fire on the burning vessel in order to sink her; several shots pierced her bows, but had no effect; and about three o'clock she struck on a reef, and stranded in six feet of water, where she continued to burn for nearly two whole days, and was entirely consumed. That she was wilfully set on fire the commander and officers had not the least doubt. They exempt the crew of the diabolical act, believing it to have been committed by a native who was employed on board, and had made his escape immediately after the outbreak of the fire. The captain and officers are sufferers to a considerable extent. The ship was insured for £12,000.

The burning of the *Nouveau Tambour* took place on the evening of the 18th of last month, June, off *Marseilles*, a few hours after her arrival. The fire originated in the after part of the ship, under very suspicious circumstances, and terminated in the destruction of the vessel. Unfortunately, one person perished in the flames, he was a son of the captain, and amidst the confusion fell backwards into the main hold, which was in one body of fire, and his rescue was beyond all human power. The ship's loss is estimated at £7,000.

REMARKS ON ADEN.—*By the Commander of the Ayrshire.*

Ship Ayrshire, at Sea, 1847.

SIR,—As the harbour of Aden, or Aden Back-bay, has not, until of late years, been much frequented by our merchant vessels, and the passage to it is not at all times the easiest to accomplish, suffer me to offer you a few brief extracts from the log of the barque *Ayrshire*, with remarks relative thereto; which, should you think them worthy, may prove of some use to those of your nautical readers going that way.

Before leaving Bristol all the volumes of the *Nautical*, since its commencement (which I am proud to say are in my possession) were overhauled, but without success, relative to Aden. Now as there is scarcely a port in the world of which you may not glean some intelligence from the pages of the *Nautical*, it seems high time that Aden should be found in its index—but I trust it will be so, from a more able pen, as at present there are not less than 24,000 tons of shipping annually visiting that port, to supply the coal depots of the East India, Oriental, and Peninsular Steam Navigation Companies.

To begin then, we left Newport in the *Ayrshire* on the 14th of Feb. 1846; had favourable winds until off soundings; then began a series of heavy gales from the south and westward, to which we could shew no canvass, more than storm sails, for most part, until the 5th of March;

we were then enabled to make sail to the southward, being then in lat. 47° N. lon. 17° W.

The ship being new and strong did not complain, but was very uneasy, rolling to windward, and with dreadful lee lurches also, that might have been obviated, in some degree, had due precautions been taken in loading. The coals *were too low*, they ought to have been bulk-headed off, between the fore and after hatchway, filled close to the upper deck, nearly the whole quantity there contained to have been kept out of the lower hold at *the ends*. The ship would in that case have been comparatively easy, and still carried the same tonnage. We carried our winds into the trade, made St. Antonio on the 20th of March, were close to it before it was discerned, and then only its summit, the body of the island being enveloped in haze. Lost the N.E. trade 26th, crossed the equator on the 2nd of April, in lon. $21^{\circ} 50'$ W.; sighted Trinidad the 14th, and passed the parallel of the Cape on the 12th of May; intending to have taken the Mozambique channel, touching at Johanna, to have laid in a good stock of vegetables, and filled up our water, this being very essential to all ships bound to Aden, in order to keep their crews healthy (as the water in Aden is both scarce and bad, at least so brackish that you might as well take a gentle dose of salts) and a very scanty supply of vegetables brought into camp by the Arabs. But northerly winds prevailing until we got too far to the eastward, sighted Bourbon the 4th of June, and passed to the westward about thirty miles. At that distance felt the influence of the calms under it, for a short time, and gladly steered away to the westward. On regaining the fresh trade, made the land of Madagascar, about Awdrava bay and Port Leven; on the 8th, steering off land, with a No. 6, breeze, were abreast of Cape Ambre, about midnight, but not seen.

The trade had increased to a No. 7, about E.S.E., took in first reefs, steering about north. Crossed the line on the 13th, in lon. $48^{\circ} 54'$ E.; our average of current from Bourbon to the equator S. 31° W., 105 miles in nine days; from whence to Cape Orfui, or Ras Hafoon, the currents were very strong and mutable. The first day after crossing the line, we were swept to the westward thirty miles; and afterwards constantly to the eastward, more or less, with a great deal of weed, and strong scent of the same. Average current from equator to Cape Guardafui was N. $85^{\circ} 30'$ E., 128 miles in five days, or 25.6 miles daily.

From the strong northerly currents said to be experienced between Guardafui and Socotra, sweeping vessels far to leeward at times, determined to steer for Cape Orfui, and run along the land from thence to Guardafui, and by shortening sail a little the night previous, managed to make it at daylight on the 18th. Some precaution is here necessary from the uncertainty and strength of the currents, and the hooked form of the cape; a ship might get embayed at night without seeing the headland, which is mentioned as the lamentable fate of more than one, by Horsburgh. Had a fresh monsoon running along the land here forming a deep bight up to Ras Banni. This cape we had on our beam at 2 P.M. distant four leagues; at 7 P.M. abreast of the Cape Guardafui, dis-

tance six miles, easily distinguishable from Horsburgh's description. Steering along due north, by 10 P. M. had ran beyond the distance of Cape Asser by log, and as the high-land of Guardafui, was fast receding from view, nothing to be seen in the western direction, concluded we were in a position to steer N.W., took in first reefs, expecting it to be squally on hauling under the land; in a short time began to shoal our water, by the lead kept constantly going, and on having 15 fathoms hauled out again to eastward of north, and could now see with the night-glass, but very indistinctly, a low deceiving point about N.N.W.

I cannot account for this, having ran more than the distance between the capes, otherwise than that a counter current probably exists in shore, making very great precaution necessary in rounding those capes at night-time, for the deceptive appearance of the land here, would deceive and lead any one astray. The *lead, and nothing but the lead*, can positively be trusted to, and must not be neglected be the night ever so clear. At midnight had fairly rounded, and contrary to expectations, the fresh wind fell away to a calm about 2 A. M., and continued until near noon; the 19th got a light breeze and hauled in shore, for Ras Met; from hence had very light and variable airs, with a slight favourable current, by keeping at a moderate distance from land, but found it most tedious up to Burnt island, and were a little surprised at not having the strong gusts spoken of by Horsburgh; who recommends, and very properly so, to have all best canvass bent in the months of June, July, and August. However we had yet to learn this, by bitter experience, when lulled asleep by the recent calms and light winds, as we got to the westward the wind came off the land at night.

On the 24th of June stood off from Burnt island; in standing over the wind increased and became more favourable, carried a great press of canvass across, and on the morning of the 26th expected to have been abreast of Cape Aden, but nothing to be seen at daylight; and on having sights, to our dismay, found we were fifty miles to the eastward; it now fell calm, found the current running not less than three knots to the eastward; at once concluded it to be useless to attempt beating up on this side. A fast barque which fetched into Aden Front bay about the same time, was ten days in beating round into Back bay, within the sound of the morning and evening gun the whole time, he lost kedge and warp, and on entering the harbour at night time, grounded on the mud flat which lines the northern and eastern part of the harbour, and had to be lightened before he hove off. Another ship making to leeward at the same time, stood across again to the African side, and fetched Aden on the eighth day.

We stood over again and fetched in with the coast of Africa, far to the eastward of Burnt island; now found the winds constant and strong from the S.W. to W.S.W., and to come off about midnight, in sudden and very violent hot gusts, to which we could shew but very little canvass, working to the westward of Burnt island. In standing over there came one of those tremendous gusts, blowing the clues out of the reefed sails, being all "prevented" and "stoppered," raised such a sea, we were glad to get under the land for shelter and bend other canvass, in-

tending to have anchored under Burnt island, but could not find sufficient shelter, the wind being at west, along the land; stood off and on under the lee, till we shifted sails. There is a good passage between the island and the main land, but we observed some shoal water about a mile and a half from the coast and tacked pretty close to it.

The seamen now began to complain of excessive thirst, and I was obliged to increase their allowance (although short) from the air being impregnated with sandy particles, in the hot winds; indeed, all began to feel it very acutely. While under Burnt island, searching, without success, for the watering-place, the gusts that came off were literally as though they came out of a furnace. Notwithstanding what is here narrated of our troubles in the passage up the coast, some vessels, a few days a-head, made the passage from Guardafui to Aden in eight or ten days, without difficulty, and apparent ease, the winds being favourable and moderate, the moon, then in the last quarter, having apparently great influence on the winds and weather in this bay.

Working along shore until off Ras Kurrum, or about sixty miles to windward of Burnt island, we experienced those heavy gusts which come off about midnight, but took especial care to be under double reefs and reefed courses before that time. Stood over from thence, and fetched to windward with ease although a heavy sea. The day previous to making Cape Aden, came suddenly into green water (from the deep sea blue), and the edges very clearly defined, had a cast of the lead but found no soundings.

On the 4th of July made Jibbel Shumsan (the high land of Cape Aden), bearing N.N.E.; stood on under all sail, breeze decreasing to a calm as we approached the high land, a short sea heaving us in; anchored in 10 fathoms, sand, Round island, or rock, bearing N.E. $1\frac{1}{2}$ mile; afterwards, in endeavouring to avail ourselves of a light air, got too close in, with the heave of the sea, and obliged to anchor in 6 fathoms for the night; veered to 60 fathoms, much closer to the rocks than agreeable, with the heavy sea tumbling in. In the morning, being still calm, were enabled to walk out half a mile, and into the opening of the harbour. We negatived the signal for assistance, as the H. C. steam-frigate, Auckland, had her steam up to come out for us, through the kindness of Capt. Haines, Political Agent to Hon. E. I. Company, and the commander of the steamer, on the representation of Luke Thomas, Esq., Agent to the Oriental and Peninsular Company. Ran in with sea breeze, and anchored in about 4 fathoms, sand, a quarter of a mile from the Coal Depots; moored N.W. and S.E. 40 fathoms each way, which is not too much for a heavy ship in the westerly monsoon, as the squalls at times are heavy, with a little swell, and the sudden sand squalls also that come occasionally from the northward and eastward, after very sultry weather, give but little warning, raising a dense black mass, and in half an hour, or less, burst upon you, covering and filling every crevice with sand. It is requisite to secure every hatch, skylight, and door, to keep it out, and to have all awnings furled, for while the squall lasts, or the pillar of sand is passing, you cannot discern a single object out of the ship. Had three or four during the time we lay there; in some, two or

three vessels drove and fouled each other, not having sufficient scope on their outer anchors.

In reference to the approach of the harbour from the westward during the *south-west monsoon*, the land is easily distinguished by referring to Capt Haines' chart, Jibbel Hasson, with the Asses Ears, and Sugarloaf on the west, and Jibbel Shumsan over Cape Aden on the east, and in running in to the N.E. the flag-staff on Ras Tarshain, near the entrance of the harbour, will be made out. I would recommend keeping the western land aboard, and having the harbour open, by steering in upon a N.E.b.N. to N.N.E. course, so that should it fall calm, you can safely anchor; and with the lightest air, will drive in with the swell. From not being acquainted with the localities, we erred in steering in with the flag-staff about north, consequently, on it falling calm (which is frequent) the strong western swell drove us too near the eastern shore, obliging us to anchor; whereas had we been to the westward, the same swell, with the light air, would have driven the ship into the harbour.

There is a buoy off Ras Marbut, moored in about 3 fathoms, which may be steered for, and passed at a moderate distance outside, leaving it on the starboard hand; but should the wind be scant to haul up for the anchorage, and any advantage obtained, it may be rounded quite close, in a ship of moderate draft, and smooth water. We passed inside, drawing 18 feet, but it was then near high-water; the rise and fall 7 feet, according to Capt. Haines; tides irregular from 9h. to 10h. 30m. on full and change. This buoy is not a mile from the anchorage, therefore sail must be reduced, and prepare to round to in a clear berth, near the Coal Depots. On the point called Ras-ban-Jarbayn, or Careening point, between it and the Flint rock or island, is the principal anchorage for the coal ships, the best water being off the point and decreasing toward the island.

The whole of the foregoing remarks are applicable only to the western monsoon. In the north-east monsoon of course the ships take the eastern passage, to fetch Guardafui; from thence there can be no difficulty, only taking care not to make the Arabian coast, as it is a lee shore, until up with Cape Aden. Back bay anchorage is *then* perfectly smooth: but the egress from thence to the eastward, is very tedious, and long passages may be anticipated in five and six weeks, at times, to Bombay, and even more from October to March and April.

As regards supplies in general, they are very scanty;—the beef very indifferent, 12lbs. for a rupee; mutton, little better, 8lbs. for a rupee; fowls, 5 rupees per doz.; sheep, 5½ rupees each; grapes, small basket, 3 annas; milk, bottle, 3 annas; common rice, 2-mound bag, 8 rupees; fine rice, 10 rupees; water, very brackish, 3 rupees 100 galls.; and for the *best* (being only one well), 6 rupees 100 galls.; of vegetables but a very scanty supply.

In ballasting there is great imposition, but you must submit, there is no redress, the boatmen being unregistered and thoroughly independent, come alongside in boats of all sizes, and make a general practice of asking pay for twice the quantity their boat could possibly carry. We thought to have made the best bargain by paying for it ourselves;

but the Dobash soon found means to prevent their coming at all, until we were let in to the secret, which was to give them an order upon him, as he, poor man, by our bargaining, was losing all his "dustoor;" paid at the rate of $1\frac{1}{2}$ rupee per ton for stones of all sizes; but, in consequence of the anticipated attack of the Arabs, it was difficult latterly to obtain at any price.

There is, at times, some detention here, when many vessels happen to arrive together. We lay a fortnight before breaking bulk, and were in port six weeks, having only fifteen or sixteen working days in that time, averaging fifty or sixty tons each day. The Oriental and Peninsular Company, at present, only discharge two vessels at a time, and there were four or five to the same company. The arrival of the steamers necessarily causes a delay of four or five days, as the lighters have all to be loaded in readiness, the day before her arrival, with bags containing a certain weight, and handy to send on board momentarily on her arrival, at which they work night and day, until they have put on board 400 or 500 tons. During the whole of this weighing and coaling, the coal ships are lying idle. We left Aden during the excitement of the anticipated attack, all under arms, and the ladies coming afloat every night for protection from the armed vessels, none of which could be spared to carry the mails to Bombay, it was proposed by Capt. Haines for the Ayrshire to carry the mails and any passengers to Bombay.

On the arrival of the Hindostan, on the evening of the 15th of Aug. we took on board the Bombay mails and passengers; and were towed out of the harbour at 11 A.M., 16th, by the *Sesostris* steam-frigate, at 1 P.M., cast off outside and made sail. On the 18th, at noon, were abreast of Cape Guardafui, passed to leeward of Socotra, and found the influence of the calms at least forty miles off; arrived on soundings on the 24th of August, but from twenty-four hours light winds, did not land our mails till the evening of the 25th, making the passage in nine days six hours; average set of current S. 56° E. 110 miles in nine days. For two nights previous to striking soundings, we had an opportunity of observing the wonders of the Almighty, in that striking and highly interesting phenomenon, the white water, of which I made some mention in the pages of the *Nautical*, on one of our passages to China some years ago. We witnessed it for several hours, in an extraordinary degree; all around us, as far as our visible horizon, being literally like a sea of quicksilver. Our passengers were very much interested with the sight. The officer in charge of the mails told me he had frequently seen the white water in those seas.

"They that go down to sea in ships, that do business in great waters, these see the works of the Lord, and his wonders in the deep."

J. H. BROWN,

To the Editor.

Commander, Ayrshire.

AUTO-BIOGRAPHICAL SKETCHES, by a Merchant Sailor, illustrative of the State of the British Merchant Service.

(Continued from page 195.)

THE duties of the vessel were now comparatively regular, the crew were very well disposed, and the rows, as they termed them, between the mate and skipper, formed a source of amusing conversation. The night after leaving the islands proved most beautiful, a light trade wind was sending the vessel onwards in her homeward route slowly and steadily, the moon soft, clear, and beautiful, as she only is seen in the tropics, gave an additional charm to the scene, when the mate, just before 8 P.M., became very much excited, abused the master, threatened to heave him overboard, clenching his fist in his face. Dressed only in his shirt and trousers, he paraded about the quarter-deck, while Jemmy, equally excited, but frightened at the bullying mate, was replying in language equally irritating and unpolished. The crew were passing their remarks on both in no measured terms, while poor Mrs. M. was crying at the insolence of the mate and the impotence of her husband. Just as the watch was called, the storm of words ceased, the master retiring below for a time; it was my first watch below, but as we usually slept on deck to avoid the heat and steam arising from the sugar, I wrapped myself in my pea-jacket, and laying my head on the fore-hatch, stretched myself on deck to pass the watch. I had slept but a short time, when I felt some one shaking me; I uttered some exclamation, indicative of annoyance, fancying it proceeded from some of the sky-larking pranks for which my shipmates were famous. Again I was touched on the arm, and looking up I saw Mrs. M., who asked me, in most imploring terms, if I would see her husband wronged? I, of course, replied that I would not; but at the same time said that I could not interfere with the mate, when the captain himself did not do so. I assured her I would see that she received no injury.

At this time the watch were aft listening to the vituperations of the master and mate, and laughing at their gestures, as they paraded about the quarter-deck. I gave Mrs. M. my pea-jacket, and while she sat on the spars to leeward, lamenting her fate, I tried to persuade her to go aft, and get into the cabin. Just then, Jemmy's voice was heard, exclaiming, "Send all hands aft, here." After a time, aft every one went to the capstan, Mrs. M. remaining seated on the spars. Jemmy and the mate, both in their shirts and trousers, were pacing about the deck, very much excited; the master's shirt sleeves were rolled up above the elbows. Coming to the front of the quarter-deck to meet the men, he said, "My men, (a favourite expression when he was excited,) the mate tells me that you despise me, and that he can have the command of the vessel when he pleases, is this the case? Have you any complaint against me?" The men said, "No, we have not." And they said so, sincerely; for Jemmy, although not respected, was a kind master, and good-natured on all occasions. Satisfied with his reception, he marched up to the capstan, and said, placing his hand on it, "Here

I place my hand, let every man who will stick by me, come and place his hand above mine." The men, smiling at the absurdity of the scene, at once placed all their hands above each other, and covering Jemmy's; on which he burst out, turning round to the mate, "There, you scoundrel, do you see that?" The expression brought a reply—a rejoinder followed—and the watch below, wearied, went away, one by one, to their sleeping places; leaving the two abusing each other as fast as they could.

I went forward to Mrs. M. and advised her strongly to go to the cabin; I offered to accompany her, and see her safe below, for the mate had been threatening her, as he was aware that she was watching his every movement narrowly. Aft we accordingly walked, when, just as we approached the companion, the mate, with a dreadful oath, threatened to knock the master down, and marched aft for that purpose. Roused at the threatened danger to her husband, Mrs. M. ran down into the cabin, seized a stout walking-stick, and ran on deck for the purpose of going to her husband's assistance; the mate and master were on the starboard side aft, she was running round the port side of the companion, when putting her foot on a rope, she slipped and fell, hitting her nose on the sharp edge of the hencoop, which formed a seat alongside the companion. The blood soon began to run down her face, which added to the shock and previous excitement, completely overcame her, and she fell, faintly exclaiming, "Oh! take me." I had just time to stretch out my arms to receive her, when she fainted; I carried her down to the cabin, and with the assistance of her niece, who was crying in a corner, very much frightened, managed to restore the unfortunate Mrs. M. again to consciousness. I then went on deck, where the mate was, as I fancied, just about to strike the master; fairly roused at his abominable conduct, I seized him by the neck, assisted by the steward and the men who were near, and dragged him forward, where he got well punished. Shortly afterwards he sneaked away to his berth below, and Jemmy soon followed, leaving the vessel once more quiet and undisturbed, just as the first watch was ending.

A tolerably quiet day succeeded this scene of disorder, and next night wishing to get some sleep in the middle watch, and avoid the chance of being disturbed by my larking shipmates, I quietly turned in amongst some hay, in the stern of the long-boat, which was kept for feeding the sheep and goats; covering myself over with a tarpaulin, I fell asleep in a most comfortable position. The middle watch was half expired, when I was aroused by my shipmates, and found all hands in a dreadful state of alarm. Shortly before they found me, the most appalling cries were heard, in the stillness of the night, as if uttered by a person in great pain and agony. First the man at the wheel exclaimed, "What on earth can that be?" Then the watch became alarmed—the cries continued more agonizing than before, and with a smothered sort of sound—the watch below were called up. The noise of the men running about, trying to discover whence the sounds proceeded, awoke Jemmy and Mrs. M., who both rushed on deck, without dressing: even the mate was alarmed. At length every one was present

but myself and being missed, I was sought after, and after some delay, discovered snugly ensconced among the hay in the boat. I was accused of creating a disturbance, and asked most anxiously what was the matter. I denied having uttered any sound, but I felt myself excited and alarmed, and although unconscious of it, had no doubt, while dreaming what I will now relate, given utterance to my sentiments of fear, in the cries which had so alarmed the whole crew.

Strange and incomprehensible are the connexions between our waking thoughts and our dreams. The dream which so disturbed me, had doubtless been induced by the scenes which had occurred on board previously:—I dreamed that the mate had resolved to gain command of the vessel, and for that purpose intended to murder the master and his wife; that he came to me and told me his intentions, and insisted on borrowing my penknife, with which he said he meant to cut their throats and throw them overboard. He dared me, under the penalty of sharing the same fate, to reveal his intentions. I remonstrated with him and refused him the knife; when he, uttering an oath and clenching his teeth (as I had actually seen him do in the scene with the master of the droger), with a most sardonic smile, and in a husky voice said, "You shall go first then." A struggle ensued, during which I had, doubtless, uttered those cries already described.

Tranquillity once again restored, the night passed away quietly, but I could not divest my mind of the idea that he meant, by some scheme, to get rid of the master; convinced as I was, from his conduct in the West Indies, that he was not very scrupulous. The idea once engendered, gained strength every hour, and the scowling, dangerous look of the mate during the day, exaggerated no doubt by my alarm, encouraged it, until I felt a sort of certainty, he would try some mischief. Pondering over the matter, I resolved to consult the cook. I told him all the circumstances about the laudanum, which occurred in the West Indies, reminded him of the unscrupulous nature of the mate, of which the master and Mrs. M. were ignorant, and he advised me, without entering into particulars, to put Mrs. M. on her guard. Telling Jemmy himself would have answered no good purpose, as he was too excited to look after such a matter, and it would only have made matters worse, by accusing him of his intention whenever he got excited. As I had no opportunity of conversing with Mrs. M., who kept herself very much aloof from the crew, and as the mate watched me jealously and prevented me approaching the cabin, I resolved to write a note to Mrs. M. I did so, expressing in general terms my apprehension, from circumstances which had transpired previously on the voyage, that the mate might attempt to injure her or her husband, to be on her guard, particularly as to what she drank. I sent the note by the steward, and shortly afterwards, while I was at the wheel, Mrs. M. came up, and kindly nodding to me, said, hurriedly, "I am obliged for your warning."

On the same night, about six bells, in the first watch, while the captain and Mrs. M. were leaning on the weather bulwark, looking over the vast expanse of ocean, beautifully illuminated by the moon, a scream from their niece in the cabin, sent them running below, when

they found the mate in Mrs. M.'s state-room, with the laudanum bottle in one hand, and in the other a jug which contained a drink which she was in the habit of using during the night. Yet notwithstanding all this, Jemmy took no steps to punish him for the present, or prevent such attempts for the future. He was allowed to remain in the cabin, and in no other way can the supineness and indifference of the skipper be accounted for, than from a fear lest an investigation into the mate's conduct should also disclose the weakness of his own. He talked largely for some days afterwards of delivering him up to the authorities when he got home, but I never for a moment supposed he would.

The mate's stock of spirits now became exhausted and he gradually became quiet, never, however, so much so, as on the passage out; he was now well known, and it was no use dissembling. He now began to write up his log, never touched since we arrived in the West Indies; he got from me the dead reckoning, the chronometer had long before ceased going, from neglect; and the master still pursuing his former habits, never kept any account of the vessel's progress. By dinner-time he was always influenced by grog, the excitement was kept up till past midnight, when, exhausted by his constant running about the decks, he would lay down on the hen-coop, or on the deck, and regardless of the dew or cold, sleep for an hour or two, then he would go below and remain until the following forenoon. If any necessary duty required all hands when he was below, he never came on deck, the mate or second-mate carrying on the duty. The master's energies were completely gone, and he was fast verging to the same state as he was during the former voyage. So little did he feel the neglect of duty which was so apparent to every man on board, that on nearing the Irish land and speaking a vessel outward bound, he asked the longitude, and being asked our longitude by the master of the other vessel, while standing on the fore-castle amongst the men, he coolly turned round to me, and calling me by name, asked me, "What shall I say it is?"

We pursued our homeward voyage with fair weather and favourable winds, and despite the misconduct of those in command, made a good passage; considering how little the safety and good conduct of the voyage depended upon those who should have attended to it, our good fortune was very welcome. We reached Liverpool in twenty-nine days, and our passage out was only thirty; thus favoured by winds and weather, suspicion of any misconduct was completely disarmed, and the skipper arrived in England with no particular circumstance to attract the owner's attention to what had occurred. While steering up St. George's Channel during the night, the mate, during his watch, altered the course two points from that given by the master; and, in consequence, before two hours had elapsed, we had approached very near the Welsh land. The men on deck at the time, declared that they thought the mate intended, if possible, to run the vessel on shore; of this, however, there was no proof; and after a very stormy altercation between him and the captain, the proper course was steered and the brig safely put under the pilot's charge off Point Lynas.

Here we fancied all our difficulties for the voyage had ceased, but we had yet to experience the uncertainty of winds and expectations; we got the pilot on board with a strong breeze from the westward, directly favourable for the prosecution of the remainder of our passage, the wind was strong and obviated the necessity of setting steering sails; the pilot fancied it would continue, and ordered all the steering-sail-booms to be sent down off the yards, and the gear removed. This was scarcely done when the wind veered round and came a-head, we had then to shorten sail, until we were under double reefs; again the wind became light and fair, and again all the booms and gear had to be got up. Indeed, from the time the pilot came on board, it was one constant scene of hard labour and exertion.

The vessel once safely in dock, the crew choosing their various boarding-houses, were soon involved in dissipation and fancied enjoyment; they were flattered by Jew slopsellers and fair cyprians, until their hard earned wages were expended, when they were left for victims better able to repay those harpies for the trouble requisite to fleece the unfortunate seamen.

No steps were taken by the master to bring the mate to that account, so necessary, considering his misconduct; a fear of the exposure of his own weaknesses, hindered him from bringing the mate's mis-doings before the magistrates; he was simply discharged, to remain unpaid until the cargo was safely delivered, when he was paid his wages but refused a character, and never afterwards was enabled to obtain a similar situation. He has remained ever since a rigger about the Liverpool docks, at times earning a living, and at others on the brink of starvation. The master remained by the vessel, without a single doubt existing on the part of the owner but that he was a most correct man, and it was only the vessel's being laid up, that prevented his being continued in the command. From the master and Mrs. M. I parted with regret, notwithstanding that many of the difficulties I met with, proceeded from his misconduct; he had always been kind to me, and beyond a little occasional irritation and his drinking, gentlemanly in his actions, while with both him and his wife I had shared so many dangers, and been co-actor in so many varied scenes, that I could not avoid feeling regret at parting.

THE WANT OF A LIGHT AT BARBADOES.

Athenæum Club, Jan 15th.

SIR,—Among the cluster of small islands in the West Indies generally known by the name of the Windward Isles, the most eastern and prominent is Barbadoes. From its windward position, the prevailing current, and being the land first made by all vessels approaching from Europe, this island has been, as might be supposed, the scene of many wrecks. As a sample, I may mention one that, it is to be hoped, has not its parallel either in the West Indies or elsewhere. In April, 1792, the King George, slave-ship, ran ashore on the windward side of Barbadoes; of her living cargo, 281 Africans, in

irons. were stowed between decks, with the gratings locked down, and perished in their fetters; the master and crew were saved, and 87 black women swam ashore and were sold into slavery!

I have no list of wrecks by me to refer to at this moment, but I remember that, in September, 1826, the *Cora*, Capt. Abbot, was lost on the island; in June, 1827, H.M. packet *Cynthia* was driven, by the current, on the reefs that extend off Point Kendal on the south-eastern side; and in June, 1828, the ship *George*, of Bristol, bound to St. Vincent, ran ashore near the same spot, and also became a wreck. In 1834, the bark *John Stewart*, from Demerara to London, was totally wrecked, and the crew with difficulty were saved; and, not to be tedious, during the last year, no less than three wrecks have taken place on the reefs that extend off the island, but fortunately without loss of life.

It might be imagined that on so prominent an island, on one so notorious for its wrecks, no time would be lost in erecting a lighthouse, in exhibiting a brilliant light, and in taking every step to obviate the recurrence of such frightful disasters, more especially now that our large West India Mail steamers are in the habit of touching there twice a month. Your readers will be surprised to learn, that not only nothing has been done, but, by the last *Barbadoes Mercury*, now lying before me, the Council have decided that nothing shall be done, and have rejected the bill twice brought in for this purpose by the Assembly, and so strongly urged upon them by their late Governor, Sir Charles Gray, on several occasions, but more especially in his recent parting address.

Such conduct is unaccountable; but the history of this affair is still more strange. It appears that some time back, the subject of the want of a light having been much discussed, and the successive naval Commanders-in-Chief on the West India station,—Admirals Sir Charles Adam (now Senior Naval Lord of the Admiralty), and Sir Francis Austen, having both strongly recommended it, the Home Government offered to bear half the expense of erecting a lighthouse, if the island would bear the other half and provide for the maintenance of the light. The House of Assembly at Barbadoes (the representatives of the people) met this proposition in a liberal spirit, the necessary sum was voted, it was cheerfully raised by a tonnage-duty on all vessels, and the money deposited in the bank. Yet, in spite of all this, and of the strong recommendations of the governor, the council of seven refused their consent to its erection, and one of the reasons they assign for withholding it, (as appears from the *Barbadoes Mercury*) is, “that no case of shipwreck need occur on this coast without great and reckless negligence.”

Any comment on such a state of things would be superfluous; but I would fain hope, from the favourable disposition of the Secretary of State, for the Colonies, as manifested in several recent colonial measures for improvement, that he will no longer trust so important an affair to the caprice of an individual, but send out instructions for the immediate erection of a lighthouse, in which all maritime nations, but especially Great Britain, are so deeply interested.

I remain, &c.,

To the Editor N.M.

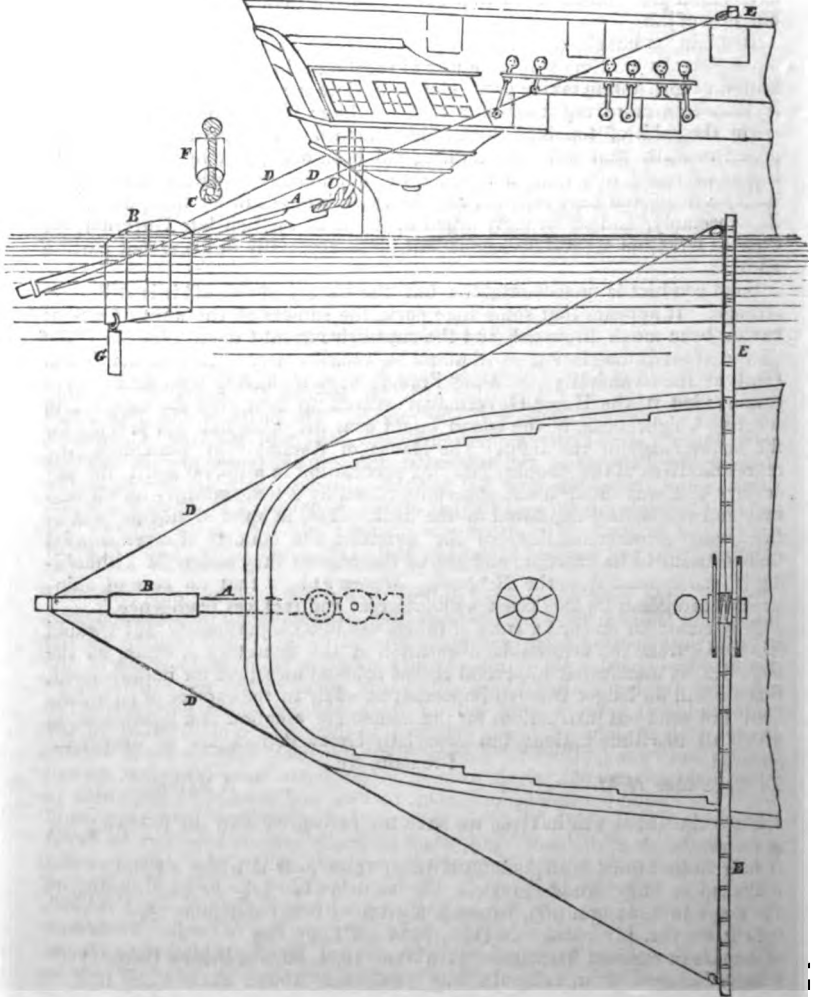
A SAILOR.

Since the above was in type, we have been favoured with the following list of wrecks:—

- Brig *Robert* from Liverpool, 29th June, 1830, near Kittridge's Point.
- Transport ship, *Wanderer*, Cork, 1st June, 1833; brig *Regina*, Liverpool, early in 1834 (got off), between Kittridge's Point and Long Bay.
- Brig *Regina*, Liverpool, 7th Dec., 1834, off Long Bay.
- Ship *John Stewart*, Demerara, 17th Jan., 1834, off Needham's Point.
- Ship *Paragon*, Demerara, 5th July, 1832, near Round Rock, Long Bay.

H.M. packet-ship *Cynthia*, Falmouth, 5th June, 1827; ship *Killingbeck*, Halifax, 29th June, 1827; ship *George*, Bristol, 15th May, 1828, schooner *Lady Warde*, Demerara, in 1830; brig *Seven Brothers*, St. Andrews, N. B., 10th Dec., 1834; brig *Hope*, Belfast, 28th Nov., 1832, Ship *Isabel*, Demerara, in 1833; two last got off with great damage. All within a cable's length of South Point

PLAN OF A TEMPORARY RUDDER.—Proposed by Mr. Oliver Lang, Senr., of Woolwich Dockyard.



A.—A spare top-gallant mast shortened, the heel rounded, and an eye made, with a thimble, and lashed through the fid-hole.

B.—Short pieces of plank nailed on the outer end, to form the blade or surface in the water.

C.—Another eye or thimble fitted in the former one, and lashed to a small piece of a hawser or rope brought up through the plug in the rudder hole, with an eye spliced on the end, through which a strong toggle is passed on the upper side of the plug to make it secure.

D.—A guy on each side fitted at the outer end, and brought on board by a topsail yard on the gunwale, with a block to lead it to the wheel for steering the vessel.

E.—A topsail yard lashed on the gunwale to take the rope to the wheel.

In case the rope should be too large to pass round the barrel of the wheel, a tackle may be applied to the ends of the rope for that purpose.

F.—Transverse view of plug.

G.—Pig of ballast to keep the blade in a vertical position. Provided there is not a plug to stop the hole of the rudder as shewn in the sketch, a thimble may be strapped with a longer rope, and the ends taken into the hole, make it fast, and plug up the hole with any thing after the rope is fastened on board.

OLIVER LANG.

THE BORNEO PIRATES.

By a letter from Capt. George Rodney Munday, commanding H.M.S. *Iris*, 26, it appears that in conjunction with Mr. Brooke, the boats of this ship have had some sharp affairs with the pirates. The boats of the *Iris*, under command of Lieut. Little, supported by the cutters of the Hon. Company's steamer, the *Phlegethon*, and 400 native allies, in thirty war prahus, carrying twenty guns, the whole force led by Capt. Munday, with Mr. Brooke in the gallant Captain's gig, crossed the bar of the Mambacoot River at 5 A.M., on the 18th of August. The attack was against Hadgi Samon, the Sultan's first chieftain, who had fortified himself in this Mambacoot River; Capt. Munday says:—

“Our force now commenced pulling up against a strong ebb, and, after three good hours at the oars, the first attempt to oppose our progress appeared in large rafts floating down, and soon afterwards the report of guns in the distance was heard. On pulling swiftly round a point to clear one of the rafts, the gig being then about fifty yards ahead of the main division, we came suddenly upon a long line of thick bamboo stakes fixed across the stream, with an immense boom attached to them, but which, owing to the freshes, had swung athwart. Facing these defences, only 80 yards distant, a fort had been erected, which, as soon as our boats came into view, opened fire. The action became general, shot, rockets, and musketry; but owing to the strength of the tide it was ten minutes before my first lieutenant could get over the short distance; and, when he finally captured the fort, he found it had been armed with small swivel guns only, which the defenders had managed to carry into the jungle. Having demolished the fort and destroyed the magazines, ammunition, &c., we pushed on without losing time; and observing, as we passed a narrow creek, a prahu endeavouring to escape, we dashed at her, and captured her, the crew, who escaped, leaving behind their spears, kris, and *sumpetans*, *i.e.*, quivers of poisoned arrows.

At 3 P.M., on coming to a turn of the river, a masked battery was opened on us. These guns were quickly silenced, and I was not long in jumping on *terra firma*, rifle in hand. The enemy were driven into the interior, carrying off their killed and wounded. A magnificent mansion close at hand was soon in flames; and, amongst the internal decorations consumed, were fifty human skulls and as many packages of human bones, many of them evidently the latest gifts of the Dyak gentlemen to their lady loves; for you must know that no aristocratic youth dare venture to pay his addresses to the fair one, unless he throws at the blushing maiden's feet a net full of skulls at the same time that he offers his hand and heart.

At 4 P.M., we bivouacked for the night, and early in the morning of the 17th, a deserter from Hadgi Samon swam across the river to our camp, and informed us that his chief had retreated in despair to the houses at the head of the river. At early dawn, therefore, we were on his track, and in half an hour a cheer from the headmost boats signalized that the last refuge of the enemy was in sight. A few strokes more and our guns and rockets were in play, and after a vain endeavour of the resolute chief by musketry and *sum-pets* to oppose our steady advance, he was compelled to abandon his fortress and retreat into the wilderness. Having burnt all the buildings of those inhabitants who had taken an active part against us, we returned down the river, and were on board the ship by sunset. Our loss was one seaman of the *Iris* killed and four wounded; two of the *Phlegethon's*, and eight native allies wounded.

The native chiefs met on board the *Phlegethon*, where we entertained them till a late hour, each of them swearing to protect the persons and property of all shipwrecked or distressed Europeans who might be driven upon their iron-bound coast; and I really hope we have made a commencement in the good work of rendering these seas secure for the peaceful trader. The wonderful effect of our Congreve rockets gave them an idea of our power, whilst our uniform kindness to all the unpiratical tribes, plainly bespoke our anxiety to be friendly with the good.

NAUTICAL NOTICES.

We have received the following Communications from the West Indies.

COPY.

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

St. Croix, 10th December, 1831.

SIR,—Some gentlemen of this island having last month gone down to Crab Island, sometimes called Bieque, which lies near Porto Rico, for the purpose of amusing themselves with shooting, &c., one of the party, on the 25th ultimo, at a place called Playa Grande, on the north side of the island, found washing in the surf on the beach, a bottle, which he opened, and found within a paper, which my brother (one of the party,) delivered to me on his return, on which is written as follows:—

“*March 2nd, 1831.*

“This bottle was thrown over from the brig *Superior*, Capt. Salmon, on her passage from London to Rio Janeiro, lat. $20\frac{1}{2}^{\circ}$ N., long. 25° W., all well.

“Signed { HENRY WARD,
RICHARD BATE, } *Passengers.*
JOHN INGLIS,

“*P. S.*—Should this be found, please to observe which way the current has run.

“Sailed from Gravesend, Saturday, February, 5th, 1831.”

To serve the useful purpose of such experiments, I take the liberty to request the favour of your giving it publicity. The place where it was found lies in about lat. $18^{\circ} 8' N$, and $63^{\circ} 25' W$. from Greenwich. This bottle must have passed over a line of reefs and breakers, and it is surprising how it escaped being broken. From the place where it was thrown overboard to where it has been picked up, the distance in a direct line is about 2,264 geographic miles.

I remain, &c.,

ANDW. LANG.

St. Croix, 15th February, 1847.

SIR,—If the above was made public, it has never come to my knowledge, I, therefore, send it to you as an addition to your bottle papers. It is the more interesting, from the supposition that it could only have reached the shores of Crab Island but a short time before it was picked up. Admitting even that it was the same day, its average set to the westward in 24 hours would be about $8\frac{1}{2}$ geographic miles for 268 days.

In the list of wrecks of British shipping, at page 615 of your *Nautical Magazine* for November last, there are two I can give you some farther account of as to position, viz. :—

1846.

Cromwell—as taken from the list.

Oct. 4, in lat $47^{\circ} N$, long. $28^{\circ} W$.

passed—Nov. 5, “ $44^{\circ} 3' N$, “ $16^{\circ} W$., by Capt. Conrad of the Danish brigantine *Kleine Marie*; found two or three vessels about her, one of them the *Prince-s Charlotte* of London; they were busy with their boats. Capt. Conrad arrived here on the 17th December.

New Brunswick of Hull—passed abandoned, as taken from the list.

Sept. 27, $47^{\circ} N$. $35^{\circ} W$.

passed Nov. 11, $44^{\circ} 50' N$. $20^{\circ} 16' W$., by Capt. Ulrichsen, of the Danish barque *Oracul*, arrived here 20th December.

Your *Magazine* is full of interesting information and useful instruction. I have it from the commencement up to November last; but I have had considerable delays and difficulty in obtaining it.

Distance at which I have seen the high mountains of Madeira.

1822, Thursday, noon, Dec. 26.

Underway from Funchal in the brig *Rosehill*, Capt. McColl, bound to St.

Christophers; standing to the southward with a gentle breeze from the westward and fine weather. Symp. 30 30 in.

21h. 55m.

Long. by my chronometer, $17^{\circ} 33' 45'' W$., lat used $31^{\circ} 57' 17'' N$.

Friday, noon, 27th—wind southerly; standing to the westward and southward

Lat. by observation, $31^{\circ} 52' N$. Long. $17^{\circ} 43' W$. Symp. 30.10 in.

Anchorage at Funchal, 32 37 30 “ 16 56

45' 30''

47'

Distance from our anchorage at Funchal, sixty miles bearing N. $41\frac{1}{2}^{\circ} E$.

Two hours before noon, the land of Madeira distinct and high.

At noon, Pico Ruivo, . . not so distinct, . . dist 66 miles.

At 1 P.M. do. . . still visible, . . “ 70 “ nearly.

At 2½ P.M. do. . . do. . . “ 75 “ fully, say geo. mls.

Soon afterwards, lost sight thereof through thickening atmosphere. Should be seen from the deck at least ninety miles in very clear weather.

At 6h., squally, wind southerly and variable; symp. 30.08 in.

At 22h 3m., long. by my chron. $18^{\circ} 52' 15''$ W., lat. used $30^{\circ} 50' N.$; light winds from S.E.

Saturday, noon, 28th.

Lat. by obs. $30^{\circ} 52'$, long. $18^{\circ} 55'$; symp. 30.10; fine weather, course since yesterday noon; S. $46^{\circ} W.$; distance, eighty-six miles.

Height of Waves on the same voyage.

1823, Wednesday, noon, Jan. 1—standing to the southward, getting cloudy; symp. 30.10 ins.

Lat. by obser. $27^{\circ} 59' 40'' N.$ Long. $20^{\circ} 21' 30'' W.$ Wind S.W.

Thurs. noon, Jan. 2.

Lat. by obser. $27^{\circ} 4' 5''$ “ $19^{\circ} 11' 30''$ “ S.W.
a strong breeze, but clear; symp. 30. ins.

Oh. 45m. Tacked to the westward.

6 0 Blowing hard from S.W., cloudy, under double reefed topsails.

12 0 Midnight, blowing very hard, a very heavy shower, wind shifting westerly, say W.N.W.; symp. 29.90 in.; wore to the southward.

19 0 Blowing fresh from N.W., cloudy, a monstrous swell from that quarter; symp. 30.02 in.

21 0 Looking better; symp. 30.10 in.

22 4 Long. per chron. $19^{\circ} 56' 15'' W.$ Lat. used, $26^{\circ} 59' 39'' N.$

Friday noon, Jan. 3—wind N.W.

Lat. per obser. $26^{\circ} 54' 20'' N.$ Long. $20^{\circ} 1' W.$, symp. 30.10 in.

4h. 0m. Light N.W. and N.N.W. wind; an enormous swell from N.W., rising higher than the main-yard, which I went up to, and above which my eye was not less than 5 feet higher, and from which the top of the nearest wave often intercepted the horizon, their perpendicular height at least 40 feet, and sometimes 45; but it was made more alarming from the agitated, bubbling, rippling, confused, threatening appearance of their crest, so much in contrast with the moderate wind at the time. There must have been a severe gale to the N.W. I see in a memorandum made opposite to this in my Journal, “See *Lloyds' Evening Post* of 3rd Feb. 1823,” for an account of a violent gale of wind from *south-west*, experienced at Madcira on 2nd January.

1823, Saturday noon, Jan. 4th—wind N.N.E., light, long swell from N.W.; symp 30.20 in.

Lat. per obser. $25^{\circ} 39' 10'' N.$ Long. $21^{\circ} 15' W.$

22h. 22m. Lat. used, $24^{\circ} 34' 44'' N.$ Long. per chr. $22^{\circ} 34' 15'' W.$

Sunday noon, Jan. 5th.

Lat. per obser. $24^{\circ} 27' N.$ Long. $22^{\circ} 42' W.$

Wind N.E., light, weather fine but cloudy; a long swell still from the N.W.

It appears to me, that I have read in some of your Numbers, that about these latitudes and longitudes very heavy swells have been experienced at various times by others. About the height of those I experienced, I am positive, and I assure you, their threatening appearance was any thing but agreeable. I have been in some heavy gales of wind, with waves thirty feet high, but I have never seen any thing like what we experienced on the afternoon of 3rd January, 1823. There is a very interesting account given by Capt Wilkes,

(who commanded the American Exploring Expedition to the Antarctic,) of experiments made by him to determine the height of waves whilst blowing heavily to the southward of Cape Horn. He made them 32 feet high. The account is given in the first volume of his really extremely interesting and well composed narrative—a work which proves him to be an officer of no ordinary talents. How is my noble countryman Capt. Sir James C. Ross, Kt I sent to New York for his voyage of discovery and research in the Southern and Antarctic Sea, with plates and maps, 2 vols. octavo, but it could not be obtained there.

I am glad to perceive you are strongly advocating attention to the theory of storms, as so luminously explained by Mr. Redfield and Col. Reid, and which I can confidently confirm from all my long experience here; and I quite agree with you that the captain of a ship, who does not thoroughly understand the nature of that theory, particularly if stationed or trading to tropical regions, has a most important qualification to acquire. Let him read your reply to "Convert" regarding the Maria Soames' hurricane in your October Number for last year.

I have accidentally discovered an error in the second edition of Lieut. Raper's navigation in the latitude of Funchal, Brit. Cons. House, $32^{\circ} 57' 7''$, should be, I presume, $32^{\circ} 37' 7''$. I had turned up the table to compare my anchorage at Funchal with the position there given, when I discovered the error.

In your Number for April, 1845, there is an interesting account of the West India earthquake of February, 1843, which induces me to send you a copy of what I wrote on the 23rd July, 1844, to Charles Deville, Esq., and which remarks were caused by perusing in April, 1844, "Observations sur le Tremblement de Terre éprouvé à la Guadeloupe le 8 Février, 1843. Par Ch. Deville, Ancien Elève de L'Ecole des Mines de Paris. Basse Terre, Imprimerie de Gouvernement, Juillet 1843. Dedicated to Monsieur Le Contre Amiral Gourbeyre, Gouverneur de la Guadeloupe et Dependences." The cool, deliberate examination, description and investigation, into the dreadful occurrence, are ably and scientifically narrated by this highly accomplished young gentleman, whose acquaintance I made in 1841.

Wednesday forenoon, 8th February, 1843, at Christiansted, in St. Croix, in lat. $17^{\circ} 45' N.$, long. from Greenwich, $64^{\circ} 42' W.$, mean time 4h. 18m. 48s. At 10h. 35m. A.M., mean time at Christiansted, or, according to apparent solar time, 10h. 20m., or a few seconds more, my recorded observation is as follows, *verbatim*:—"A severe shock of earthquake, which lasted near half a minute, preceded and accompanied with a strange whizzing, roaring, grinding sound. It made the frame of my house in town, where I was writing, crack, strain, and tremble, while my desk, at which I was writing, shook so much, that I could not write further; the floor of the room shook most sensibly."

On going home to my residence in the country, about a mile to the eastward of my house in town, I found my sidereal clock, in the small observatory, where my astronomical circle is fixed, had been stopped by the earthquake in perfect coincidence as to sidereal time with the mean time I had noted in town, and which mean time, I assert, is not beyond $15''$ in error.

	h. m. s.
The difference in longitude between Christiansted in St. Croix, and Point Petre in Guadeloupe, may be considered $3^{\circ} 8'$, or	
about that, which, in time, is	0 12 32
Mean time of earthquake observed at Christiansted in St. Croix,	10 35 0

The corresponding mean time at Point Petre, would then be 10 47 32

Supposing the three clocks, which stopped at English Harbour in Antigua, at 10h. 40m. pointed out mean time there, then, at that moment, the mean time at Point Petre would have been . . . 10 40 52

Mr. Blandin's regulator, which stopped at Bass Terre, in Guadeloupe, at 10h. 40m., could not, I think, be otherwise, than regulated to mean time there, and at that moment, the mean time at Point Petre would have been 10 40 48

And on this observation of Mr. Blandin's, I agree with Mr. Deville in attaching more confidence than in any others of those he has recorded.

That there appears something wrong about M. Choque's observation at Point Petre, is, I consider, evident.

The times stated at St. Thomas and Tortola are approximations, only both are stated at 10h. 30m. I would be induced to infer the middle of the shock at St. Thomas to have happened very nearly at 10h. 33½m. mean time there.

The *Roseau Journal* stating the shock to have taken place there at 10h. 53m., is another instance of the uncertainty attending common reports of such phenomena. Mr. Deville, who was in Dominique at the time, states his watch to have pointed out 10h. 40m.

	h. m. s.
Admitting the outburst of this earthquake to have taken its origin at Point Petre, it appears to have exhibited itself mean time there, at about	10 40 48

As correctly observed by me at Christiansted in St. Croix, at 10h. 35m., St. Croix mean time reduced to the mean time of Point Petre, would be	10 47 32
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Therefore, there was an interval between the shock at Point Petre and the shock felt at St. Croix, of 0 6 44

say 6' 44", the shock having taken that time to expand itself from Point Petre in Guadeloupe to Christiansted in St. Croix, a distance of about 200 geographic miles, or at a medium rate of near 30 miles a minute; but I do not at all consider that this expansion is propagated with uniformity of time; on the contrary, I consider, that, for many miles round the focus of the phenomenon, the shock may be simultaneous, interrupted or delayed in its further progress by various subterraneous obstructions. For instance, the shock at Point Petre, and English Harbour in Antigua, appears to have been nearly simultaneous.

If correct observations as to the exact time of the shock have been made at Barbadoes, Demerara, and Cayenne. they will possess great interest.

Your correspondent, in April number for 1845, who dates his letter, "*H.M.S. Dee*, English Harbour, Antigua, Feb. 18th, 1843," is evidently wrong as to the time of the earthquake, when he begins his description 23m. past 11h.

I remain, &c.,

To the Editor, *N.M.*

ANDW. LANG.

Trinity-House, London, 31st Murch, 1847.

SANDS OFF YARMOUTH AND LOWESTOFT.—It having been found necessary in consequence of the shifting of the sands, to alter the positions of the under-mentioned buoys in the vicinity of Lowestoft and Yarmouth Roads:—Notice is hereby given, that the same have been altered accordingly, and that the buoys adverted to now lie with the marks and compass bearings hereunder specified, viz. :—

The West Inner Shoal Buoy, (Lowestoft) has been moved to the eastward, and now lies at 14 feet low water spring tides, with

Lowestoft Church Spire, just open of the east end of the New Chapel,	N.N.W. $\frac{1}{2}$ W.
Pakefield Church, just open south of the town Stanford Light vessel,	S.W.b.W. $\frac{3}{4}$ W.
Stanford Light Vessel,	E.b.S.

The Cockle Spit Buoy has been moved to the westward, and now lies in 9 fathoms water, with

Winterton Lighthouse, one third the distance between Winterton Church and a white house on the cliff,	N.W. $\frac{1}{2}$ N.
The Turret of Yarmouth Chapel and the Factory Chimney in line,	S.W.b.S.
Cockle Light Vessel,	E.b.S. $\frac{3}{4}$ S.
North-east Buoy,	N.
South-west Buoy,	S.S.W. $\frac{1}{2}$ W.

The Scroby Elbow Buoy has been moved a cable's length to the westward, and now lies in 11 fathoms water, with

The Chimney of Lacon's Brewery, midway over the south wing of the Silk Factory,	W.b.N. $\frac{1}{2}$ N.
Caistor Church, over the north end of a white house with a slated roof,	N.b.W. $\frac{1}{2}$ W.
South-west Scroby Buoy,	S. $\frac{1}{2}$ W.
West Scroby Buoy,	N.N.E. $\frac{1}{2}$ E.

The West Scroby Buoy has been moved $1\frac{1}{2}$ cable's length eastward, and now lies in 10 fathoms water, with

The chancel end of Caistor Church, touching the west end of a red tiled boathouse on Caistor beach,	N.W. $\frac{1}{2}$ N.
Nelson's Monument, it's apparent length open eastward of Gorlestone Church,	S.W. $\frac{1}{2}$ W.
Elbow Buoy,	S.S.W. $\frac{1}{2}$ W.
Middle Buoy,	N.N.E. $\frac{1}{2}$ E.

By order,

J. HERBERT, Secretary.

Trinity-House, London, 17th March, 1847.

ST. MAWES CREEK, COAST OF CORNWALL.—This Corporation having deemed it advisable to mark the position of the "*Lugo Rock*," at the entrance of St Mawes Creek, notice is hereby given, that a *black buoy*, marked with the word "*Lugo*," has been placed 26 fathoms distant from the highest or westernmost part of the said rock, in 13 feet at low water spring tides, and with the following marks and compass bearings, viz. :—

Mawnan Church, its apparent breadth open to the northward of the Black Rock Beacon,	W.S.W.
St. Anthony's Lighthouse,	S.
Pendennis Castle,	W. $\frac{1}{2}$ N.
St. Mawes Castle,	N.N.E.

By order,

J. HERBERT, Secretary.

Bombay, Feb. 16th.—On the 1st instant, the light at the Bombay Light-house was exhibited on the revolving principle with three faces, each face presenting its greatest light every two minutes.—*Hull Advertiser.*

Trinity-House, 17th March, 1847.

SHIVERING SAND BUOY.—Notice is hereby given, that, in consequence of an alteration in the eastern part of the Shivering Sand, in the Nob Channel, the beacon buoy thereat has been moved about two cables' lengths to the N.W. of its former station, and now lies in $3\frac{1}{2}$ fathoms at low water spring tides, with the following marks and compass bearings, viz. :—

Ash Church, just open east of George's Farm,	S. $\frac{1}{4}$ E.
Girdler Buoy,	S.b.E. $\frac{3}{4}$ E.
Nob Buoy,	N.E.b.E.
Mouse Light-vessel	N.W. $\frac{1}{4}$ N.
East Ooze Buoy,	N.W.
Red Sand Buoy,	W. $\frac{1}{4}$ N.

By order,

J. HERBERT, *Secretary.*

NEW YORK, *March, 31.*—*Dangerous Shoal.*—Deep ships passing south of *Montauk Point*, by not coming nearer than $2\frac{1}{2}$ miles, when the light bears N.b.W., may avoid a shoal ridge, quite narrow, lying near S.E. and N.W. over a quarter of a mile in length, and not laid down on any chart, having less than 18 feet on it at most low tides; bearing S.b.E. two miles distant. Clear this shoal and you can stand boldly in for the shore. There is not a shoal at the N.E. of this light as published by some. Ships can pass within a cable's length of the surf, and have from 17 to 20 feet. The reef of rocks at the N.W. of this point is generally known by all that pass.

NEW GEORGIA.—*New dangers in the Solomon Archipelago.*

H.M.S. Vulture, Hong Bay, Dec. 28th, 1846.

DURING this year I have met with two vessels which have been engaged among the Pacific islands, east of New Guinea, the one trepang fishing, the other whaling. Both agree in the opinion that the present inaccurate state of the charts of that neighbourhood renders navigation dangerous. The master of the whaling barque Brougham informs me he cruized for several weeks in (according to the chart,) the centre of the large island of New Georgia, part of the Solomon Archipelago, where, in a N.W. and S.E. direction, is a clear channel about fifty miles wide, likewise two patches of reef which he met with, that previously had no position on his chart; the one a three fathom bank south of Cape Pitt,* and the other a dangerous reef north of Santa Cruz,† which was breaking heavily during a westerly gale in February. All authorities I have met with, agree in the opinion that the westerly winds, during that season south of the equator, extend to 160° or further east, frequently blowing in heavy gales; but, on the north shore of New Guinea, light and baffling winds prevail, yet this westerly wind was not experienced in the voyage of *H.M.S. Vestal* in 1844; probably the first week in December was too early in the season to expect it. The Brougham's master reports a tolerable anchorage on the west side of the Raven group, there being an opening in the reef between the north and west islands, such as I anticipated, though I could not discover it when passing.—*Extract of a letter from a Naval Officer.*

* About fifteen miles.

† About seventy-two miles north of the western extreme, and, in extent, about ten miles north and south, and about fifteen east and west.

*Fort William, Marine Superintendent's Office,
9th January, 1847.*

PORT OF AKYAB, COAST OF ARRACAN.—The trade of the Port of Akyab having rapidly increased, the attention of mariners is now recalled to the existence of the light on Faqeer's Point at its entrance, and to the following sailing directions for entering the harbour, by Capt. Paterson, published in 1844. In these the light above referred to, which was not at that time quite completed, was described as being erected on "Mosque Point," but this designation is now altered to "Faqeer's Point," which is understood to be that by which it is best known, and which is that applied to it by the Commissioner of the Province.

By order of the Officiating Superintendent of Marine,

JAMES SUTHERLAND, *Secretary.*

Sailing Directions for the Port of Akyab, in the Arracan River.—Ships sailing for Akyab during the south-west monsoon should steer for the south end of the western Bolongo, in lat. $19^{\circ} 50' N.$, long. $93^{\circ} 3' E.$, then standing along the coast to the northward and westward about five or six miles off shore until the light is sighted on the Great Savage at the entrance of the Arracan River, then steers so as to bring it to bear N b.E. or N.N.E., and if they intend to run in during the night, with either of these bearings they will cross the bar in the best water, in 3 fathoms low water spring tides.

After deepening across it, the course should be altered to N.b.W., or even N.N.W., according to the state of the tide and sea at the time, to avoid the western rocks (above water) bearing from the light S.W. $\frac{1}{2}$ S., distant nearly half a mile: the flood tide sets in on these rocks.

When the light bears E. in 6 to 9 fathoms on the edge of the flat to the westward, the course must be altered to N.N.E. and N.E.b.N., having brought the light to bear S.E.b S. $\frac{1}{2}$ S., the ship will be inside of Passage Rock, which is five to seven feet above water, and bears from the Savage Light N.W. $\frac{1}{2}$ N. distant a quarter of a mile, and should then steer N.E. easterly, to avoid the reef projecting from "Faqeer's Point," a mile in extent to the south; some of the rocks are above water at half ebb. There is a red buoy placed on the southern entrance in about 9 fathoms, which with attention may be seen in a clear night without the moon, and after bringing Faqeer's Point to bear N.W b.N. to N.W. the ship should anchor.

On Faqeer's Point a small lighthouse is nearly finished, the light of which will be a deep red, and will be seen about six miles, or three miles beyond the Bar, as a leading mark to clear the Western Rocks, keeping it a little open to the westward of the Savage Light when steering in or out, also to point out when the ship is inside of the reef off Faqeer's Point. With this light bearing N.W.b.N. to N.W. is good anchorage, having excellent holding-ground, and perfectly sheltered from the sea.

A stranger should not attempt to run in at night, particularly in the rains, except at high or low water, as the ebb tide runs very rapidly in strong eddies off the Passage Rock, over the dangerous flat to the westward, and the flood in strong eddies upon the rocks.

During the north-east monsoon, ships bound to Akyab from the northward should endeavour to make the Table Land of the Western Bolongo in lat. $20^{\circ} 1' N.$, then steering due east they will avoid the Oyster Reef in lat. $20^{\circ} 5' N.$, long. $92^{\circ} 40' E.$, which is distant from the Savage Light fifteen miles due west. This course is recommended, as, although in favourable weather the Savage Light is seen outside the reef in 16 to 17 fathoms water, the depth suddenly decreases, and the probability of hazy or rainy weather would prevent the light being seen, and steering boldly in to sight it to the northward

of lat. $20^{\circ} 1'$, would endanger the safety of the vessel, by suddenly falling upon the Oyster Rock or Reef before sighting the lighthouse.

I would not advise strangers, on any occasion, to make use of the channel inside of the Oyster Rock or Reef.

JAMES PATERSON.

Com. of H. C. Ship Amherst."

(True copy.)

JAMES SUTHERLAND, *Secretary.*

Published by order of the Court of Directors,

JAMES C. MELVILLE, *Secretary.*

East India House, London, 31st March, 1847.

GLANDORE, Feb. 24.—A bottle was picked up, about one mile to the westward of this harbour, containing a piece of paper, on which was the following:—The schooner *Jessy*, in lat. $50^{\circ} 37' N$, long. $20^{\circ} 30' W$. On Tuesday, Dec. 8, 1846, from Fogo, Newfoundland, bound to Poole; Capt. M. Cook, master, Matthew Cook, mate, George Blank, George Giles, Henry Chittle, George Everstone, crew; George Fisher, Mark Haywood, Jeremiah Brockway, Thomas Fardy, John Slude, C. H. Salmon, passengers.

The brig *Virginia* (believed) of New York, was lost by striking on a reef on the Mexican coast, Feb. 9, on her passage from Brazos to the island of Lobos. The cause of the accident was a strong westerly current which prevails there.—*Shipping Gazette.*

A nautical mile has, at the suggestion of Com. Sheringham, been ordered by the Admiralty to be measured in Stokes Bay, to be marked by sight posts, for steamers to test their rate of speed.

NEWLY DISCOVERED ISLANDS.—Mr. Sands, master of the whale-ship *Benj. Tucker*, at Honolulu (S.I.) reports the following:—On the passage from the Sandwich Islands to Cape Horn, on the 19th October, fine clear weather, not expecting to see land, a man from the masthead reported land in sight, which proved to be four small islands, lying in lat. $21^{\circ} 50' S$, long. $115^{\circ} 04' W$, bearing from Rimuera W.N.W. $\frac{1}{2} W$; about two degrees from which there is a small island marked on the chart about one degree W. The islands spoken of above contain a circumference of about ten miles, with very high breakers clear round them, the height of the land not being above 30 feet. The above not being laid down in any book or chart in Mr. Sands' possession, except the small island to the westward, he gives to the public as he found them.

(Communicated by the French Government.)

Hydrographic Office, Admiralty, April 15, 1847.

LIGHT ON CAPE FREHIL.—Notice is hereby given, that, from the 1st May next, the Revolving Light on Cape Frehil, in lat. $41^{\circ} 41' 5'' N$, long. $2^{\circ} 19' 2'' W$ of Greenwich, will be replaced by a new light, at the distance of 38 yards S. ($60^{\circ} E$. true,) from the Old Tower. The flashes of the new light will succeed each other at intervals of 30 seconds instead of $2\frac{1}{4}$ minutes, but in ordinary weather will not disappear totally within the distance of ten miles. The lantern is elevated 259 feet above the sea at high water, and will be seen in clear weather twenty-two miles.

LIGHT ON LE FOUR ROCK.—The proposed improvements in the Revolving Light on Le Four Rock, which stands in lat. $47^{\circ} 17' 53'' N$, long. $2^{\circ} 27' 56'' W$ of Greenwich, were completed on the 15th of last December. Its flashes now succeed each other at intervals of 30 seconds, instead of 1 mi-

nute ; but the light will not entirely disappear within the distance of seven or eight miles. The lantern is 70 feet above the sea at high water mark, and is visible in clear weather at the distance of eighteen miles.

HALIFAX LIGHTHOUSE ON BEAVER ISLAND.—A lighthouse has been recently erected, and is now in operation, on the south end of the Outer Beaver, or William's Island, to the eastward of Halifax, and is a revolving light, visible $1\frac{1}{2}$ minute, and dark $\frac{1}{4}$ minute. The lantern is placed on a square building, 70 feet above the level of the sea, and is painted white, with two black balls on the seaward side, to distinguish it in the day time.

The following bearings and distances have been taken by order of Adm. Sir F. W. Austen, the naval Commander-in-chief on this station:—lat. $44^{\circ} 47' 49''$ N., by meridian altitude of sun, long. chronometer $62^{\circ} 25' 18''$ W., or $1^{\circ} 12' 30''$ E. of the dockyard, Halifax ; variation 19° W. Bearings magnetic:—Sambro' Lighthouse, S., $84^{\circ} 70'$; W. 54 miles. Canso Lighthouse, N., $81^{\circ} 39'$ E., 70 miles. White Islands, S. point, N. 88° E., $9\frac{1}{2}$ miles. Westernmost (dry) Bird Ledge, S. 84° W., 5 miles. Harbour Rock, N., 9° W., 3 miles, Goose Island Point and Sutherland Island Point, in N., 18° W.

A reef extends from the east end of Beaver Island a considerable distance, so that on entering the bay you should give the lighthouse a berth of three-quarters of a mile. This harbour is a good one. Inside Beaver Island the anchorage is not very good, but further up the bay there is a good anchorage by giving the light a berth of half or three-quarters of a mile, and steering N.N.W.

S. CUNARD,
THOS. MAYNARD,
J. P. MILLER.

Commissioners of Lighthouses.

A fog-bell, worked by machinery, has been erected on the south-west lighthouse on St. Paul's Island, off Cape North.

WRECKS OF BRITISH SHIPPING.

(Continued from page 95—cs crew saved, cd crew drowned.)

Ship's Name.	Belong to.	Masters.	From.	To.	Where.	When.
Amicitia	86 Aberystwith	Waddell	Whitehaven	Cardiff	Arklow bank	Mar. 29 cs.
Buteshire			London	Havana	Bahama b. k	cs.
Canning		Hancock		by fire. St.	of Magellan.	cs.
Cleopatra		Early	Canton	Montreal	Brower's sh.	Jan. 21, cs.
Grana Ulie	90 Drogheda	Bowden	Liverpool	Liverpool	Drogheda,	Jan. 22, cs.
Halifax		Symes	Callao	Cork	Ardben B.	Mar. 20, cs.
Hebe	Dundee		Newcastle	Peterhead	Tees	abandoned
Héroline		Barrett	Monto Video	Rio Grande		Jan. 1, cs.
Maid of Mona		M'Lellard	Liverpool	Havana	O. Bahama C.	Feb. 20, cs.
New Pink	95		London	Valparaiso	foundered	Nov. 22, cs.
Ocean		Butchard	New Orleans	Liverpool	Colorados	cs.
Rochester		Trueman	Liverpool	New York	Blackwaterb.	Ap. 13, cs.
Rose	Exeter	Webber		run foul of	Shamrock R.	Feb. 28, 2d.
Sarah	Yarmouth		Newcastle	Lowestoft	Humber	cs.
Sarah Bentley			New York	Cork		Mar. 7, cs.
Belina	Glasgow		Kissock	Islay	Dunnet Hd.	1 saved
Terpsichore	100 Waterford		Newfoundl'd	Havana	Neuvas	Jan. 20
Tweed, W. I. Mail st.	Southampton.	Parsons	Havana	Vera Cruz	Alacranes r.	Feb. 12, 72d

We have, from time to time, noticed the wrecks of British shipping, but it has seldom fallen to our lot to record one of a more melancholy and distressing nature than that of the *Tweed*, late West India Mail steamer, on the Alacranes reef, by which seventy-two of our fellow-creatures met with a watery grave, and but for the timely and unwearied assistance of a brave Spaniard, perhaps not one of 154 souls might have been left to tell the tale. Our limited space will not admit of detail, but we would refer our readers to the *Times* of 9th April, in which will be seen a full account of the sufferings of the survivors before, by God's providence, they were rescued by the noble-minded and humane stranger from their perilous condition.

It will be truly gratifying to every one to know that Lord Auckland has received Her Majesty's commands to express to this generous stranger the high satisfaction of Her Majesty at his gallant conduct, and to propose for his acceptance a medal, on which shall be commemorated the noble action. It is likewise determined, that a grant of £500. should be proposed, to show in a manner most acceptable to that officer, the sense the British Government entertain of his service.

SURGEONS IN THE AMERICAN NAVY.—The following is a copy of a "General Order" regarding "relative rank" in the medical department, recently issued to the American navy by the late chief of its executive, Mr. Bancroft:—"Surgeons of the fleet, and surgeons of more than twelve years, will rank with commanders; surgeons of less than twelve years with lieutenants; passed assistant-surgeons next after lieutenants; assistant surgeons, not passed, next after masters. Commanding and executive officers, of whatever grade, when on duty, will take precedence of all medical officers. This order confers no authority to exercise military command, and no additional right to quarters.

VOLCANIC ERUPTION AT THE FRIENDLY ISLANDS.—Capt. Stratton, of the *Columbine*, arrived at Sydney, states that, on the 9th of October, in lat. 17° 22' S., long. 17° 4' 27", fell in with a great quantity of pumice-stone. On the 10th, made the island of Amara-gura, Friendly Islands, saw the volcano in full play, throwing up an abundance of smoke and stone. The fire was not perceptible during the day, but at night the effect was awfully grand. On the 11th, arrived at Vavou, and was told that a week before the eruption took place, several shocks of earthquakes were felt, and that the trees the morning after the eruption were covered with sulphur.

THE NEW TRANS-ATLANTIC STEAM-SHIPS.—The new steamers of the British and North America Royal Mail Company, intended for the increased service between America and England, are to be called the *Canada*, the *Europa*, the *Niagara*, and the *America*. These several vessels are being forwarded with every dispatch consistent with that security and perfection which so eminently distinguish the fleet of vessels belonging to the company. The size, power, and beauty of model of the new ships will at once class them as the finest vessels in the world. It is not yet definitely fixed when the additional voyage will be commenced.

REMARKABLE FEAT OF NAVIGATION.—The ship *Queen* on her homeward voyage last year, became completely water-logged, with ten feet of the rudder off, and her foremast sprung, was put into the harbour of St. Pierre, New-

foundland, on the 3rd Dec., where she remained till the following spring, when her commander, Capt. Leary (who had been obliged to go home a passenger in another vessel,) returning to take charge of her, and bringing with him officers and seamen, brought her out of harbour, and entered her safely into Liverpool in the short space of 22 days. The water within the Queen, at the time of her leaving St. Pierre, being as high as the level of the extreme ocean. We have frequently heard of vessels becoming water-logged at sea, and terminating a voyage successfully, but never of a vessel being brought water-logged from one port to another.—*Extract from the Freeman's Journal, Quebec, Friday, 13th November, 1846.*

ROYAL HUMANE SOCIETY.—The anniversary dinner of this society took place a short time since at the Freemasons' Tavern, where about 150 guests assembled. The Earl of Lincoln presided, and after the usual loyal toasts, proposed "Prosperity to the Society," which was very warmly responded to. After a variety of other toasts had been given, about thirty persons, of all ages, saved by the humane exertions of the Society, passed in procession round the hall. Their appearance excited the liveliest interest among the supporters of the charity. Next in the proceedings of the evening followed the presentation of medallions to those who by their heroic conduct during the past year had proved themselves worthy the honorary rewards of the Society. Lieutenant Fisher received a medallion for having, while senior mate on board H.M.S. *Crocodile*, most gallantly, and almost at the cost of his life, rescued from drowning one of the crew who had fallen into the river, at the Cove of Cork, in November, 1845. Commander Finch was rewarded by the Society for having plunged through the port of his cabin into the water, and thereby saved a seaman of the *Naiad*, 64 gun-frigate, at Portsmouth, in July last. Similar acknowledgments were made of the conduct of the coast guard, under Lieutenant Newman, R.N., in rescuing the crew from the wreck of the *New Flora* pilot-boat, of Dover, off Dungeness. The donations and subscriptions received at the dinner amounted to £810. With respect to the arrangements, an excellent military band was in attendance, and Mr. Hobbs and the Misses Williams favoured the company with some excellent songs.

GEODETICAL OPERATIONS.—*Extract.*

THE return of Mr. Piazzi Smyth to Europe enables the Council to furnish the meeting with a short account of Mr. Maclear's geodetical operations.

The anomalies known to exist in Lacaille's southern arc, and which Col. Everest, when he visited the scene of operation, suspected to have arisen from local attraction on the plumb-line, have been the means of leading Mr. Maclear into a very extensive measurement of the same kind, of which, in such a report as the present, we can only give a passing notice. When, in 1837, Lacaille's Observatory at his southern end was trigonometrically connected with the Royal Cape Observatory, there was found to be error in the latitude of the former, certainly of the kind which the local attractions would cause, but by no means sufficient in amount to explain all the difference between the theoretical and the measured degree. But even this partial explanation was destroyed by Mr. Maclear's subsequent measures with the zenith sector at both ends of Lacaille's arc, which produced results agreeing (as to the length in the heavens of that arc) almost exactly with

that of Lacaille. The discordance being thus thrown upon the trigonometrical part of the operation, Mr. Maclear (1840-41) carefully measured a base of 42,000 feet nearly on the site of Lacaille's, and then re-observed all his triangles, feeling confident that the former stations had been recovered in every instance to within a few feet. The length of the degree thus found halved the difference between Lacaille and the modern state of the theory, being about 200 feet less than that of the former, and about as much more than that of the latter. But, the old triangles being but ill chosen for causing errors of observation to produce their least effects, Mr. Maclear took another and a more advantageously related system, and found a result agreeing almost exactly with his former one. Still the effect of attraction at the southern end only remained imperfectly compensated, and that at the northern not at all. Mr. Maclear then resolved to extend the arc to the length of the usual European ones, to place the terminal stations in the best position which could be found, to swing the pendulum on every mountain, and to fix the positions of all such points as might be useful in future land or coast surveys. This work has occupied him during the course of the years from 1843 to the present time, and it is not yet completed. Either of four stations may be used independently at the extreme southern end of the arc—the Royal Observatory, Lacaille's Observatory in Cape Town, one on the mountain *Zwarte Kop*, twenty miles south of the observatory, and one on Cape Point, the extreme south-west of Africa. The most northern station is on the *Khamiesberg*, giving a total length of $4\frac{1}{2}^{\circ}$, with an intermediate astronomical station on the top of *Heer Logiments-berg*. From the extreme south to the middle station two sets of triangles are formed; from thence to the northern, one and a part of another. From the Royal Observatory extends an eastern chain of triangles, for the settlement of the position of Cape *l'Aguillhas* and the measurement of an arc of parallel. The sides of the triangles vary from fifty to ninety miles. The country to the north of *Khamiesberg* is now under examination, to try the feasibility of carrying the triangulation up to a station at which a perfectly unexceptionable latitude can be obtained. The physical difficulties of the northern part of the triangulation have been enormous. The houses at twenty miles distance from each other; the natives themselves imperfectly, and sometimes not at all, acquainted with the mountains through which the surveyors had to explore difficult passes in most inclement weather—the difficulty of finding water, and the scanty quantity of it when found—the irksomeness and danger of carrying the instruments up ascents which a free and active man can only surmount with difficulty—the endurance of all temperatures, from sand in the plains at 140° of Fahrenheit to ice and sleet on the heights, and the possibility of return being cut off by the gathering of snow in the ravines, present a picture far from inviting, and form a measure of the resolution of Mr. Maclear and his assistants, as well as of the strength of the principle which carried them into those wilds. The Society will join the Council in hoping that their success may be equal to their desert.

FURTHER PIRACY NEAR SMYRNA.—The *Times* of the 13th April, contains the following paragraph:—

“SMYRNA, *March* 19.—Two pirate vessels, one manned with a crew of 18, and the other with 15 men, have been seen off Cape Corba (near Alazzata), and a vessel under the Greek flag, from Alazzata, was plundered by them of 63,000 piastres on the 12th inst.”

Other accounts show that they have appeared in the various tracks of craft bound into Smyrna; the coast downwards, to Rhodes, ought certainly to be visited by our men-of-war more frequently.

EXAMINATIONS.—The Commodore Superintendent at Woolwich has issued the following notice:—"The examination of naval cadets, masters' assistants and other candidates for entry into Her Majesty's Service, will, in future, take place on Mondays and Fridays, and all candidates for such examination, as well as those who may wish to be examined as to their qualifications for higher rank in the service, are to present themselves for that purpose on board the *William and Mary* yacht at Woolwich dockyard, on the days above mentioned, between the hours of 10 and 12 o'clock in the forenoon, when the necessary orders for their examination will be issued on the receipt of the usual applications from the several candidates."

COMMANDER BARNETT'S OBSERVATIONS.—Variation of the needle at Bermuda, $7^{\circ} 01' W.$; dip at the needle, $65^{\circ} 26' 15'' N.$, as determined in October, 1845; lat. of lighthouse, $32^{\circ} 15' 04'' N.$; long. of lighthouse, $61^{\circ} 51' 36'' W.$; horizon intercepted between N. $43^{\circ} 24' E.$; by one hill, and between, N. $49^{\circ} 7' E.$; and N. $57^{\circ} 35' E.$, by another hill; these being the *true* bearings; and the variation of the compass being $7^{\circ} 00' W.$ Light may be seen from an elevation of ten feet—23.6 miles; ditto, twenty feet, 25 miles; ditto, forty feet, 27 miles; ditto, eighty feet, 29.8 miles; ditto, 100 feet, 30.9 miles. Supposing no refraction in the atmosphere at the time. Determined in August, 1846.

NANTUCKET, NEW SOUTH SHOALS.—The principal newly discovered shoal is situated about seven miles south of the old south shoal, and $19\frac{1}{2}$ miles S.S.E., by compass, from Sautkoty Head, on Nantucket. Their position has been accurately determined, and the soundings in the vicinity given, by the Hydrographic party under the command of Charles H. Davis, Lieut. U.S. Navy. No part of the island of Nantucket is visible from the shoals in the clearest weather.—*New York Paper.*

SHIPPING RETURNS.—Returns moved for by Mr. Wawn show, that on the 31st Dec. last, there were 11,017 sailing vessels (tonnage 2,121,385), and 360 steam vessels (tonnage 77,795), registered at the Ports of England, each vessel being of 50 tons and upwards. In Scotland the number of sailing vessels above 50 tons was 2,204, and the number of steamers 101. In Ireland the number of sailing vessels above 50 tons was 1,087, and the number of steamers 87. The number of sailing vessels that entered inwards and cleared outwards at the various ports of Great Britain, during the year 1846, amounted to 124,266 and 140,470; and the number of steam vessels that entered inwards and cleared outwards was 14,373 and 13,495. The number of British vessels that entered inwards and cleared outwards from and to the colonies, at the various ports of Great Britain, during the year 1845, amounted to 4,983 and 5,069 respectively. The number of steamers that simultaneously arrived and departed, was 344 and 356 (all British). The number of British sailing vessels that entered and cleared from and to foreign ports, amounted to 11,957 and 12,091, and the number of foreign vessels to 11,523 and 12,349. The number of British steamers that entered and cleared from and to foreign ports in 1846, amounted to 2,749 and 2,628, and the number of foreign to 616 and 621. The number of sailing vessels built and registered in 1846, in the ports of the United Kingdom, was 732, tonnage 109,394; and the number of steamers 77, tonnage 15,956. The number of vessels sold and transferred in 1846, was 2,499, viz. 2,389 sailing vessels, and 110 steamers. The number of sailing vessels wrecked in 1846, amounted to 537, and the tonnage thereof to 91,899.—*Hull Advertiser.*

CAPE GRACIAS A DIOS.—The following circumstance gave rise to the name of Cape Gracias à Dios :—Columbus having arrived at Point Casinas, in August, 1502, kept a westerly course, contending, with great difficulty, against the wind and a strong current, until he weathered a headland stretching far into the sea, and from which the land trends away to the southward; when he kept his intended course with ease. The sailors thanked God for having doubled the Cape, and it then received its appellation of Cape Gracias à Dios. The similitude of name between the two places, occasioned Herrera to confound the city of Gracias à Dios, with the village, that was built near Cape Gracias à Dios. In his "Descripcion de las Indias," fol. 27, he says that, "That the city Gracias à Dios was founded in the year 1530, by the Captain Gabriel Roxas, but it being abandoned, was re-peopled in 1536, by Gonzalo de Alvarado." This does not accord with what the same author says, in his Decada 6, fol. 13, just quoted; for, if Alvarado gave orders, in 1536, to choose a proper place for building the city, it manifestly could not have had its origin in 1530; and when he asserts that Roxas founded Gracias à Dios in 1530, he must be understood to speak of the village near Cape Gracias à Dios, which in his Decada, 4, fol. 41, he actually refers to that year, and it being founded by Roxas, and soon afterwards abandoned; and when he speaks, in his 6th Decada, before mentioned, of Juan Chaves founding Gracias à Dios in 1536, he evidently alludes to the city.—*Hist. of Guatemala*, by Juarros, p. 329. .

LAW.

THE GENERAL STEAM NAVIGATION COMPANY.—*Prosecution.*—William Watts, the master of the vessel called the *City of Rotterdam*, appeared at the Mansion House, before the Lord Mayor, upon an information against him for having neglected to take on board a certain number of apprentices. Mr. Swainson, from the office of the solicitors to the Admiralty, attended for the prosecution, and stated that the defendant was charged with having violated the 7th and 8th of Victoria, cap 112, sec. 37, which was entitled "An Act to amend and consolidate the Laws relating to Merchant Seamen, and for keeping a Register of Seamen." The vessel of which the defendant was master, belonged to a Company to which several other vessels belonged, some of which went on voyages without having any apprentices on board at all, to the great injury of the service, in which it was indispensably necessary to keep up a constant supply of able and efficient seamen. The prosecution was instituted at the instance of the office of the Registrar General of Seamen, and the penalty of each infringement was £10, which could at the discretion of the Magistrate be reduced to one-third of that amount. The object of the Lords of the Admiralty was to press the observance of so necessary an act for the support of the sea service.—The defendant having pleaded guilty, the Lord Mayor said it must be obvious to any experienced man that the infringement of so important an act was calculated to do serious mischief, by relaxing the vigour of a service to which England owed so much. As the Solicitor to the Admiralty has expressed a wish that the penalty should be reduced, the sentence upon Capt. Watts was, that he should pay the third of £10 and 5s. costs. His Lordship, at the same time, intimated that if any other cases were brought forward and proved, the full penalty should, in every instance, be inflicted.

NEW BOOKS.

OHOO; OR ADVENTURES IN THE SOUTH SEAS.—By *Herman Melville*.—Murray, London.

“ I may as well give some idea of the place in which the doctor and I lived together so sociably.

“ Most persons know that a ship's fore-castle embraces the forward part of the deck about the bowsprit: the same term, however, is generally bestowed upon the sailors' sleeping quarters, which occupy a space immediately beneath, and are partitioned off by a bulkhead.

“ Planted right in the bows, or, as sailors say, in the very *eyes* of the ship, this delightful apartment is of a triangular shape, and is generally fitted with two tiers of rude bunks. Those of the *Julia* were in a most deplorable condition, mere wrecks, some having been torn down altogether to patch up others; and on one side there were but two standing. But with most of the men it made little difference whether they had a bunk or not, since, having no bedding, they had nothing to put in it but themselves.

“ Upon the boards of my own crib I spread all the old canvass and old clothes I could pick up. For a pillow, I wrapped an old jacket round a log. This helped a little the wear and tear of one's bones when the ship rolled.

“ Rude hammocks made out of old sails were in many cases used as substitutes for the demolished bunks; but the space they swung in was so confined, that they were far from being agreeable.

“ The general aspect of the fore-castle was dungeon-like and dingy in the extreme. In the first place, it was not five feet from deck to deck, and even this space was encroached upon by two outlandish cross-timbers bracing the vessel, and by the sailors' chests, over which you must needs crawl in getting about. At meal-times, and especially when we indulged in after-dinner chat, we sat about the chests like a parcel of tailors.

“ In the middle of all, were two square wooden columns, denominated in marine architecture “ Bowsprit Bitts.” They were about a foot apart, and between them, by a rusty chain, swung the fore-castle lamp, burning day and night, and for ever casting two long black shadows. Lower down, between the bitts, was a locker, or sailors' pantry, kept in abominable disorder, and sometimes requiring a vigorous cleaning and fumigation.

“ All over, the ship was in a most dilapidated condition; but in the fore-castle it looked like the hollow of an old tree going to decay. In every direction the wood was damp and discoloured, and here and there soft and porous. Moreover, it was hacked and hewed without mercy, the cook frequently helping himself to splinters for kindling-wood from the bitts and beams. Over-head, every carline was sooty, and here and there deep holes were burned in them, a freak of some drunken sailors on a voyage long previous.

“ From above, you entered by a plank, with two cleets, slanting down from the scuttle, which was a mere hole in the deck. There being no slide to draw over in case of emergency, the taurpaulin temporarily placed there was little protection from the spray heaved over the bows; so that in any thing of a breeze the place was miserably wet. In a squall, the water fairly poured down in sheets like a cascade, swashing about, and afterwards spirting up between the chests like the jets of a fountain.

“ Such were our accommodations aboard of the *Julia*; but bad as they were, we had not the undisputed possession of them. Myriads of cockroaches, and regiments of rats, disputed the place with us. A greater calamity than this can scarcely befall a vessel in the South Seas.

“So warm is the climate that it is almost impossible to get rid of them. You may seal up every hatchway, and fumigate the hull till the smoke forces itself out at the seams, and enough will survive to re-people the ship in an incredibly short period. In some vessels, the crews of which, after a hard fight, have given themselves up, as it were, for lost, the vermin seem to take actual possession, the sailors being mere tenants by sufferance. With sperm whalemen, hanging about the line, as many of them do for a couple of years on a stretch, it is infinitely worse than with other vessels.

“As for the *Julia*, these creatures never had such free and easy times as they did in her crazy old hull; every chink and cranny swarmed with them; they did not live long among you, but you among them. So true was this, that the business of eating and drinking was better done in the dark than in the light of day.

“Concerning the cockroaches, there was an extraordinary phenomenon, for which none of us could ever account.

“Every night they had a jubilee. The first symptom was an unusual clustering and humming among the swarms lining the beams overhead, and the inside of the sleeping-placcs. This was succeeded by a prodigious coming and going on the part of those living out of sight. Presently they all come forth; the larger sort racing over the chests and planks; winged monsters darting to and fro in the air; and the small fry buzzing in heaps almost in a state of fusion.

“On the first alarm, all who were able darted on deck; while some of the sick who were too feeble, lay perfectly quiet—the distracted vermin running over them at pleasure. The performance lasted some ten minutes, during which no hive ever hummed louder. Often it was lamented by us that the time of the visitation could never be predicted; it was liable to come upon us at any hour of the night, and what a relief it was, when it happened to fall in the early part of the evening.

“Nor must I forget the rats: they did not forget me. ‘Tame as Trenck’s mouse, they stood in their holes peering at you like old grandfathers in a doorway. Often they darted in upon us at meal-times and nibbled our food. The first time they approached Wymontoo, he was actually frightened; but becoming accustomed to it, he soon got along with them much better than the rest. With curious dexterity he seized the animals by their legs, and flung them up the scuttle to find a watery grave.

“But I have a story of my own to tell about these rats. One day the cabin steward made me a present of some molasses, which I was so choice of, that I kept it hid away in a tin can in the farthest corner of my bunk. Faring as we did, this molasses dropped upon a biscuit was a positive luxury, which I shared with none but the doctor, and then only in private. And sweet as the treacle was, how could bread thus prepared and eaten in secret be otherwise than pleasant?

“One night our precious can run low, and in canting it over in the dark, something besides the molasses slipped out. How long it had been there, kind Providence never revealed; nor were we ever anxious to know; for we hushed up the bare thought as quickly as possible. The creature certainly died a luscious death, quite equal to Clarence’s in the butt of Malmsey.”

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

CAPTAIN—C. Wise, (1842.)

COMMANDERS—Arthur Parry Eardley Wilmot, (1842).

LIEUTENANT—Wray Richard Gladstones Palliser, (1845)

PAYMASTER AND PURSER—J. Winstanley, (1846).

APPOINTMENTS.

CAPTAINS.—S. C. Dacres (1840), to *Avenger*—C. Wise to *Inconstant*.

COMMANDERS—E. Codd, (1844,) to *Hibernia*—H. Douglass (1844) to the Coast Guard service.

RETIRED COMMANDER.—W. Ellis (1846), to be Government Emigration Agent at Waterford.

LIEUTENANTS—H. Baker (1846) to *Kestrel*—T. Cochrane (1844) to be flag-lieutenant to the Commander-in-Chief at Portsmouth—R. T. Bedford (1841) to study at the steam-factory at Woolwich—G. F. Day (1844) to *Excellent*—A. D. Jolly (1842) to *Vindictive*—L. G. Heath (1840) to be act.-com. of *Wolf*.

MASTERS.—J. Wells to *Growler*—J. Burdwood to the Hydrographical department at the Admiralty.

SECOND MASTERS.—J. Richards to *Kestrel*, and W. Imrie to *Growler*.

MIDSHIPMEN.—C. F. Robinson to *St. Vincent*—J. J. Barnard to *Queen*—C. F. Curane to *Excellent*—W. Graham to *St. Vincent*—Josling, act.-lieut. to *Iris*.

MASTERS' ASSISTANTS.—S. Winniett to *Kestrel*—C. B. Tuck and T. Pounds to *Growler*—J. W. Parrot to *Victory*—W. S. Harrison to *Crocodile*.

CHAPLAIN.—Rev. J. Bastard, from *Terrible*, (Addit.) to *William and Mary*, yacht at Woolwich, for dockyard duty, in the absence of the Rev. J. Conolly.

NAVAL INSTRUCTOR—C. J. E. R. Archdeacon to *Volage*.

SURGEONS.—B. Bynoe to *Crocodile*, J. Salmon to *Sidon*, J. H. Steele to *Avenger*.

ASSISTANT-SURGEONS.—H. H. Mackarsie to *Growler*—J. Nihill to *Superb*—J. B. H. Collins to *Trident*—C. Roberts to *Nautilus*.

PAYMASTERS AND PURSERS.—J. Winstanley (act.) to *Growler*—G. Nicholls, to be secretary to Sir Hugh Pigot, at Cork.

CLERKS.—J. A. Selfer, (in charge,) to *Terrible*—A. M. Moore to *St. Vincent*—A. Jefferys to *Vindictive*—B. P. Heather to *William and Mary*—H. Winstanley (assist.) to *Growler*—R. F. Morrison to *St. Vincent*.

FIRST ENGINEER—A. Leys, to *William and Mary*.

SECOND ENGINEER—W. Saunders, (act.) to *Ceylon*

THIRD ENGINEERS—C. Seely (act.) to *Ceylon*—J. Cooper to *William and Mary*.

COAST GUARD.

REMOVALS—Lieut. J. J. Keeling, RN. Inspecting Lieutenant, Castletown District, to Strangford District—Mr. T. Gowland, Chief Officer, Tresco station, to Prussia Cove station.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

Mar. 30, at Cawsand, the wife of Capt. B. B. Nott, RN., of a daughter.

April 2, at Southsea, the wife of Capt. E. G. Fanshawe, RN., of a son.

Marriages.

On the 23rd inst., at Alverstoke

Church, near Gosport, Lieut. George Barton Jeffreys, R.N., to Catherine Mary Ann, fourth daughter of the late Vice Admiral James Katon.

Deaths.

April 3, at St. John's Wood, R. Dickinson, sister of Capt. T. Dickinson, RN., aged 62.

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stubbington, near Fareham,
Hants.—March, 1847.

Day of Month	A. M.												P. M.											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	NE	25	26	23	21	23	22	22	22	27	27	27	22	22	20	22	25	5	5	10	
2	11	13	15	16	13	10	5	
3	11	13	15	16	13	5	5	
4	11	12	5	5	11	10	13	13	10	5	5	3	5	
5	NNE	
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inches the amount of rain during the *day*, and .266 during the *night*. Total wind 3949 miles, rain .928 inches. The greatest amount of rain was from N.N.E. The number of hours during which rain fell was 33; and the number of hours during which the amount of wind is recorded was 368; during 408 hours it was calm.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory, From the 21st of March, to the 20th of April, 1847.

Month Day.	Week Day.	Barometer In Inches and Decimals.		Fahrenheit Thermometer In the Shade.				Wind.				Weather.			
		9 A.M.	3 P.M.	9AM	3PM	Min	Max	Quarter.		Strength.		A.M.	P.M.		
								A.M.	P.M.	A.M.	P.M.				
21	Su.	In Dec	In Dec	48	56	43	57	SW	SW	4	2			bc	bc
22	M.	29-73	29-79	41	57	32	58	NE	NE	3	2			bc	bc
23	Tu.	29-82	29-76	43	52	38	53	SW	SW	4	5			bc	qtdc 3)
24	W.	59-72	29-82	44	50	37	51	SW	W	3	2			b	bc
25	Th.	29-81	29-81	37	54	30	56	NE	SE	1	1			bc	b2
26	F.	29-97	30-00	45	57	40	58	E	SW	2	2			bc	bc
27	S.	30-02	29-92	45	59	40	60	NE	SW	1	1			o	bc
28	Su.	29-56	29-42	48	51	41	52	E	NW	2	4			or 2)	or (3)(4)
29	M.	29-74	29-69	35	42	31	43	NW	NW	3	3			bm	bcp 4)
30	Tu.	29-69	29-64	35	42	30	43	NW	NW	3	3			bcm	bcm
31	W.	29-50	29-44	33	42	27	43	NE	NE	1	2			bc	bc
1	Th.	29-38	29-32	38	43	30	44	SE	SW	2	2			bcp2)	bcp2)
2	F.	29-40	29-20	33	41	28	42	NE	N	4	4			o	bcp3)
3	S.	29-33	29-33	36	40	31	41	N	NW	6	6			bc	qbcps 3)(4
4	Su.	29-65	29-70	41	45	32	46	NW	NW	3	2			bc	bc
5	M.	29-64	29-68	47	51	40	52	NW	NW	4	4			od 1)(2	bc
6	Tu.	29-76	29-82	45	50	40	51	NW	NW	5	4			qbc	or (4)
7	W.	29-82	29-82	49	43	45	54	NW	W	2	3			o	bem
8	Th.	29-62	29-54	53	56	44	57	SW	W	7	6			qor (2	qbc
9	F.	29-58	29-72	46	51	39	52	W	NW	7	5			qbc	qbc
10	S.	29-88	29-88	46	53	38	54	NW	SW	5	2			qbem	bc
11	Su.	29-91	29-84	49	50	39	51	SW	SW	1	1			or (2)	or (3)
12	M.	29-71	29-67	53	60	45	61	SW	W	2	1			bc	o
13	Tu.	29-86	29-86	42	46	41	47	NE	NE	4	4			or 1)(2	o
14	W.	29-94	29-90	44	46	34	47	NE	NE	5	5			qbc	qbc
15	Th.	29-88	29-88	40	46	34	47	NE	NE	6	6			qeps (2	qbcps (3)
16	F.	29-99	29-95	39	45	31	46	N	NE	5	3			qbc	bc
17	S.	29-79	29-77	36	48	26	48	E	SE	2	2			bef	bc
18	Su.	29-82	29-80	40	48	29	49	N	N	3	4			bc	o
19	M.	29-72	29-71	42	50	36	51	NW	W	2	2			bm	bem
20	Tu.	29-86	29-90	46	56	37	57	SW	W	1	1			bm	bc

MARCH, 1847.—Mean height of the Barometer = 29-973 inches; Mean temperature = 41-1 degrees; depth of rain fallen = 0-74 inches.

TO OUR CORRESPONDENTS.

We fully intended to have noticed the 6th number of Professor BERGHAUS' Atlas, and will take an early opportunity of doing so; it has been unavoidably omitted in our present number.

Hunt, Printer, 3, New Church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

JUNE, 1847.

REMARKS ON MAKING THE LAND ABOUT VALPARAISO.—By Mr. George Peacock, late Marine Superintendent of the Pacific Steam Navigation Company.

Starcross, February 10th, 1847.

ALL vessels bound to Valparaiso should endeavour to make the land about *Curaumilla Point*, which lies seven miles S.W. of Valparaiso lighthouse, and by no means approach the coast in the neighbourhood of the *Rapel* or *Topocalma Reefs*, which lie 15 leagues S. $\frac{3}{4}$ E. of *Curaumilla Point*, and 7 leagues N. $\frac{1}{2}$ E. of *Topocalma Point*, as the heavy south-west swell sets right down upon this highly dangerous part of the coast, as well as the prevailing current which sometimes runs upwards of a knot an hour round *Topocalma Point* towards the reefs, and in thick weather, on approaching the land at night, the greatest attention should be paid to the *deep-sea-lead*, which ought to be kept ready on deck for immediate use, as soundings may be obtained at from two to six, and even in some places, twelve miles off the land, which is not generally known.

I have had soundings in the parallel of the *Rapel* or *Topocalma* reefs in 94 fathoms, (coarse sand,) 14 miles west of *Bacelimo Head*, and six miles off *Curaumilla Point*, you will strike soundings in 100 fathoms, also off Valparaiso Point, where the bottom is muddy. I have on several occasions taken a steamer into Valparaiso and *Talcahuana*, in a thick fog, by close attention to the *deep-sea-lead*, and I believe many of the vessels which have been wrecked near Valparaiso, from time to time, might have been saved, had the officer in charge of the deck made use of this highly necessary precaution, for nearly in every case I have heard of, they had got too close in before they were aware of it, in light

winds at night, or in thick weather by day, and when the land was suddenly seen, or the breakers heard, it was too late; for the heavy south-west swell hurried them on to instant destruction.

A revolving light upon the hummock of *Curaumilla Point* would be very desirable, for the light on Valparaiso Point is a miserable affair, and strangers are apt to be led astray by fires on shore. The lighthouse would also be a conspicuous object in closing the land to make it out in thick hazy weather.

South of *Curaumilla Point* about 8 leagues, and from four to five miles off *White Rock Point*, a sunken rock is said to exist, but I think its existence is very doubtful; nevertheless, it would be advisable not to come in with the land to the southward of the parallel of $33^{\circ} 15' S.$ in the summer, nor $33^{\circ} 0' S.$ during the winter months. (*i e.*) in June, July, and August. I have known the current in these months set to the southward a mile an hour at intervals, and northerly gales are very prevalent during this season of the year.

GEO. PEACOCK.

ACCOUNT OF THE MEASUREMENT OF THE ARC OF LONGITUDE BETWEEN GREENWICH AND VALENTIA.*

THE Astronomer Royal had for many years intended to determine this arc of longitude, such measurements being highly important in the investigation of the figure of the earth; and the configuration of the British Islands rendering them peculiarly favourable for the purpose. The difference between the easternmost point of England and the westernmost point of Ireland is nearly $12^{\circ} 12'$ in long., and, which is very important, this greatest extent lies *nearly* in an arc of parallel. There is some room for choice as to the station on the west coast of Ireland, but, after a careful personal inspection, the Astronomer Royal selected a point in the Island of Valentia as the most appropriate. This point is a station in the trigonometrical survey, and, from the features of the country, apparently less liable to local disturbance than any other. It is in the vicinity of a harbour, which is now moderately frequented, and may become more so; and it is nearly in the parallel of Harwich, itself also a seaport of importance. Besides these advantages, as the Island of Valentia is the property and summer residence of the Right Hon. Maurice Fitzgerald, Knight of Kerry, that gentleman's countenance, assistance, and hospitality, were confidently reckoned upon, and, it need scarcely be added, as fully experienced. At present, that portion of the arc which

* A paper containing the detailed account of all the observations, computations, and results of this interesting work, was presented to the Society by the Astronomer Royal, and will be printed in the *Memoirs*, the Lords Commissioners of the Admiralty liberally defraying the expense. The satisfaction expressed by the members present with the lucid exposition of the Astronomer Royal, has induced the secretary to attempt to follow the lecture rather than to analyze the work itself according to the usual custom.

lies between Valentia and Greenwich has been measured ; the remainder of the operation is delayed until the completion of railroad communication between Harwich and Greenwich.

Having selected Valentia as the western extremity, the first consideration was whether the longitude should be determined directly or through an intermediate station. Finally, it was resolved that an intermediate station should be made at Kingstown, near Dublin, and for these reasons : that a smaller number of confidential persons would thus be required ; that the links being less numerous, less risk of irregularity would be run, and with less consequent derangement; that a new and important point, Kingstown harbour, would be fixed (which is, besides, a point of easy junction with the Dublin Observatory); and finally, that from the nature of chronometrical changes, the chance of error in twenty-four hours is less than half the error in forty-eight hours. It was fully intended, however, that the *same* observer should remain at Kingstown during both measurements, by which the uncertainty of an additional personal equation would be avoided.

Before this point was agreed upon, the line from Greenwich to Bristol by rail, to Cork by steamboat, and from Cork to Valentia by mail or car, had been considered and abandoned, as well as another scheme, that of sending the chronometers all the way from Bristol to Valentia by sea. It is proper to say that the Lords of the Admiralty offered to place a steam boat at the disposal of the Astronomer Royal for this purpose, but on computing the time and probable uncertainty of so long a voyage, and the great expense which it would cause, the liberal offer of their lordships was not accepted.

It need scarcely be mentioned here, that the operation of measuring an arc of longitude, *chronometrically*, consists in these steps: the time is accurately determined at one end of the arc, Greenwich for instance, and the chronometers are carefully compared with the transit-clock; hence the error of these chronometers *on the meridian of Greenwich* is known. These chronometers being carried to the other end, as Kingstown, are there compared with a clock which is carefully rated by a transit instrument; thus the error of the chronometers *on the meridian of Kingstown* is known: but their error on Greenwich at the same instant is known if the *rate* be known: the longitude is the difference of these errors.

It is well understood by persons acquainted with the principles of mechanics, that the great difficulty in carrying chronometers, without altering their going, lies *chiefly* in preventing a rotatory motion in the plane of the balance. It is believed that box chronometers are more susceptible of injury by carriage than pocket watches, and it is certain they take up more room. The Astronomer Royal, on the whole, decided on using pocket chronometers, and borrowed thirty from different quarters. These were carefully packed in two cases, divided each into fifteen compartments, with springs under each chronometer, pressing it upwards, firmly, but gently, against a padded lid. The sides and tops of each case were well wadded outside to protect them from any violence or jar. A number of boxes were then made, each of which would just hold the two cases placed one above the other; and to every railway-carriage,

steam boat, or mail-coach, which did or could run along the line during the experiment, one of these boxes was screwed down, and a key was given to each confidential person employed. The course was this: The first assistant of the Royal Observatory, Mr. Main, compared each watch by *coincidences* with the Greenwich transit-clock, the cases were then put into a box and transported in an easy carriage in the care of one of the assistants of the Royal Observatory, avoiding the pavement as much as possible, to the Euston Square station, when the cases were transferred by him to the box already attached to the imperial of the mail. On the arrival of the mail at Liverpool, Mr. Hartnup, director of the Liverpool Observatory, and formerly assistant-secretary of this Society, was in waiting with a box and carriage, with which he transferred the cases to a box already fixed on board the steamer, belonging to the City of Dublin Steam Packet Company. Mr. Sheepshanks, who had undertaken to make the transit observations and to compare the chronometers at Kingstown, was in readiness to take the chronometers when the steamer arrived, and it was his business to wind up the chronometers, compare them, and return them by steamer that evening. Mr. Hartnup, again conveyed the cases, with the same precaution as before, to the morning mail at Liverpool, and they were received at Euston Square and taken back to Greenwich by one of the assistants, where they were compared by Mr. Main. Thus, the chronometers which left Greenwich on the morning of the 1st, were brought back on the evening of the 3rd, and were again despatched on the morning of the 4th.

The Greenwich comparisons, of the morning of the 1st and the evening of the 3rd, give a rate for each chronometer during the interval, which is pretty nearly, though not exactly, halved by the comparison at Kingstown. Again, the errors at Kingstown on the 2nd and 5th days furnish a rate which will generally differ somewhat from the rate obtained by the Greenwich observations. It was also found, that, notwithstanding all the precautions used, there is a difference of rate in the same chronometer, according as it is travelling or at rest: the error on Greenwich time, at the time of the Kingstown comparison, was calculated with a reference to all these circumstances. The Astronomer Royal has investigated what he considers to be the *most probable* rate from the data afforded, for which discussion, the Memoir itself must be referred to.

It has already been mentioned, that Mr. Sheepshanks took charge of the Kingstown station. A small observatory had been erected here under the direction of Lieut. Leach, R.E., upon the plan of the Astronomer Royal; the Harbour Master, Lieut. Hutchinson, R.N., very kindly allowing a site in his garden and a passage through his grounds. The building was chiefly remarkable from having the slit *along* the ridge of the building, instead of *across* it; a construction already adopted by the Astronomer Royal for the temporary observatory, used by M. Sturve in determining the arc between Greenwich and Pulkowa, and which is found to be compact and convenient. A solid brick block was carried up from the rock about 30 inches above the floor, and covered by a thick slab of stone. The stone piers, truncated cones, so heavy as to be moved by

one man with difficulty, were cemented on the slab, and a very excellent $3\frac{1}{2}$ -foot transit, the property of Mr. Sheepshanks, placed upon them. A rail round the pier enabled the observer to support himself conveniently while observing any star up to 50° or 55° altitude; and by a contrivance which, though convenient, does not merit any particular description, the observer could command any star without employing a diagonal eye-piece. A pretty good transit-clock, also the property of Mr. Sheepshanks, was fixed in an angle of the building; and, on the whole, it may be said, the means of getting the time, were nearly, if not quite, as accurate as those of a first-rate observatory.

The first method of observing, as proposed by Mr. Sheepshanks,—and, indeed, necessarily practised for some time,—was to observe, in *one position of the instrument*, several stars, and at least one star near the pole, to apply the level at least four times, to *reverse the instrument*, to apply the level as before, and then to observe a circumpolar star, and as many equatorial stars as were considered necessary. The error of collimation to be used in the reductions, is that which gives the same clock error (allowing for rate) to each set. There are, however, considerable objections to this method, especially in uncertain weather; and at the request of the Astronomer Royal, there was erected a north collimating mark, which fortunately the situation allowed. A block of stone was cemented on the wall of the northern pier of Kingstown harbour, and on this block was again cemented a piece of black marble, with the edge bevelled upwards of an angle of 45° . A round disc of white marble, nicely let into the black marble, made a very good mark, and though the distance ($2\frac{3}{4}$ of a mile) was rather too close, yet a moderate limitation of the aperture of the telescope rendered the bisection pretty satisfactory. In practice, the adjusting screws were very seldom used, and the error of collimation being small, the observer either described or drew the appearance of the bisection in both positions of the instrument every evening before commencing his operations. The results are said, by the Astronomer Royal, to be highly satisfactory, and the resulting collimation errors more consistent than those obtained by the first method.*

As the uncertainties of climate are even greater in Ireland than in England, and the transit-clock, though a good one, not of the very highest class, and, moreover, liable to some suspicion from its imperfect fixing, Mr. Sheepshanks felt great apprehension that he should not be able to carry on the time from observation to the comparison of the chronometers. He took, therefore, with him to Kingstown, every supplementary time-keeper in his possession, each of which was compared

* In a *complete* set of observations, the difference of the two methods for getting the time is inconsiderable, as the *mean* of the times will come out nearly the same with very differently assumed collimation errors. But the advantage of a collimating mark is, that it gives a good collimation error at all times, and *therefore*, sufficient data for getting the time *without* reversal; and that if the meridian error of the mark be well known from the whole mass of observations, broken and indifferent sets will still yield a respectable clock error. It will be seen these remarks apply most forcibly to situations and purposes like those of the Kingstown and Valentia Observatories.

directly or indirectly with the transit-clock at every epoch of observation, and at every epoch of comparison with the chronometers. This precaution, though it greatly increased the trouble of observation and computation, has also added considerably to the accuracy of the result, for the weakest point is evidently the carrying on the time between the epochs of observing and comparing, which may be one or two days in unfavourable weather.

Although the time of comparison at Kingstown was generally near the middle time between the arrival and departure of the chronometers, it was found necessary, as has been stated above, to make a small correction for the inequality of time, and the difference of travelling and stationary rates. It would have been better that one set of comparisons should have been made on receiving the chronometers, and a second set just before returning them, and this course was recommended by the Astronomer Royal; but the fatigue of these comparisons was so great, owing to the number of watches, the badness of their markings, and the variety in their beats, and also the danger of hurry so great, that, on the whole, Mr. Sheepshanks contented himself with one series, each of three careful comparisons.*

Before the Greenwich-Kingstown series was completed, an attack of rheumatism in the knee compelled Mr. Sheepshanks to apply for a substitute. Mr. Hind, then of the Royal Observatory, and now director of Mr. Bishop's observatory, was sent to supply his place. This unforeseen accident deranged one of the original dispositions, viz:—that the Kingstown observer should be one and the same during the whole series. Some delay had taken place in communicating with Lieut. Gosset, R.E. (the officer who was selected by Col. Colby to take charge of the Valentia station), and this spare time was employed in running the chronometers between Kingstown and Liverpool. The weather, during the measurement of the Liverpool-Kingstown arc, was very unfavourable.

In the mean time Lieut. Gosset and Mr. Sheepshanks proceeded to the island of Valentia, to arrange proceedings and to set up the transit instrument. There is a mail every evening from Dublin to Limerick, continued to Tralee with a change of carriage. From thence to Cahirsiveen, the usual conveyance by car seemed too slow and uncertain, and arrangements were made by the Astronomer Royal with Mr. Bianconi, to furnish a special car and relays for this part of the journey. The ferry at Valentia was then to be crossed, and the chronometers carried by hand about four miles to the summit of a hill, a station in the trigonometrical survey, and the site of the observatory.

* Most of the watches beat five times in two seconds, which gives a coincidence at every thirty-six seconds, with a half second sidereal chronometer. In some of these, the second-hand corresponded with the even second, in others, with the odd second. A few watches beat eight times in three seconds. Some rude pen scratches were made to correct the error of the divisions of the seconds' circle. The sidereal chronometer was compared *directly* with the stationary solar chronometers, and through these *indirectly* with the transit-clock and another reserve-clock, before and after the comparisons. It is conceived, that the errors of comparison could scarcely amount to a thirtieth of a second in each travelling chronometer.

THE BEAGLE'S VOYAGE.*

Her Majesty's sloop Beagle, Hobart Town.

THE portions of Bass Straits surveyed by her Majesty's sloop *Beagle*, and the Tasmanian, government cutter, *Vansittart*, during the year 1842.

From sixteen miles eastward of Corner Islet to Western Port, on its northern shore, and from Cape Portland to Circular Head, on the south, with the islands occupying the greater part of the eastern entrance between Wilson Promontory, and Cape Portland, besides a portion of the N.E. and S.W. coasts of Tasmania. The former was, in some places, nine miles in error in latitude; the S.W. extreme of the latter, called the S.W. Cape, was found to be in latitude $43^{\circ} 35' S$. Former navigators placed it $43^{\circ} 33'$ and $43^{\circ} 39'$.

Corner Islet was found navigable for vessels drawing 14 feet, and the eastern side of Wilson Promontory to abound with good anchorages in westerly winds. This projection, with its neighbouring isles, were also found in error in latitude, but the most important part of the survey has been that of making known to the world the numerous anchorages among the Islets, fronting the western shore of Flinders Island, and that the eastern entrance of the strait between Craggy and Flinders Islands is free from danger, and not, as it had hitherto been represented, strewed with sunken rocks. In short, the only dangers in that part of the strait are Endeavour Reef, and Beagle Rock; but the ground between them and Craggy Island being very foul, they are considered in the chart as one shoal. Wright Rock, a pyramidal lump of granite, marks its northern entrance, and Craggy Island the southern. The knowledge of a clear passage between Craggy and Flinders Island, and of the anchorages on the western side of the latter is of great importance to the commercial interests of the two colonies. Many vessels have been driven past Port Dalrymple in westerly gales, and wrecked on the western shore of Flinders Island, in consequence of not knowing where to run for an anchorage. Of the latter, the best will be found on the east side of Hummock Island in four and five fathoms. It trends S.W. five and a-half miles, with an average breadth of three-quarters. Its northern extreme bears S. $17^{\circ} E$.

Eight miles from the N.W. extreme of Flinders Island is Hummock Island, named by the illustrious Flinders from its having three remarkable hummocks on the extremes and centre. When first seen it has the appearance of three separate islands. Vessels may reach the anchorage by either passing round the northern or southern end; the latter is most convenient, as the anchorage is close to it. The tides are strong, among the islands fronting Flinders. The flood stream passes along the northern part of the western shore of Flinders from the northward, and along the southern from the southward. Vessels approaching Hummock Island from the northward should keep a good look out for a rocky patch about a mile off the N.W. point of Flinders, on the south shore of the strait

* Noticed also in Vol. for 1846, page 332.

from Cape Portland to Circular Head, a distance of 130 miles: there are only three anchorages—Waterhouse Island, Port Dalrymple, and Emu Bay; the latter and former are safe only in westerly winds. A good look out should be kept, in passing inside Niuth Island, as the shore fronting it has several outlying rocks off it.

The navigation of Port Dalrymple has been made easy, by erecting beacons, and giving directions how to avoid the numerous dangers in its entrance.

J. L. STOKES.

SPAIN AND HER DREAM.—EVENTS AS THEY WERE AND ARE.

THIS nation, which, at one period of her history, claimed half the world as belonging to her, and had not only a voice in the Councils of Europe, for regulating the balance of power, but could assume a commanding attitude with her fleets. What is she now? Apparently in a state of disuetude, if not in the stage of decrepitude.

“Tis Spain, but living Spain no more!”

She counts not one solitary line-of-battle-ship; a few frigates and steamers only. The abrogation of the Salic law has placed a *doncellata* upon the throne of Fernando y Isabel. The country is overrun with contrabandistes and ladrons, and the people are ruled by a military chief, whose code is as sanguinary as that of an eastern despot.

The vicissitudes which are often attendant on individual life, do not embrace greater degrees of variation, verging on extremes, than are to be found in the history of nations; not only do we find that from great power, states have been reduced to insignificance, but that the very language of the people has been altered, whilst, in others, the inhabitants have been changed.

In one point of view, the Spaniards, from their wide-spread conquests over the savage nations of the New World, were, like their former masters, the Romans; and like, that extraordinary people, were obliged, by the force of adverse circumstances, to yield up their colonies; but the causes were very different. It is marvellous to think how time brings about these changes; for, one would have imagined, from the former stability and influence of such empires, that their fall would be almost impossible. Not to speak of the “Invincible Armada” in Elizabeth’s day, only reflect on the commotion created in England so late as during the reign of George the First, when the Spaniard was preparing an expedition to invade this country, and contrast that with his present condition. The Spanish minister, at that time, Cardinal Alberoni, was a man of acknowledged talent, imbued with all the bearing of Castilian pride; but although he certainly created a great sensation in this country, the “Fates,” as in the former greater instance, were against him; for which the English had to thank a furious Azorean hurricane,

for the fleet on its route was completely disabled, whilst the grand flota was beaten off Sicily; and, indeed, the tables turned against the Dons by Lord Cobham's invasion of Spain at Vigo.

From this retrospect we come at once to the present. As if awakened from a long sleep, the Spaniard rises, rallies his slumbering senses, and recounts a dream. He cannot forget the "New World," where, if there be in morals, as in physical nature, an effect to a cause, he laid the foundation of all the misery he is now enduring. Before, however, we proceed, we must take a hasty view of the past.

Heaven cannot be outraged with impunity: the gold and the silver mines of Mexico and Peru forged a chain around the necks of the children of their soils; mercy was a feeling unknown to the conquerors and oppressors of the Incas and Caciques, but time brings its retribution, and well have the crimes against the red men been avenged, in the downfall of that haughty and cruel nation, that in the plenitude of its might trod them into the dust.

The world has been long familiar with the details of barbarism committed upon the unfortunate natives of the islands and of the continent. But time cannot obliterate the impression. The recitals were given by a Spaniard, Las Casas, who stood prominently forth, like an angel of light, midst a multitude of the fiends of darkness—but of what avail—where are the native islanders now? The experiment on Salzedo to test his supposed immortality served them not; the fact opened their eyes, but it did not rid them of the incubus that was pressing them to death. We will here only quote a short passage—too long, indeed, for the patience of the merciful of heart; but it is a part of the history of the people who are now casting a longing look back to the very scenes of their atrocities unabashed.

The good man, named above, says:—They (the Spaniards,) laid wagers which could with one thrust of a sword rip open an Indian's bowels, or cut off his head with the greatest dexterity. They made long gibbets of such a height that the feet of those that were hanging just touched the ground; upon these they hung thirteen *in honour and worship* of our *Saviour* and his twelve apostles, as they said; and making a great fire under, burnt them alive; they made grates of peaches laid on pitchforks, and with a little fire underneath, they, by little and little, *roasted them alive!* Las Casas says, he saw at one time four or five of the principal chiefs *broiled* upon those gridirons. If individuals stand in awe of the judgment of heaven, shall states be free? But the soul sickens—let us pass on to another era.

The war springing from the French Revolution which desolated Europe, and which involved Spain in the general turmoil, opened the way of emancipation to her colonies, which she had unwisely shut out from the intercourse of the rest of the world. This exclusive policy had not only the effect of estranging the feelings of regard for the mother country in the descendants of the Iberian races, but the neglect and tyranny with which they were treated, roused them to a due sense of the just claims they were entitled to in the lands of their birth, as freemen, and of which

they had hitherto been deprived, whilst the old Spaniards filled all the places of trust and emolument.

It is a surprising fact, that governments seem blind and deaf to the experience of ages. They look upon colonies that have outgrown the subserviency of a helpless state, as still in their minority, never for a moment reflecting that the growth of numbers places them in a position to resent, when an opportunity shall arise, the display of coercive tyranny of the governing over the governed. A parent does not use the same mode of restraint upon a son of thirty years of age that he had followed when that child was but seven or eight years old only. In the history of the world, it will be found that colonies have been lost from the want of a conciliatory tone, and the exercise of strict impartial justice, to insure that proper affection, naturally strong and lasting, which can only be broken by an undue exercise of power, or from neglect.

General Miranda, (whom we met on his mission,) a native of Terra Firma, who had served as a military officer in the armies of Europe, was the first patriot of any note that rose the standard of revolt; but he was unsuccessful, and, subsequently, like the renowned black General Toussaint, perished by treachery. However, the flame was kindled, and it gradually spread, until finally, all the continental colonies became independent of Spain.

It is a remarkable circumstance in the history of this people, so different from that attending the descendants of the English on the same continent, that, although more than a quarter of a century has elapsed since they became their own masters, there has been nothing but a succession of revolutions, attended with all the horrors of a desolating warfare, as if the genius of the people was unsuited to liberty.

The habit engendered by mixing in the wild turmoils of the bloody and uncompromising struggle for freedom, had given to many of the leaders a stamp of savage ferocity quite incompatible with the necessary qualities for just and peaceable government; and all the evil passions of man's nature seem to have been roused among the partisans of the jealous and rival chieftains, panting after power, thus losing sight of the country's good in individual ambition and personal rancour.

It has been an observation, that men, who were born in a state of slavery, and reared in bondage, are unfit, when suddenly released, for the enjoyment of liberty; such a change should be gradual in order that its value may not be abused. Left to themselves, this doctrine would seem to be true, as may be instanced in the Island of Hayti; but, where personal freedom is granted solely, without the responsible obligations of self-government, as in our West India Islands among the emancipated blacks, it would seem not to apply, although for some years there were doubts about the result, and even still, some fears hang in the horizon of the white man's mental vision.

But the Creole Spaniards, though amenable to stringent rule, and contemned, were by no means subject to the laws which govern a positive state of slavery, yet they have acted in a manner far worse among themselves than the negroes of St. Domingo, with a party spirit of the utmost ferocity, and altogether with so little sober wisdom in their

councils as to pronounce to all the world that they are incapable of governing themselves.

This probably has given rise to the proposal which has been lately published in Spain, (the dream alluded to,) one portion of which runs thus :—" We have pointed out the unspeakable advantages which our flag would acquire by visiting Hispaniola—shew itself in the colonies, (mark that word,) immediately giving rise to a traffic from the mouth of the Mississippi to those of the Orinoco—letting itself be seen in the capital of the Brazilian empire—penetrating into the Rio La Plata, where, alone there is one of our brigantines—continuing the voyage towards the Pacific—entering into negotiations with Chili, which has nothing to fear, but many benefits to hope for from Spain—embracing the descendants of the Spaniards who rule in Columbia; in fine, making a voyage, which, though somewhat expensive, would be the means of affording to our commerce, to navigation, to trade, and to the Spanish government, glory and benefits of incalculable extent." Such is the dream of that people, who, having gained half a world by the enterprise of a foreign seaman, possessed it through a flood of blood, held it by tyranny and exclusiveness. Lost it by their own blind, wilful, and haughty conduct!

What prospect of success could a begging crusade, like that proposed, expect from the descendants of the Spaniards—the people who once domineered over them, and now seek to implore the charity of intercourse? The recollection not only of their wrongs, but of the uselessly stubborn refusal of acknowledgment of their independence for years, has not assuredly yet passed off. These descendants are Spaniards in their nature still, and forgetfulness of injuries is not one of the cardinal virtues of that nation, especially where there is a taint of Moorish blood; nothing but distrust would meet it, suspicion of sinister design would be uppermost in their thoughts. The opportunity has been lost.

When Mr. Canning acknowledged the independence of *ci-devant* Spanish-America, was the favourable moment, but Castilian pride would not succumb to the inevitable decrees of mutation, but turned away sullenly, leaving others to reap those fruits of industry which activity bears, and now, when the gathering is hopeless, after a good sulk, that pride, humbled, is willing to share!

Does Spain expect from the present dilemma of Mexico that by opening her arms to her former children, they will hail her as a deliverer? It is probable that not even the despair which appears to have seized the occupiers of the city of Montezuma would induce them, in their extremity, to yield to such a fate. The Mexican political pulse, it is true, is down to a very feeble beat, but the very thought of what it has been would give it energy again. They are in a deplorable state; there is neither courage nor moral vigour in them; they are sinking under the weight of their own unmanly fears: here is the voice of their President, sounded in this year of grace, 1845—and that President a General!—he rings the knell of the republic—has anticipated an event which the "go-a-head" unionists have proclaimed their avowed intention of realizing in due time, in the way, and in the manner that Texas has been rifled!—" The army cannot move; territory usurped, *will*

remain usurped, and the hopes of recovering it being once lost, its usurpation will be successfully and gradually continued until it embraces the whole republic, and (I shudder to confess it) Mexico, with so many elements of abundance and greatness, will disappear from the number of independent nations." Verily, this is one way of encouraging energy to resist the reverses of fortune, or valour and patriotism for the defence of a country against lawless invaders. The standard of Spain will never again float over the battlements of San Juan de Ulloa—she must not flatter herself with such a dream; and as little may she expect such a phenomenon in "*Hispaniola*."—The present possessors of the eastern half of Hayti, are not of the race of the unsuspecting beings whom Columbus met there: they are not to be duped by fair protestations. The Spaniards, in their dream, may desire re-occupation, encouraged by the anarchy at present existing between the *ci-devant* Spanish and French negroes; but they may rest assured that any offer under the plea of assisting to drive the latter from the eastern part of the island—but with the real intentions of getting a footing—would be spurned. And, considering the vicinity of Porto Rico and Cuba, such would be rather a dangerous attempt; indeed, though openly avowed, an experiment of that sort, it is probable, would not be permitted.

Let her not show her flag in the bay of Honduras; the log-wood cutter's wrongs have been handed down from father to son. She may pass on to the Brazils, but it is questionable if even there she would meet with common civility. The hidden Paragua would be in a flame at the very thought of an old Spaniard within its incognito, for the spirit of Francia has scarcely yet been laid. The Banda Oriental is at present, and will be—*por tiempo*—on crutches, with two "doctors" to physic her into health. The Argentine Confederation is not approachable, even to a neutral; but the sight of a Spaniard would rouse the very heart's blood of the demon who is not yet satiated with gore. He must content himself with a glance *en passant* of the silver stream. Chili would be chilled indeed at the sight of an ambassador from the child of Ferdinando Septimo. Peru has her hands full, restless and sanguinary as the condor of the Cordilleras, she loves not peace-seeking crusaders; where else can the humbled Spaniard look?

A better prospect, perhaps, would be the colonization of Patagonia, if who ever claims it would part with its fee simple,—(given originally by the Pope!) for, as to actual possession, we believe the Monte Videans have only a few huts at the mouth of one or two rivers; although it would be almost a pity to see this modern Bashan wrested from its giants. There are two other Thulæ yet unoccupied by Europeans—Staten Land, and the Tierra del Fuego. The dons are familiar with marsh and mountain, and the climate of these austral fragments is not very severe, though moist; cultivation may improve it; the woods cleared away and the land drained, the soil would become less boggy. But who is the civilized claimant we do not know. Perhaps the new states would not dispute the old Spaniard's "right" as obtained "long time ago" from his Holiness. The poor devils of Fuegians would, no doubt, jabber

dissent, but such a protest, orally given, would avail them nought, and they have not yet ambassadors at the courts of the north to proclaim a grievance; however, certes their condition could not be rendered much worse than it is at present, unless *mines* were discovered. To point to the Ultima Thule of all—South Shetland—braced in ice and wreathed with snow, would be but frigid advice, though perhaps there would not be found a disputant of the Don's "right" from early discovery, (though a *Mijn-Heer* preceded them) as one of Pizarro's liners, as a token of possession, left her ribs and trucks upon one of the islands. 'Tis a sad spectacle, but replete with very grave reflections, to behold the turn which the vicissitudes of time has wrought upon, unquestionably, the proudest nation of the creation, from the all-confident voice of power, dictating its commands with imperious hauteur, its tone has lowered to the conscious inability to utter aught that may offend the world!

"Such be the sons of Spain, and strange her fate!"

If in the annals of history, sacred and profane, we trace the mysterious decrees of Providence on the broad scale, and perceive that the revolutions of time involve the mutation of empires, equally with those changes in moral and physical nature, which are observed and felt, then we may at least conjecture that Spain has long since passed her meridian; the summer of her prosperity seems to have waned, and the autumn of her age—to her of decrepitude—to have, *al cabo*, fallen upon her. It is evident that her energies are cramped, and the sources of that vigour which in her prime flowed in full and sparkling streams, are nearly dried up—her "day" has departed, and at present we behold in her but the wrecks of her former greatness, or, say more appropriately, her splendour.

It would, perhaps, be a presumptuous effort to speculate on the future—to deduce from her present condition what her ulterior fate may be; but it is hardly presumable to fancy that, in the vicissitudes which in turn may overwhelm other states still in their vigour at this moment, Spain would ever again by her wisdom, her merit, or from the resuscitation of that spirit of enterprise which she once displayed in advance of the rest of the powers that have since shot past her, regain the station she has lost among the nations of Europe.

She may sigh, like Alexander, for other worlds to conquer, but even had she the means, the example, she set has left none.

In truth, with the future we can hold but a vague and indistinct communion—all is shrouded in the obscure gloom which time only day by day can unfold; but man, confident in his own powers, will venture to predict his capacity, the inspiration of that breath which put life into his nostrils, would, rebel as he is, know no limit! But, happily, his prophecies are not divine; based upon mere finite reasoning drawn from the facts which the experience of the past furnishes, and the reality of the present; and, consequently, all human inferences of probabilities with respect to the career of nations, are just as liable to be false as correct. Such strange transitions do, indeed, occur that even the most seemingly extravagant prediction would do no outrage to the majesty of reason.

Where the Pharaoh's and the Ptolomies governed, a Pacha rules, the turbaned son of a nation in the days of Thebes, or even of the city of the Pharos, unknown! Where is the renowned republic—its polytheism?

“Ancient of days! august Athena! where
Where are thy men of might? thy grand in soul?
Gone—glimmering through the dream of things that were!”

What remains of the Acropolis now? A few tottering columns frowning upon the palace of an alien king! Where are her philosophic sons?

This cradle of the arts, degenerating into a nest of pirates, became the province of a people that had no existence when Sparta and Macedon flourished! And, again, that power usurping the capital of Constantine is now hastening to its doom. Jerusalem, the Holy City, itself, the birth-place of Christianity—the site of man's redemption—even she succumbed to the standard of the false prophet, (as she had done to the Roman eagle,) whose crescent stood unfurled during the war of the Cross, and still spreads its folds far and wide! Here is a mystery for the predictors—to what end? Who among them will be bold enough to answer?

“All that we know is, nothing can be known.”

The territory of the Moguls, the Rajahs, the Nabobs owns for ruler a united company of merchants of that nation, now mixed, which the Roman eagle subdued when in a state of barbarism! But, enough. Spain *may* sink, *may* be blotted out of the roll of nations; but, will she ever rise again?

ATMOSPHERIC RAILWAYS AND STEAM NAVIGATION.—*Extract from a Report of Sir John Rennie.*

(Continued from page 244.)

In 1793, Ramsay made some experiments for propelling a vessel by forcing water out of the stern by a steam engine: this does not appear to have answered.

In 1795, Earl Stanhope, well known for his mechanical genius, tried an experiment for propelling a vessel, by means of a propeller in the form of a duck's foot; and about the same time Smith fitted a boat with an atmospheric engine on the Sankey Canal; none of these experiments, amidst several others which were tried, appear to have been successful; the great difficulty seems to have been in producing the rotatory motion by the steam engine employed for the purpose, and it is singular that none of them tried Watt's engine, which had then become generally known, and Boulton and Watts themselves were too busy in making their engines for the numerous mills and waterworks then becoming daily more general, to turn their attention to fresh speculations, the issue of which was at that time doubtful, and which did not promise to be so lucrative.

In 1801, Lord Dundas, who took great interest in mechanical pur-

suits, employed Symington to construct a steam boat; this was propelled by an engine on Watt's plan, having one cylinder placed horizontally, and the piston, with a stroke of 4 feet in length, was joined at the extremity, and attached to a connecting rod, with a crank at one end, turning a paddle wheel, placed in a well-hole at the stern of the vessel, which had two rudders, one on each side of the cavity in which the paddle-wheel was placed. This was the first practical working steam vessel, with an engine on Watt's principle, and was called the "*Charlotte Dundas*;" it was employed for towing vessels on the Forth and Clyde Canal, and answered its purpose completely, but the proprietors of the canal objected to its being continued, in consequence of the agitation of the water produced by the paddle-wheels, which they alleged would injure the banks of the canal.

In 1802, Fulton, who had been some time in England, hearing of Symington's attempts, went to Scotland, visited him on board his boat, and requested to see it tried. Symington accordingly got up the steam, made several trips up and down the canal, and fully explained to Fulton every part of the boat, steam engine, and apparatus. Fulton made notes of everything, observing at the same time, that the objection of injuring the banks of the canals and small rivers might apply in England, but that in America, where they were upon a much larger scale, this inconvenience could not be felt, and he thought the application of steam boats in that country would be of immense public and private advantage, and stated his intention of introducing them there. After this visit to Symington, Fulton proceeded to France, where he constructed his first steam boat, and tried it on the Seine, at Paris, in 1803, and proceeded to America, soon afterwards. It is rather singular that Napoleon, who was then First Consul, and who usually was alive to all great improvements, and carried them through with a degree of energy and talent which overcame all opposition, should not have appreciated the merits of the steam boat, and should have allowed such a fine opportunity of benefitting France to have slipped through his hands; but perhaps the same may be said of England, as being still more extraordinary, for the advantages of the steam engine and machinery had then become universally acknowledged. Fulton, however, impressed with the importance of the invention, and being thoroughly convinced of its ultimate success, pursued it with unremitting perseverance and energy, and in 1805 he applied to Messrs. Boulton and Watt to make a steam engine for a boat which he was about to construct in America: this boat was accordingly built in 1807. Watt's steam engine reached America in 1806. The vessel was named "*The Clermont*," from his friend Livingstone's residence; the wheels and machinery were on Symington's plan, propelled by Watt's engine; the boat was tried on the Hudson river, and only attained a speed of five miles per hour. This was the first steam boat used in America, and Fulton and Livingstone then took out patents for introducing steam boats in various places in America, and built several others upon a larger scale, for carrying goods and passengers, employing Messrs. Boulton and Watt to make the steam engines, which were sent from England, each succeeding engine being larger than its predecessor.

Although it was generally known that the steam boats had succeeded perfectly in America, and that their employment was daily increasing, yet little or no attention was paid to the subject in England. The idea of employing steam boats on the ocean had never been conceived, and the objections raised to the agitation of the water by the paddle-wheels on the Forth and Clyde Canal were considered so strong, that doubts were generally entertained as to the success of the system anywhere but in large rivers, such as those of America. In 1812, however, Henry Bell, of Glasgow, who was well acquainted with, and had deeply considered all that had been done by Symington, determined to try once more whether the invention could not be employed on the Clyde; he accordingly caused a small boat of twenty-five tons burthen to be built at Port Glasgow, by John Wood, who has since become so well known as a ship-builder; it was forty feet long, with 10 feet beam, and in it was placed a steam engine of 4 horse-power, on what was termed the bell crank principle, introduced by Watt; the boiler was placed on one side of the vessel and the engine on the other, with four paddle-wheels worked by the intervention of spur gear; the wheels consisted of detached arms, with paddles or floats at the end, which, however did not answer, and the complete wheel, according to Symington's plan, was subsequently adopted. This steam boat, which was called the *Comet*, began to ply for goods and passengers on the Clyde, between Glasgow and Helensburgh (Bell's native place,) in January, 1812, and attained the speed of five miles an hour. The *Comet* succeeded so well, that Bell determined to build another vessel of larger dimensions and power. Numerous other parties, seeing the success which had attended Bell's exertions, determined to follow his example, and several other boats were built during the succeeding years of 1813 and 1814; they were, however, still very imperfect, until Cook, of Glasgow, in 1814, constructed the fourth vessel, the *Glasgow*, with an engine of 16 horse-power. The machinery of this vessel was so much more perfect and powerful than any which had been previously constructed, that it served as a model for many others; and from this period steam boats for river navigation were completely established.

Many of the engines employed for the above mentioned vessels were upon the bell-crank principle; which, from their simplicity and portability, standing upon an independent frame, with the condenser forming part of it, were well adapted for steam boats, and were consequently generally used. The bell-crank levers, receiving the motion direct from the piston, communicated it by means of a connecting rod and crank to the main shaft, turning the paddle-wheels on each side of the vessel; the engine was placed on one side of the vessel and the boiler on the other. The boilers generally used were upon the principle proposed by Allen in 1730, and by Smeaton in 1765, having an internal furnace and flue, surrounded by the water. This form of boiler was first brought into use by Trevithick in 1803, for high-pressure engines, and for low-pressure engines, also, in one of the earliest steam-dredging boats employed at Portsmouth dockyard, under Bentham; but the exterior shell of this boiler was of wood, as proposed by Brindley in 1758; in steam vessels

the external shell of the boiler was made of wrought iron. All the steam vessels above mentioned were worked by one engine only. In 1814, Boulton and Watt first applied two engines, connected together, for working a small boat on the Clyde.

In 1815, a small vessel, with a side-lever engine of 14 horse-power, by Cook of Glasgow, made a voyage from Glasgow to Dublin, and round the Land's End to London; it then ran between London and Margate with passengers with considerable success, and this led to others being established in various places; the Scotch boat serving as a model.

In 1816, Maudslay made a pair of combined engines, each 14 horse-power, applying the power to the paddle-wheel shaft by the crank, instead of by cog-wheels, according to the previous mode.

In the same year, the late Mr. Baird constructed a steam boat at St. Petersburg, with a boiler set in brickwork; this boat worked for some time on the Neva.

In 1817, Boulton and Watt purchased a steam boat called the *Caledonia*, which had been built in the Clyde, with very defective engines. James Watt, jun., having constructed a new pair of combined engines on the side-lever principle, of 14 horse-power each, made a great number of experiments with the *Caledonia*, and went with it to the Scheldt and other places; the arrangement of the engines, as improved by Watt, served as a model for several other vessels.

In 1818, David Napier caused the *Rob Roy*, of 90 tons burthen, to be built by Denny at Dumbarton, with an engine of 30 horse-power, with which he successfully established a regular communication between Greenock and Belfast: this may be said to be the first time that a regular communication by steam boats, between two distant sea ports, was established, and it set the example to every other place. Boulton and Watt, after the success of the *Caledonia*, made a great number of marine engines of increased power, and with various new improvements, such as introducing wrought iron instead of cast iron for several of the moving parts; and in 1821, a great step was made, by establishing boats between London and Leith. Two of these vessels, the *James Watt* and the *Soho*, with engines of 120 horse-power, by Boulton and Watt, were the largest which had been made, and answered very well.

In 1819, the *Rob Roy* left the Belfast station, and was transferred to the English Channel, to run between Dover and Calais. About this time Napier built the *Talbot* of 150 tons, with two engines of 30 horse-power each, which ran regularly between Dublin and Holyhead. In this year also, the late Mr. Rennie, who had for some time previous watched the progress of this great invention with considerable interest, foreseeing that it would ultimately supersede all others, proposed to the Admiralty to use steam vessels for towing vessels of war into and out of harbour against wind and tide; being perfectly satisfied that if once it was introduced into the navy, it could not be long before steam vessels of war would follow; great doubts, however, as to its success were entertained and expressed by many of the official subordinates. Lord Melville and Sir George Cockburn, however, overruled all objections, and, as a first experiment, they consented to allow the *Hastings*, a 74 line-of-battle

ship, to be towed from Woolwich by the *Eclipse*, a Margate steam boat of 60 horse-power. The *Eclipse*, however, proved too weak, and after towing the *Hastings* a few miles, it returned, and the *Hastings* went to Chatham with her sails alone; the experiment was thus not quite so successful as could have been desired; nevertheless Rennie still determined to persevere. Oliver Lang, the master-shipwright of Woolwich Dockyard, entered fully into Rennie's views, and warmly assisted by every means in his power the introduction of steam vessels into the navy, contrary to the opinions of many of his superiors. At length the Admiralty, at their recommendation, ordered the *Comet* to be built according to the draft and plan, and under the superintendence of Mr. Lang; she was 115 feet long and 21 feet wide, drawing 9 feet of water, and a pair of engines of 40 horse-power each, were ordered for her from Messrs. Boulton and Watt: this was the first steam vessel in the navy, and it is still in use. By degrees several others were built.

In 1820, a steam tug was built by Manby, for Messrs. Smith, for the purpose of towing their barges on the Humber; and in the same year, Maudslay and Field applied the expansive action of steam in the cylinder, which was a great improvement; also escape valves for the water, which might boil over into the cylinders. In that year also, steam packets were introduced on the post-office station between Holyhead and Howth; and the *Britannia*, with oscillating engines, and several other steam packets were built by Manby for the Dover and Calais station.

In 1825, the General Steam Navigation Company was established by William Jolliffe, who built two of the largest vessels which had yet been tried, called the *George the Fourth* and the *Duke of York*; they were between 500 and 600 tons burthen, and had engines of 130 horse-power, furnished by Messrs. Jessop of the Butterley Iron Works: these two vessels were intended to establish a regular communication between London and Cadiz, and London and St. Petersburg; they accordingly started in September, 1827, and answered extremely well, notwithstanding the heavy storms which they encountered in the Bay of Biscay and in the Baltic. The General Steam Navigation Company, considering the ideas of Jolliffe too extended, parted with the two vessels (which were afterwards purchased by the government,) and limited their views to the British Channel and the German Ocean. About this period, the *Enterprize*, of 500 tons burthen, which was built by Gordon, and had a pair of combined engines of 120 horse-power, constructed by Maudslay and Field, made the voyage from London to Calcutta, by the Cape of Good Hope. The advantage and superiority of steam vessels, in every respect, for both river and sea navigation, having been now thoroughly established, their employment became universal; and the size, power, and number of the vessels increased daily in every part of the empire.

THE CINQUE PORTS AND THEIR LOCALITIES.

(Continued from page 238.)

SOME of the early writers in describing our coast mention two distinct islands near or forming the mouth of the Portus Rutupium, and Cæsar himself describes the place of his anchorage as embayed, and distinctly states that his galleys rowed into an estuary, where they made good their landing, and afterwards entrenched themselves by constructing the Urbs Rutupia, or Richborough. Now, had the Goodwin Sands been under water, and the sea laving along the shore of Richborough, it must have been an open road without any shelter, and if he rowed into an estuary, he must have gone some miles beyond that point; but historians, whose writings mention the existence of Tanatos, or Low Island, could not allude to Thanet, which is surrounded by chalky cliffs of considerable altitude. The Low Island must have been the estate, afterwards Earl Godwin's domains, and now the Goodwin Sands; and that many other islands of this kind existed in the Northern Ocean, we have the testimony of most respectable writers. Marcus Flaminus, when portraying disasters which befel the fleet of Germanicus, after leaving the river Amicia, on the Bræmin Coast, thus expresses himself:—"A wide and unknown sea was before us; around were hostile shores or *uninhabited islands, &c., &c.*" There are no islands but the solitary rock of Heligoland, at present in the North Sea upon that coast; but the Belgic traditions speak of a cluster of islands which were inhabited, and that a terrible inundation of the sea destroyed them, together with several others upon the coast of Britain, and that some thousands of the miserable natives were succoured by Edward the Confessor, and colonized in Britain. As to the sea receding from our coast because it encroached upon theirs, it is a ridiculous and confined idea. What are all the waters of the German Ocean in comparison with their parent source, the Great Atlantic? They are but as a drop in a bucket; and the mysterious equipoise of the first swelling tide would restore the level of the fluids. If the islands of Great Britain were merged in the deep, it is not likely that the multitudinous ocean would be affected by such a change, or that the waters would rise upon the coast of Norway. A temporary undulation might follow such an occurrence, but, like the rings which succeed the falling of a pebble upon a pond, they would spread upon the bosom of the Atlantic, and sink to rest amid its vast expanse of waters.

Earl Godwin, it appears, was a sea-king, and a desperate warrior; and the number of depredations laid to his charge has led some to suppose that there were two or more earls of that name in successive generations. The palace of the king of Kent was burnt down by Earl Godwin in his attack upon the town of Milton, in the reign of Edward the Confessor; and we also find an Earl Godwin, with his son, attacking Hythe, in the reign of Henry II., and carrying away and destroying all the vessels lying in the roads. This could not be the same personage who so treacherously occasioned the murder of Alfred, brother of Edward the Confessor, and of whose tragical end, while feasting at that monarch's table,

history has given so interesting an account. We find that the first earl mentioned retired into Denmark, to mature his plans, when in difficulties; hence it may be presumed the herald is correct in denying his ignoble extraction; and that the Earl Godwins were a race of piratical and powerful chieftains, to appease and conciliate whom, the Saxon kings granted lands, and bestowed appointments of trust and confidence. They had always great power and influence at sea. The tower in Dover Castle, built by one of them who was guardian of the ports, still retains his name; but that he, or any of his family, should have a sand in perpetuity, is not probable. No honour or emolument could have been derived from such a circumstance.

History being so vague and unsatisfactory on this subject, no reliance can be placed upon it, some ascribing the changes which took place upon our coast to Edward's reign, a few years previous to the Norman conquest, and others declaring that it was during the life of William Rufus, the second king of the Norman line:—both accounts may be partially correct; the island might have been rendered untenable in the first instance, and totally destroyed in the second.

An old, and very curious tradition, has been handed down through successive generations, and is often repeated as a tale to puzzle, and fill the minds of children and peasants with conjectures, namely:—That the erection of Tenterden Church was the cause of the destruction of the Goodwin Sands. The story is related in a variety of ways, but; treating it as a fable, the following is the favourite and most amusing legend:—“Earl Godwin, in one of his predatory excursions, had penetrated into the Weald of Kent, which was at that time a thinly inhabited and woody country; here he was placed in great jeopardy by a superior force; and, lying in concealment, made a vow, that should he return in safety, he would erect a steeple at Tenterden, to the honour of the holy saints:—that he, being a vacillating believer, neglected to fulfil his vow, and that the vengeance of heaven was inflicted upon him for his sins, in the destruction of his sea-girt domains.” Such was the monkish legend to impose upon the credulous and superstitious. Another version was of a very opposite tendency; that, “anxious to fulfil his sacred pledge, he neglected the dams and sea-walls of his island, which thus, in an overwhelming tempest, fell an easy prey to the destroying elements.” Treating them both as matters of conjecture, still they prove that our ancestors believed that such an island had been in existence.

Such is the traditional legend of Earl Godwin; but of what date asks the historian? That we cannot determine: the Danish as well as British and Belgic history makes the earl a companion of Canute, leading the Anglo-Saxons to the protection of Denmark when invaded by the Swedes; and the circumstances already mentioned of his prowess as far down as the reign of Henry II. cover a lapse of nearly two centuries; here, then, we leave it to the researches of our Antiquarian friends; in their comparisons of historical records with tradition, and of the probable causes which have produced natural effects, which are still open to investigation, they will have a fund of amusement.

Leaving the Goodwin Sands we find an effectual barrier to the sea, as

respects any common cause, in the chalky cliffs between Broadstairs and Margate. Mer-gate was certainly very properly named, for, by an inspection of the chart, it will be found to be completely open to the German Ocean for an extent of many hundred miles, and our Norman conquerors doubtless called it the Sea gate from that circumstance. It has suffered very much from tempestuous weather, agreeably to its history, the dates of which, in the Cinque Port records, show it to have been a considerable place for many centuries. The promontory called the Nose (or Naze)—a familiar term with the northern nations for a headland, as, for instance, the Naze of Norway and others—is by us called the Long Nose, or North Foreland, and we consider it the point forming the entrance to our noble rivers, the Thames and Medway; and, shaping a westerly course from this along the land, we again arrive off the Reculvers, in a most intricate and interesting navigation. We will now examine a little more closely the changes which have taken place here upon the site of the ancient Regulbium of the Romans. This, then, was the northern entrance of the channel which, according to the best-accredited historians—Bede, Solinas, and others, was three miles wide, and is stated by Antoninus, Tacitus, and Ammianus Marcellinus, to have been defended by a castle similar in its construction to Richborough. I have already described the nature and appearance of the embankment thrown into the mouth of the Wantsumn or Richborough channel, and made mention of the Reculver Rock, or Regulbium of the Romans, where tradition states the Saxon kings occasionally dwelt, and that the Romans, before them, had a mint and armoury: part of this rock has been seen at very low tides during the last century, and has been described as a platorium of solid masonry: stormy weather washes up Roman coin, and broken pottery, fragments of warlike accoutrements, &c.

This favours the opinion of some awful catastrophe, as no people would allow their riches and utensils to be buried in the waters, who had time and opportunity to withdraw them. The sea then has converted this renowned fortress into a sunken rock, advanced upon the shore and taken away dwelling-houses, exposed the half-claimed graves of our ancestors, whose remains protrude from the bank and church-yard of Reculvers, and would have taken the sister spires themselves, but for the care of the elder brethren of the Trinity-House; and yet, while our historians in one page admit all this, in the next they tell us of a recession of the waters at the same place. They have rejected the traditions of our ancestors, *to reconcile easy and received opinions*, and neglected to examine into natural effects, which, as certainly as that water will find its level, confront them in proof of the testimony of our forefathers, and their decided, though romantic, oral traditions.

Could they invent these? Why then are the villages thus named, which are now two miles from the sea?—holding up to perpetual remembrance, water-wades, wickes or arms, and roadsteads, bridges, and causeways. Let us now go afloat, and examine those parts which have become sands and shoals in like manner with the Goodwin. Some historians tell us that the Sisters, or Reculvers, were originally three miles from the sea, and all admit that they must have been a considerable distance.

That which was once land, in advance of them, is certainly very singularly named; it appears curious that the sands should be called The Horse, The Last, The Woolpack, The Hook, The Land, The Whitstable Street, &c. What does tradition say of these? The Horse was the horse market; the Woolpack was the ground upon which that article was deposited, in exchange for the produce brought by the Norskmen, which, agreeably to the present custom of their country, was measured out by the last or double ton. The Hook, when the mouth of the Wantsumn existed, would be very similarly situated to other points of land thus named; as for instance, the Heuk or Hook of Holland. But what are we to infer from the every day assertion we meet with? Those vessels are, or that vessel is going overland; it astonishes landsmen, but seamen, from habit, take no note of it.

The long flat, called the land, having from four to six feet only upon it at low water, was an extensive pasture, extending from the Shepway, or Sheepway, towards the mouth of the river Medway, and the rising ground was covered with forest trees: beautiful petrefactions and fossils of which were dregged up for many years, and by a peculiar process converted into Roman cement. When a terrible inundation swept away these fertile sheepways, or sheepwalks, and the rising point of the island itself, it was natural enough that our ancestors should say, when their first keels crossed it, "We are sailing or going over land," or that which was once land, and thus it is likely to be called through succeeding ages. Whit-staple, or White-staple, now Whitstable, was a town in the entrance of a haven, formed by the influx of the sea to the river Swale, and called Favers-ham, or Favers-haven, from a feudal baron of that name; hence the derivation of Faversham, now an inland town, but time immemorial a limb of the Cinque Ports. The sand called Whitstable Street, was the site of the old town of Whitstable, which, according to tradition, was swallowed up by the sea, in like manner with Hastings, Winchelsea, and others:—and here let us once more observe the impossibility, that the levels of Sheepy, and the street of Whitstable, should remain under water while a recession of the sea took place in the sister Isle of Thanet. Advancing to the rivers Medway and Thames, we leave the subject, and the jurisdiction of the Cinque Ports. The Nore sand, extending from the Isle of Grain, separates the waters of these noble rivers, and was formerly a narrow neck of land, and the Isle of Grain had a navigable channel in its rear, called the Zant-leet. Of the derivation of the Nore, and its having received its name from the Romans, there is little doubt—Ora Mouth, Ore Mouths. N'Ore, or an addition of an Ore, in or by the mouths of the Thames and Medway.

Thus, we may perceive that, where smiling pastures cover the remains of ocean-deposited wrecks, the sea must at some time have flowed in an uninterrupted channel; and that while the wave hides beneath its crest the former dwellings of man, it proves their having once existed, by throwing upon the shore momentos of his pride, his riches, and his power.

DESCRIPTION OF THE IMPROVED POCKET SEXTANT *

By Mr. C. George, Master, R.N.

It is a peculiar arrangement of *two sextants* brought together inverted. Has two index and two horizon-glasses. The horizon-glasses are placed so close together, as just to admit of the sun, or other object being seen clear between them; the unsilvered part being removed as unnecessary.

The plate of the lower sextant is made to take off, by turning a screw with a milled head until it is free of its worm; it is then removed like the lid of a box, by pulling on the handle; this admits of the glasses being cleaned without hazard of altering their adjustments, in which matter it has a great advantage over the present box sextant.

It is principally intended for the "*surveyor*," in fixing soundings, as two adjacent angles cannot be obtained at the *same instant* by a single observer. The middle object is seen direct without the intervention of glass; the extreme objects are seen reflected, one *above* and the other *below* the middle object; the exact contact being made by giving vertical motion.

It is likely to prove useful to army officers in engineering operations where *rapid movements* are essential. The traveller will find it a most useful companion. The ring handle is adapted to receive a ribbon, by which it may be suspended from the neck and can be placed in a side pocket when not in use, without fear of derangement; it is fitted with tube and slides, and an eye piece for *peculiar sighted* persons.

INCREASED POWER OF THE INSTRUMENT.

1st—Two angles can be obtained at the same time, which enables the surveyor to fix his position without an assistant. 2nd—It can be used as a "*Raper's instrument*" of superior power. 3rd—As a dip sector. 4th—As an optical square. 5th—With an artificial horizon, in obtaining altitudes of celestial objects near the "*zenith*;" and at sea, where the land intervenes, to measure the supplement of the meridian altitude.

It is also available, as two distinct single sextants, one of which may be used in case of the other being damaged.

DIRECTIONS FOR USING IT.

1st—*To observe two angles.*—Look at the *middle object*, and if the correct angles are on, the left hand object will be seen in the lower horizon-glass, and the right hand object will be seen in the upper horizon-glass. The exact contact is ascertained, by giving the instrument vertical motion.

2nd—*As a "Raper's instrument."*—Set the lower index to 90 and seek the reflected image, bring the other object in contact with this

* Made at Mr. Carey's, optician, 181, Strand.

reflected image; if the upper index is less than 90 you must *advance*, but if more than 90 you must *go back*.

3rd.—*As a dip sector*.—Set the upper index to 120, and the lower one at 60, hold the sextant upwards with your head reclining backwards, and find where the reflected horizons approach each other, adjust them by either index to form a straight line, and the observation is made; add the two readings together, subtract 180 and divide by 2 the dip.

This observation may be repeated, over a portion of the arc equal to 60.

4th.—*As an optical square*.—Set both indexes to 90, look at the object and signalize to the flagmen *right* or *left*, until they appear reflected in the horizon-glasses, one *above* and the other *below* the object. Thus two off-sets are obtained at the same instant.

5th.—*As a single sextant, &c.*—When used with the artificial horizon with the sun above 60, reflect the sun in the artificial horizon *upwards*, and bring the direct sun *downwards* to meet it.

ACCOUNT OF AN EXPLORING EXPEDITION TO THE SOUTH-WEST OF NELSON.

IN consequence of it having been reported by the natives who returned from the interior last winter, that an extensive and available valley existed upon the river flowing from the large lake, and that it was accessible from the Nelson district, I determined, in the early part of the summer, to make an excursion as soon as the dry season might be expected, in order to ascertain the nature of the country to the southward, beyond that which had been before explored, and to find, if possible, a practical route to the West Coast in that direction.

The same objects had likewise determined Mr. Fox and Mr. Brunner to undertake an expedition to explore towards the same point; and as the route of both parties, for the first fifty miles, must be the same, we agreed to proceed together to the Rotuiti Lake, where we intended to make a depôt of provisions, which would enable us to penetrate the farther country to a much greater distance than had been attained on former expeditions.

The party, consisting of Mr. Fox, Mr. Brunner, and myself, with E. Kehu, a native who had last year visited the large lake and adjacent country, and who had been engaged by Mr. Fox as guide, left Nelson on the 2nd of February, and arrived on the 4th at the edge of the great wood in the Munga Tawai Valley, to which point our provisions had been carried by two horses, furnished by Mr. Fox for the purpose.

As the distance which we attained exceeded that of any previous expedition in New Zealand, in which, travelling through an uninhabited country, the party had to depend entirely upon its own resources, it may not be irrelevant to mention the manner in which we provisioned ourselves for the trip:—2 cwt. of flour, with a sufficiency of bread for

immediate purposes, promised sustenance for four persons for, at least, a month; 24lbs. of sugar, with tea and coffee in proportion, and about 20lbs of ham, constituted the creature comforts, to the mention of which may be added that of half a bottle of whiskey, taken of course, for medicinal purposes. A sufficiency of large shot, for water fowl, had been left on a former excursion at the Rotuiti Lake; and with 2lbs. of powder and a double-barrelled gun our sporting equipment was complete. Dangling to the load of one of the party was a large tin saucepan, which had seen some previous service, while another carried an axe, and a third a small tent for the shelter of the baggage. Each had with him a blanket and a few necessary articles of clothing; and distributed amongst the party there was fortunately that happy versatility of talent which enabled it to boast of a "good plain cook," a first-rate tailor, two glee singers, and a dispensing physician.

Thus excellently equipped, we divided the whole equally amongst the four; and on the 5th, the horses being sent back to the Waimea, started into the "big wood;" each having a load of 75lbs., without a prospect of its materially diminishing for four or five days.

The appearance of one of the party, with his immense burden, forcibly reminded one of a grotesque Atlas; while another, with his small body and topping load suggested the idea of an overgrown and peripatetic mushroom; any allusion to amateur ticket-porters would, at the time, have been considered personal, and met with adequate resentment.

The travelling in the "big wood" is of the most laborious kind to a person heavily laden, as, although almost free from underbrush, the ground is covered with wet moss, into which the leg sinks occasionally to the knee, and the path is frequently impeded by dead timber and thorny brambles, upon which but few blessings are evoked by the traveller. After walking about three hours, and getting over as many miles, we were forced to encamp by rain, and remained during the rest of the day under the shelter of a blanket.

6th.—Fair weather. Proceeded along the usual track towards the Wairau Pass. Derived considerable amusement from contemplating the helpless situation of any unfortunate individual who, having lost his erect posture, and being wholly unable to divest himself of his load, which was carried before and behind, could no more recover his perpendicular without assistance than a dog could disencumber itself of a stone hanging round his neck. A decided disinclination manifested to remaining any considerable distance behind.

In the course of the day, passed the round mountain and the Wairau opening, and, having travelled about eight miles, encamped, still in the wood.

7th.—After continuing on for three miles in a S.S.E. direction, over heavy mosses, reached the open space before the Rotuiti Lake, and dined. After making sketches, proceeded on to the lake and encamped: distance, six miles.

The water in the lake was lower than on either of my previous visits, giving indication of an easy fording of the river, which had always before been an obstacle to exploring to the southward. We found the shot

which I had buried last year; and the number of birds which were about, promised more use for it than we had found when I had left it behind on that occasion of visiting Lake Arthur.

8th.—Proceeded down the grass valley about three miles, and found that the Bullen, as we denominated the river which flows from the lake, would admit of our crossing, its waters being unusually low: its rapid current and rocky bed, however, rendered it necessary for us to examine several of the rapids before we could determine at which to cross, and the fording, though accomplished in safety, was not unattended with considerable risk.

From the ford we proceeded a mile further down the valley, and encamped in a manuka grove near the river side.

9th.—It became evident that the native who was with us intended penetrating the wooded country to the south of the grass valley by going up the stream which flows into the Bullen at the termination of the plain, and which, in a former expedition, I had named the Howard. This was precisely the route I had intended to take in order to reach the Roturoa Lake, and which I have no doubt we should have found without his guidance. The more distant valleys of the Tiraumea and Matukituki, we should not so easily have reached. Encamped on Manuka Hill above the Puawini or Howard, which we reached after a walk of seven miles along the grass valley, on a course of W.N.W.

At the place where we halted were the remains of several bark huts, which had been built by former natives of Blind Bay during the inland excursions they had been in the habit of making after the now nearly extinct birds, the *kiwi* and *kakapo*.

To be Continued.

ROYAL NAVAL FEMALE SCHOOL.

THE annual meeting of the members of this institution was held on the 8th May at Willis' Rooms. Earl Manvers presided. According to the report, at the last annual election, 8 candidates out of 40 had been elected, and 19 had since succeeded to vacancies. The sum of £300 had been added to the funded property, which now reaches £4,850, and the building fund had been increased by the addition of £700. The total receipts, including a previous balance, was stated to be £4,108. 8s. 9d., and, deducting the expenditure, a balance of £495, 10s. 7d. remained. The report was agreed to.

Amongst the company at the meeting were the Earl of Egmont, Lord Colchester, Montague Gore, Esq., M.P., Admiral Bane, Admiral Bowles, Sir George Otway, Hon. Captain Maude, Sir C. Malcolm, the Rev. J. C. Conolly, the Rev. J. D. Hales, Captains Brazier, Du Cane, Sparshott, Eyres, Lamont, Eliot, Fishbourne, Major Little, and J. Warre, Esq. The meeting was opened with prayers, by the Rev. J. D. Hales.

The Hon. Captain Maude read the report, which stated that the number of pupils belonging to the school on the 31st of March was 82, namely, 65 pupils at £12 per annum, of whom 5 had lost both their parents, and 26 others had lost their fathers, and 27 pupils under law 6, at 30 guineas per annum.

Of those admitted; all were cases of necessity, and many had other strong claims on the sympathy of the public, from the long and valuable services of their fathers. The education given at the school was not only solid, but also of a strictly religious character, and the examinations of the pupils had proved highly satisfactory. As an instance of the right feeling among the pupils, the report stated that a request had been lately made by them for permission to give up the use of beer and sugar, and that the cost of these articles might be given to the fund raised for the relief of the suffering population of Ireland and Scotland. The general health of the scholars during the past twelve months had been excellent.

With reference to the financial state of the institution, the report stated, that the rent of the school house, hitherto paid by the munificence of the founder, will have to be provided for out of the annual receipts.

After the report had been read, the noble chairman expressed his gratification at finding the school in so prosperous a condition, and he ventured to hope when it became more known to the public, it would secure a still greater amount of patronage, not only amongst naval officers, but from the nation generally.

It was moved by Captain Lord Colchester, and seconded by Rear Admiral Bowles—

“That the report be adopted, printed, and circulated under the direction of the Committee.”

It was moved by Captain Fishbourne, R.N., and seconded by Rev. J. D. Hales—

“That this meeting, grateful to Almighty God for the success which had continued to attend the Royal Navy Female School, earnestly invites the aid of all classes of the community, and of the Naval service in particular, to give efficiency, and to secure a permanency to the Establishment.

Moved by Captain Bazalgette, R.N.; seconded by Capt. Washington, R.N.

“That for the more effectually carrying out the necessary and important object of an ‘endowment fund,’ laws 10 and 11 be amended, and that in future, these laws stand as follows:—

Law 10.—All donations, life subscriptions, and bequests to the institution, shall be invested in the public funds; one half of the amount of which sums shall be added to the £1000 originally given by the founder, to be held in trust as a permanent ‘Endowment Fund,’ and all annual sub-criptions with the interest of all monies in the funds, shall be applied to defray the expenses of the establishment, and in reduction of the cost for educating and maintaining those who shall be admitted to its benefits.

Law 11.—Should it be needful at any time to appropriate a portion of the invested fund, in necessary outlay for the establishment (the endowment fund always excepted) the committee shall have power to obtain and apply the same for such purposes, to be distinctly specified; such sum to be restored to the trust fund, whenever the circumstances of the society will admit of it.”

It was also resolved—

“That the following gentlemen re-elected or appointed by the committee, in lieu of out-going members, and other vacancies, be approved by this meeting:—Captain Sir H. L. Baker, Bart., R.N., C.B.; Commander Bazalgette, R.N.; Dr. William Bruce, Surgeon R.N.; The Rev. J. D. Hales; Captain F. E. Vernon Harcourt, R.N.; Major Little, R.M.; Captain Sir George Otway Bart., R.N.; Lieutenant Rouse, R.N.; and that the undermentioned gentlemen be appointed Auditors for the ensuing year:—Commander George R.N.; Mr. Inderwich Purser, R.N.; J. M. Case, Esq., Navy Agent.

After very able speeches on behalf of the institution, by the gentlemen who moved and seconded the resolutions, they were carried unanimously.

Vice Admiral Sir C. Malcolm, seconded by Rear Admiral Bowles, then proposed

"That the cordial thanks of this meeting be presented to the chairman, the Right Honourable the Earl Manvers, for his kindness in presiding; and for his obliging attention to the proceedings of the day.

THE WRECK OF THE THUNDERBOLT, STEAM SLOOP.—*Court Martial.*

THE COURT-MARTIAL on Commander Alexander Boyle, the officers of H.M. late steam-sloop *Thunderbolt*, for the loss of that vessel, commenced on Monday, 3rd May, and was continued, by adjournment, on Tuesday.

The Court assembled on board the *Victory*, 104, ordinary guardship at Portsmouth, on Monday, at nine o'clock, and was composed of the following officers:—Rear-Admiral Sir Hyde Parker, C.B., President; Capt. Pasco, of the *Victory*; Capt. Chads, of the *Excellent*; Capt. Milne, of the *St. Vincent*; Capt. S. Colpoys Dacres, of the *Avenger*; and Mr. M. Greetham, Judge-Advocate

The whole of the officers and ship's company of the *Thunderbolt* having been called in, the Judge-Advocate read the letter of Rear-Admiral Dacres, the Commander-in-Chief on the Cape station, reporting the loss of the *Thunderbolt* to the Admiralty, and their lordships' order thereon for the holding of the Court. The members were then sworn, and the Judge-Advocate read the various letters of Commander Boyle to Rear-Admiral Dacres, detailing the wreck of the vessel, and the means adopted to save her and her stores. They proved that from the time the ship first struck, until she was abandoned, no exertion was spared to get her off and save her, but all was of no avail.

After these letters had been read, the President asked Commander Boyle if he had any complaint to make of any officer or man belonging to the *Thunderbolt*. Com. Boyle replied, he had no complaint to make but against the carpenter for drunkenness, (who will be tried separately.) The same question was then put to the officers and ship's company, as applied to Com. Boyle, when, as with one voice, they all replied "None." The other witnesses were then put out of court, and the Commander and Master, Mr. James D. Milne, were placed before the Court, Com. Boyle being the first sworn.

Com. Boyle asked permission of the Court for his "friend," Mr. William Hamilton, paymaster and purser of the *Thunderbolt*, to assist him, which was granted. The chart of the *Thunderbolt* having been produced and proved to be the chart by which she was navigated to Algoa Bay:—Com. Boyle was examined.

President—State what your orders were in proceeding to Algoa Bay. My orders were to proceed from Simon Bay to Algoa Bay, to embark the 9th regiment, or as many of them as I could carry, and convey them to Table Bay, and then rejoin Admiral Dacres.

Will you point out on that chart the spot where the *Thunderbolt* was run ashore? (Com. Boyle pricked off the spot on the chart.)

What was the state of the weather when the *Thunderbolt* was rounding Cape Recife? Very fine indeed.

(The log was next put in.)

Did the *Thunderbolt* strike when abreast Cape Recife? Yes, as nearly as possible abreast.

Was there any hand-lead going? Yes, on both paddle-boxes.

What were the soundings? Seven fathoms in the starboard chains; quarter less seven in the port, at the last cast before striking.

Had you been in Algoa Bay before in the *Thunderbolt*? Yes, I had rounded the Cape on seven previous occasions.

Was the water smooth? Yes.

Was there any particular reason why you should border so closely on the Cape when you rounded it? My anxiety to reach the anchorage before sunset, so that no time might be lost in embarking the troops.

How was the *Thunderbolt's* head when she struck? A little to the southward of east.

Is there a beacon upon the Dispatch Rock? No. A buoy was placed there formerly, but has been washed away.

After she struck had she less than the soundings you have stated? Yes, in the port chains $4\frac{1}{2}$ fathoms when she struck; the least soundings in the starboard chains were a quarter less five, but I am not aware whether the man in the starboard chains got soundings as the ship struck. It was immediately before it or after it.

Where were you when the ship struck? On the quarter-deck, having left the port paddle-box about a minute.

Did the Master make any objection to the rounding the Cape so near? None.

As you have stated it was smooth water, and as Cape Receife was surrounded by rocks, was the sea breaking on the sunken rocks? No, I saw nothing to indicate their being there.

By Capt. Chads.—Had you any one aloft looking out for rocks when she struck? There was a hand at the fore topsail yard, as usual.

On this occasion did you run by your distance from the breakers as your guide? That was our usual practice, at the same time always keeping what was conceived to be sufficiently far outside all danger.

Had you any *Directory*, or were you going by your former experience into Algoa Bay? Former experience, and the distance from breakers and land in rounding Cape Receife, and by bearings to clear the Dispatch Rock.

By Captain Milne.—Where was the master at the time the ship struck? On the port paddle-box.

When you left the port paddle-box, about a minute before the ship struck, did you consider the ship past all danger? No. I did not conceive she was past the Cape, but I never thought she was in danger.

Had you any intention of going inside the rock marked on the chart, or outside? My intention was to have gone outside everything.

In running for the Cape, had you consulted the chart now before the Court—had you taken the bearings of the land marked upon it as the ship's position? I had not consulted that chart myself, as I considered myself sufficiently acquainted with the Cape.

Had any bearings been taken of the ship's position in running for the Cape, and were those bearings marked upon any chart? No bearings were taken.

Re-examined by the President.—It appears in Horsburg's *Directory*, that in coming from the westward the Cape should not be passed within three or four miles, what reason can you give for rounding it so near (half a mile)? Because, by the charts given for the guidance of the ship, no danger existed anything like so far off the Cape as that, and I consider it quite unnecessary to go so far out in a steamer.

That *Directory*, I believe, was supplied for your guidance from the Admiralty? I believe, in conjunction with others, it was.

If you had followed the instructions in that *Directory*, would the *Thunderbolt* have been lost? On that occasion, I believe not.

Mr. Milne, the acting master, was then called; he underwent a most

searching examination, but his evidence completely corroborated that given by the commander. He had rounded Cape Reicef about 16 times, in all sorts of weather, and he considered he had on former occasions rounded it as close as the *Thunderbolt* did when she struck. He was on the port paddle-box attending to the ship when the accident occurred.

The First Lieutenant, Frederick L. Barnard, underwent a strict examination, it being his watch on deck at the time. His evidence also corroborated the commander's as did also the evidence of the second lieutenant, Mr. G. Colin Campbell; the quartermaster, the seaman at the lead, the boatswain of the vessel, all gave similar testimony; excepting the quartermaster, who varied a little, it being his opinion that the *Thunderbolt* had in the present instance rounded Cape Reicef a little closer than usual.

The Master's Assistant, Mr. Anderson, deposed to the course the ship was steering when she struck. The quartermaster at the wheel deposed to the course she was steering, and the rate at which the ship was going through the water. The two leadsmen deposed to the depth of water aground. The look-out man on the topsail yards deposed to the non-appearance of any broken water.

The evidence of Mr. Langley, the principal engineer, which was corroborated by the second engineer, went to show that he was in the engine room at the time the vessel struck; that the engine was at the time making $14\frac{1}{2}$ revolutions per minute, that he felt the shock and heard a great rush of water into the starboard side of the ship, but it made no apparent difference in the working of the engines, although the cocks and pipes leading to the starboard bilge were driven in upwards of 18 inches; that he applied the port engine to the pumps, but on account of the injury he could not apply the starboard engine; that the water was soon up, to the engine room floor; and that from the gradual immersion of the vessel the revolutions of the engines decreased to 13; and that just before the vessel was finally grounded, the water had risen 2 feet 8 inches in the engine-room, which had, from the rolling of the vessel, extinguished the four wing fires.

The carpenter's mate gave evidence that the first night after the vessel struck a sail was got over the side, over the leak, and that shakings, bags, and wedges were driven into the leak, but without effect; that at the last survey it was found that her starboard side, from before the paddle-box for a considerable distance aft, had been stove in; that the riders above the floor timbers and the foot hooks had been carried away and driven in, and so heavy had been the concussion, that some iron tanks, stowed in the forehold, had been indented to the depth of 18 inches by the ship's timbers, and the lining driven inward.

All the officers and men that were examined bore testimony to the great coolness, and to the admirable and seaman like way in which Commander Boyle issued his orders after the accident, and to the great perseverance he used in endeavouring to save her from a total loss after grounding.

At a few minutes after four the Court closed the evidence for the prosecution, when Commander Boyle asking for a few hours to prepare his defence, it was proposed to adjourn till Tuesday at 10 A.M. and the Court accordingly adjourned.

The Defence.—At the time above stated, the Court re-opened, and Commander Boyle being called upon, read in a firm, audible voice, a forcible appeal to the Court, describing the intense anxiety he felt to perform the important service upon which he was despatched with the least possible delay; the urgency of the orders he had received; the frequency with which the same passage had been safely made before; and the discrepancies in the various charts and directories. He also put in letters from Rear-Admiral Dacres to the Secretary of the Admiralty, and Rear-Admiral Dundas, one of the

Lords; letters from Capt. Rous, Capt. Broadhead, and other gallant and distinguished officers, the contents of which were in the highest degree eulogistic of Commander Boyle and his services.

Commander Boyle then called Capt. Booth, R.N., late of the *Columbina*, who deposed that he commanded H.M. sloop, *Trinculo*, in 1834 and 1835, and was employed in going to and from Algoa Bay, during that time, and had an opportunity of witnessing the rocks which extend from Cape Recife; and from his own experience, and what he gained from others, he (Capt. Booth) deemed it quite safe to pass within one mile of Cape Recife; and he had passed within a mile and a half more than once; had known the beach there comparatively smooth, and in half an hour afterwards impossible to enter.

Commander Boyle.—What confidence do you place in *Horsburg* as a guide for the coast? Generally very high; but if I had followed his instructions relative to Cape Recife, when employed on the service of landing and embarking troops, I should consider that I had unnecessarily hindered the service. Capt. Booth also spoke in high terms of Commander Boyle as an officer of sound judgment, and great experience, both from his personal knowledge of him and what he had heard Admiral Dacres and other officers say of him.

Mr. Barnard, the first Lieutenant of the *Thunderbolt*, stated that during 20 years unbroken service he had never seen more precaution taken than by Commander Boyle on the occasion in question, and during the whole term of his (witness's) service under him; and that he was always on the alert, and personally superintending the course, and every other arrangement.

Captain the Hon. Arthur Duncombe, R.N., M. P., also deposed to Commander Boyle being a most skilful officer and discreet navigator, ever most zealous in the discharge of his duties; so much so that he (Captain Duncombe) could not conceive it possible for any officer to show more zeal or anxiety for the promotion and advancement of the best interests of the service.

The Master was then called upon for his defence, and handed in an address which was read to the Court by the Judge-Advocate, and the substance of which we give because it enters into the possible cause of the loss of the vessel more scientifically than the eloquent and touching appeal of Com-Boyle:—

“In *Purday's New Sailing Directory* is a notice of Captain Owen's stating the Cape Recife to be a low point of land composed of rocks and a few sand hills; it appears to be so named from the sea breaking constantly on a few scattered rocks about half a mile to the southward.

“Lieutenant Price's chart, supplied also for our guidance, places the extreme danger very little more than half a mile from the beach; and I beg most respectfully to be allowed to point out the many discrepancies which exists between that chart now before the Court and *Horsburg's Directory*.

“Horsburgh makes Beacon Point four miles from Recife, whereas by measurement on the chart it is two miles and three-quarters only.

“Horsburgh states that the Dispatch Rock is four miles and three-quarters from Beacon Point, and it measures on the chart one and one-eighth of a mile only.

“Purdy also gives the bearings of a rock in Algoa Bay, which he states is omitted in Lieutenant Price's chart, whereas these bearings agree with those of the Dispatch Rock in that chart.

“*Horsburg's Directory*, which recommends vessels not to approach nearer than three or four miles, seems so manifestly intended for sailing vessels subject to shifts or flaws of wind, that, situate as I was in a steamer, and employed as we were on a particular service, to carry out which with celerity,

seemed to be a great object with my commander, I trust that this hon. Court will give me credit for emulating his zeal in approaching with confidence a point which on several previous occasions we had, to the best of my judgment, passed just as close, but which, from the unusually smooth state of the sea, could not have broken off as far as usual. It may not be out of place to state here, that on our arrival at Port Elizabeth, we learned that the brig *William Woolley*, a regular trader on the African coast, had struck about three or four days previously on the rock, about the same distance from Receife as H.M. steam-sloop *Thunderbolt*; and so great is the want felt of a chart on which implicit confidence can be placed, that Lieut. Forsyth has been ordered by Rear-Admiral Dacres, the Commander-in-Chief on the Cape of Good Hope station, to survey Algoa Bay, in conjunction with Lieut. Jamieson, the harbour-master.

"It has been asked by this hon. Court, what advantage there is in rounding Cape Receife so close? and I beg to state, that during strong westerly winds the squalls rush down the hills with the greatest fury, causing troublesome seas a few miles from the beach; and there being no buoy on the Dispatch Rock, a vessel is obliged, if going outside it, to run a considerable distance to leeward, which causes a great loss of time, the saving of which is the object of steam."

The Master then called upon Com. Boyle for his opinion of his abilities as an officer, &c.; to which Commander Boyle replied, "I have always had the highest opinion of you as a navigator and a seaman. I have invariably found you attentive to your duties in every respect; and, notwithstanding what has occurred, should you at any future time be in the service and unemployed, I should have no hesitation in conscientiously recommending you to any officer who was without a master; and should I ever be fortunate enough to command a ship I should consider myself additionally fortunate could I obtain you as the master of her."

The first Lieut. also spoke very highly of the Master's zeal and abilities as displayed upon all occasions of service.

Highly gratifying testimonials were also read from Acting Com. Belgrave, formerly of the *Thunderbolt*; Capt. M'Dougal, of the *Vulture*; Capt. Eden, of the *Winchester*; and Capt. Broke, of the *Thunderbolt*, all of which spoke in the strongest language of the abilities of Mr. Milne, as an accurate navigator and most excellent officer.

This closed the case. At half-past 11 o'clock, the court was cleared for deliberation, and remained closed until 25 minutes past one, when it was reopened, and the Judge-Advocate delivered the finding as follows:—

"The Court is of opinion, that the said Commander Alexander Boyle and Mr. James Dundas Milne, the Master of the said steam-sloop, *Thunderbolt*, in rounding Cape Receife, did negligently trust to their eye, and did disregard the charts and instructions furnished for their guidance, by which the said sloop *Thunderbolt* was run on shore and subsequently lost; and the Court doth adjudge the said Commander Alexander Boyle and Mr. Milne to be dismissed from Her Majesty's service. But in consequence of the coolness and judgment displayed by the said Commander Boyle, Mr. James Dundas Milne, and the other officers and ship's company, when the ship was supposed to be filling in deep water; and their subsequent great and long continued exertions and ability to save the vessel and stores, the Court beg to recommend the said Com. Alexander Boyle and Mr. James Dundas Milne to the most favourable consideration of the Lords Commissioners of the Admiralty. And the Court is further of opinion that no blame attaches to any other officer, or any of the ship's company of the said steam sloop *Thunderbolt*, and doth adjudge them to be fully acquitted.

The Carpenter was tried and dismissed H. M. service.

THE NAVY OF THE TWELFTH CENTURY.

SHIPS of a much larger size, and of various descriptions, were constructed; voyages were performed to the Mediterranean, codes of marine law were established; and a British armament made conquests in distant seas. The English navy seems to have consisted chiefly, if not entirely, of large galleys, afterwards called galliases and galiones, small and light galleys for war, and of busses, which were large ships of burden, with a buff bow and bulging sides, chiefly used for the conveyance of troops, stores, provisions, and merchandise. No drawing or description of English ships before the reign of King Edward the Second justifies the idea that they had more than one mast; but some of the busses in the fleet which accompanied King Richard the First from Messina to Cyprus are said to have had a "three-fold expansion of sails;" an ambiguous expression, which may mean that they had three sails on one mast, or that the sails were affixed to two more masts. The most satisfactory idea of the English navy towards the end of the twelfth century is, however, afforded by the description of the fleet sent from England in 1189, to the Holy Land, and which, having missed King Richard at Marseilles, followed him to Messina. The king, according to Richard of Devides, the only writer who has entered into details on the subject, found at Messina one hundred sail and fourteen busses, "vessels of great capacity, very strongly and compactly built." The principal ships had three spare rudders, thirteen anchors, thirty oars, two sails, three sets of all kinds of ropes, and duplicates of every thing else which a vessel could require except the mast and boat. Each vessel had a skilful commander and a crew of fourteen sailors, and carried forty war-horses with their armour, the same number of foot-soldiers, and provisions and stores of all kinds for twelve months. As galleys were the principal vessels of war, more interest attaches to them than to mere transports, or what are now called merchantmen; and there is fortunately a contemporary description, not merely of those vessels, but of a naval engagement. Before the arrival of Richard the First in Palestine, an action occurred between the Turkish galleys and the allied Christian fleets; and the historian (Vinesauf) prefaces his account of the combat by pointing out the difference between the war-fleets of the Romans and those of his own time. "In those of old," he says, "the benches for the rowers were more numerous, amounting sometimes even to six; which, rising gradually in distinct rows, some oars struck the waves with a long, and others with a shorter stroke; but modern galleys were long, low in the water, and slightly built. They had rarely more than two banks of oars; and were armed with a beam fixed to the prow, called a spur, which struck against the enemies' ships. Another and smaller class of galley, called 'galiones,' had only one bank of oars; and, from being shorter and lighter were more easily turned, and better adapted for throwing combustibles." As in the ships of the preceding century, a bulwark was formed of shields, and the rowers kept as close as possible to each other that the soldiers, standing above them, might have more space to fight.

The above extract is from *A History of the Royal Navy, from the Earliest Times to the Wars of the French Revolution*, by Sir N. Harris Nicolas, G.C., M.G., we gather from the same work that King Richard first attempted the formation of distinct rules for controlling the conduct of sailors, and the following are described as his.

Articles of War.—If any man slew another on board a ship, he was to be fastened to the dead body, and thrown with it into the sea; if the murder was committed on shore, he was to be bound to the corpse and buried with it. If any one were convicted by legal testimony of drawing his knife upon another, or of drawing blood in any manner, he was to lose his hand. For

giving a blow with his hand, without producing blood, the offender was to be plunged three times into the sea. If any one reviled or insulted another, he was on every occasion to pay the offended party one ounce of silver. A thief was to have his head shaven, boiling pitch poured upon it, and feathers shaken over him, as a mark by which he might be known; and he was to be turned ashore at the first land at which the ship might touch. By another ordinance, every person was strictly required to be obedient to the commanders or justices of the fleet; and as they regarded themselves, and their return to their own countries, they were enjoined faithfully to observe these regulations.

In the time of John, navy laws had emerged in some way from the rudeness which, in previous reigns, they had exhibited; formal records were preserved, and England began to assume that mastery which she has since so permanently maintained. In the second year of his reign, John issued an ordinance at Hastings, enjoining every ship that met his fleet at sea to lower her sails at the command of its admiral or his lieutenant. This ordinance seems to have been first published by Selden, who thus translates it:—"If the governor or commander of the king's navy, in his naval expeditions, shall meet on the sea any ships whatsoever, either laden or empty, that shall refuse to strike their sails at the command of the king's governor, or admiral, or his lieutenant, but make resistance against them which belong to his fleet, and then they are to be reputed enemies if they may be taken: yea, and their ships and goods be confiscated as the goods of enemies; and that though the masters or owners of the ship shall allege afterwards that the same ships and goods do belong to the friends and allies of our lord the king, but that the persons which shall be found in this kind of ships are to be punished with imprisonment at discretion for their rebellion." To this Selden adds:—"It was accounted treason if any ship whatsoever had not acknowledged the dominion of the King of England in his own sea by striking sail: and they were not to be protected upon account of amity who should in any wise presume to do the contrary. Penalties were also appointed by the King of England in the same manner as if mention were made concerning a crime committed in some territory of his island."—*Hampshire Advertiser*.

RECENT VOLCANO IN THE RED SEA.

A volcano in the Red Sea, just bursting into action, was discovered on the 14th of August from on board the steamer *Victoria*, then on her upwards passage from Suez. The morning of the day in question was cloudy, and the atmosphere close and oppressive, without anything to indicate the approach of the squall that so speedily followed. About 10 a.m. thick masses of vapour were seen to extend along the horizon from N.W. to S.W., when a singularly vivid flash of lightning was followed by the rolling of distant but distinct thunder. The steamer was at that time abreast of the Zeboyer Islands, when smoke was observed to issue in a thin spiral column from what is set down as Saddle Island, on the chart lat. 15° 07', long. 42° 12'. When little more than three miles off, the officers of the steamer observed a large mass of dense sulphurous-looking smoke taking the place of the vapour originally descried; a sudden and violent squall then burst upon them, which obstructed their view. These phenomena are all eminently characteristic of the usual concomitants of volcanic disturbance.

Instructions have been given to have surveys taken, and a careful examination made all around, as nothing is more likely than that upheavals may have

occurred and shallows been created, or that this may only be one of a series of similar phenomena now in prospect or progress. The Zeboyer Islands, and indeed the greater part of the eminences along the shore of Arabia from Aden to well up the Red Sea, are of volcanic origin. *Jibbel Teer*, still so conspicuously marked with the characteristics of a recent volcano, is said to have been seen smoking by the officers of the survey of 1832. Amongst the Arab pilots it is believed to have emitted flame about the end of last century, and still bears the name of the "Hill of Smoke" amongst the inhabitants of the adjoining shore. We trust that this is not the herald of the resumption of active operations amongst the Red Sea and Arabian volcanoes. Vesuvius had slept for a vast lapse of years when it awoke to bury Herculanium and Pompeii in its ashes. Jurillo arose from the plains of Mexico to the height of many hundred feet in a single night, and it would be an awkward ejection for those who have had the audacity to construct cantonments and build a town in the very bottom of the crater of Cape Aden, were subterraneous agency, scarcely yet asleep, to resume its energy, and by one belch of its fiery mouth project them high into the middle air; a visitation, doubtless as the faithful would regard it, for the invasion of the Arabian shore.—*Bombay Times*.

GEOGRAPHICAL DISCOVERIES.

THE friends of geographical science will be gratified at the communication made by Sir. R. I. Murcheson to the society of which he is president, of the intended Russian expedition of discovery along the Weal Mountains, the *first* enterprise of the Imperial Geographical Society of Petersburg. Colonel Kofmann (the companion of Colonel Helmersen in his Siberian tour,) is the chief of the expedition. At Peru, he will be joined by M. Strajefski, the previous explorer of the part of the chain north of Bogolofsk, who will act as second in command. Branth, the faithful companion of Middendorff, is the naturalist of the expedition; whilst two topographers of the general staff will sketch the country, and construct maps,—the party being furnished with every sort of instrument for conducting observations. Information received from those distant points encourages the geographers of Petersburg to hope that the travellers will not meet with very great natural obstacles, and that means of transport will be found in abundance. The expedition will probably be divided into two detachments; one of these will proceed in boats from Scherdyn, ascending the water drainage of the Kama (*i. e.* on the European side of the chain,) and will afterwards descend the great stream Petchora, re-ascending, as often as possible, the smaller rivers which flow down from the Ural Mountains; the other will proceed along the crest of the chain, which will be practicable throughout. At the same time, the rivers which water the east side of the chain will not be neglected, and boats will be on them for the conveyance of the travellers.

This summer will be passed in reaching 65° N. lat., (the parallel previously attained on the Asiatic side by the labours of Strajefski;) and in the remaining year it is hoped that the glacial sea will be reached. Sir R. Murchison pointed out the portion of the work which had already been accomplished by his friend Count Von Kerseying, *i. e.* in all the parts of the chain, from which the affluents of the Petchora descend.

At the same meeting was read an interesting paper by Admiral F. Wrangel, 'On the best means of reaching the Pole.' "My hypothesis," says the Admiral, "is founded on facts collected during a three years' navigation in a

sea whose depth is not more than 22 fathoms, and which is landlocked on the south by the Siberian coast; and thus defended from the winds and waves over 180° of the compass. The northernmost point of Greenland, Smith's Sound, seen by Captain Ross, is in lat. 77° 55' N., and in long. W. 76° 29'. On the island of Wolstenholme there is a village of Esquimaux, under the 77th parallel, on the western coast of Greenland. There should be previously dispatched to this point, in a separate party, ten *narty** (a particular kind of sledge,) with dogs and courageous drivers; likewise an ample supply of stores and provisions. In the autumn, as soon as the water freezes, the expedition should proceed from Smith's Sound. On arriving at the 79° it should seek, on the coast of Greenland or on the valleys between the mountains, a convenient place for depositing the provisions. In February, the expedition might advance towards that place; and in the beginning of March another station, two degrees farther north, might be established. From this last point, the polar detachment of the exhibition would proceed during March over the ice, without leaving the coasts, deviating as little as possible from the line of the meridian. A part of the men, dogs, and provisions should await its return at the last station. The expedition to reach the pole and to return must traverse in a direct line, nearly 1,200 miles; or, including deviations, not above 1,530; which is very practicable with well-conducted sledges, good dogs, and proper conductors.—*Athenæum*, 17th April.

LAW.

SALVAGE TRIAL AT COVE.—*Helen Scott*.—This trial took place before a bench of magistrates at the Revenue House, Cove, on the 19th April. Several parties had put forward claims for salvage respecting the brig which was driven on the rocks nearly opposite Trabolgan House, on the 25th of March, and eventually got off. The following awards were made:—E. B. Roche, Esq., for damage to premises, use of horses, carts, storage, &c.—claim £185., award £55. 16s. Mr. Roberts and coast guard of light-house station, fourteen in number, for protecting property day and night, services, &c.—claim £29. 14s. 6d., award £29. 14s. 6d. John Duhig, for information about wreck—claim £10., award 5s. James Ahern, for services—claim £5., award 1s. Mr. Brian, for helping to unrig the vessel, &c.—claim £20., award £1. 10s. Total claimed £249. 14s. 6d.: total award £87. 6s. 6d.—*Shipping Gazette*.

SALVAGE.—An important case to shipmasters was decided in the Admiralty Court on Tuesday. The *Ann* had grounded on the bar of Shields harbour, and was got off by several steam-tugs. She was valued at £8,500 to £7,000. Drs. Adams and Curteis, for the salvors, submitted that this valuable ship was, by the aid of the six steam-tugs, saved from inevitable destruction. There was an ample fund to relieve the salvors from, and the Court ought to be liberal in its reward, so that the utmost energy should be exhibited in giving aid to vessels in distress on future occasions. The services were not of long duration, but the sea was high, and the tugs were in danger of collision and loss. The value of the tugs was about £4,500, and they were uninsured. Dr Lushington referred to the facts. The *Ann* was proceeding with a cargo of coals from Tynemouth to Aden. She drew 16 feet of water. She got on the bar at high water, and was in a very critical position. The Court considered that £400 was the amount to which the salvors were entitled.

* No other plural is given to this vehicle by the *Athenæum*.

SALVAGE.—The Mary.—This was a suit to recover salvage services rendered to this vessel by the fishing smacks *Choice* and *Dart* in October last. A tender of £100. was made, the Court overruled it, and awarded £150.—*Shipping Gazette.*

The Apollo.—This suit was also for salvage and compensation instituted by three fishing smacks for services rendered on 6th November last. £300. was tendered, but deemed insufficient, and the Court allotted £400.—*Shipping Gazette.*

THE STADACONA.—Before Dr. Lushington.—*Collision.*—The *Isabella*, bound from Portugal to London, came into collision with the *Stadacona*, proceeding on a voyage from London to Limerick, thirty miles from the Lizard. Dr. Haggard and Dr. Jenner were heard for the *Isabella*, and Dr. Addams and Dr. Bayford for the *Stadacona*. From the evidence, Captain Hayman decided that the *Isabella* did all she could under the circumstances. She was close hauled, and the master never altered his course, while the other ship was coming free; and although she put her helm up, she did not do it in time. Verdict, damages and costs.—*Shipping Gazette.*

THE GEORGE.—*Collision.*—Before Dr. Lushington.—This case was promoted by the owners of the schooner *Globe* against the owners of the *George*. The court was assisted by Captains Hayman and Farquharson. Dr. Addams and Dr. Twiss appeared for the *Globe*, the Queen's Advocate and Dr. Bayford for the *George*. The *Globe* left Stockton-on-Tees on 18th December last, and when off the Whitby light discovered the *George* on her leeward bow, according to her account, distant about a quarter of a mile, with the wind three points free. The *Globe* was on the starboard, the *George* on the port tack. The master of the *Globe*, considering that the vessels would go free, kept his course, but soon discovered that the *George* was coming stern on, and altered the helm, but before it could take effect the collision occurred and the *Globe* was cut nearly through. On the part of the *George* it was alleged that when she first saw the *Globe* the vessels were approaching each other stern on, and being on the port tack she obeyed the Trinity rule and ported her helm. From the evidence adduced, the court gave judgment that the *Globe* was wrong. Action dismissed with costs.—*Shipping Gazette.*

CASE OF COLLISION.—The *Gipsy King*.—Dr. Lushington delivered judgment in this case, (which was argued in February last,) in the Admiralty Court. The suit was brought by the owners of a vessel called the *Highlander*, against the *Gipsy King*, for damages in consequence of collision. The Trinity Master, having heard the case, were of opinion that the *Gipsy King* was to blame, and in that opinion the court concurred. It was said that she had an authorized pilot on board, and that he was responsible, and not the owners. The accident happened in the Clyde, between Glasgow and Greenock, three vessels, including the *Gipsy King*, being in tow with a steamer together at the time. The learned doctor was of opinion that the collision was occasioned by the fault or default of the pilot; that the *Gipsy King* was obliged to employ such licensed pilot, and that the owners were not liable. He said he should take the same course that he did in the cases of the *Agricola* and the *Fame*, but should make no order as to costs.

PILOTAGE LAWS.—Charles Bouling, master of the Dutch trader *Seia*, appeared before Mr. Yardley at the suit of Mr. Henderson, a licensed Trinity-House pilot, for unlawfully employing an unlicensed person, after the complainant had offered his services to pilot the vessel from Gravesend to London. Double pilotage, £7. 7s. was sued for as a penalty; after some discussion, this was reduced to £4, with 2s. costs.—*Shipping Gazette*.

WAGES.—Mr. V. Ryan, master of the *Aurora*, appeared at the Thames Police Office to answer the claim of James Stokes, for wages amounting to £8. 10s. The defence set up was, that the man had been labouring under a loathsome disease which incapacitated him from work, and on that ground a forfeiture of wages was sought. A certificate, however, was put in from the Seamen's Hospital Ship, *Dreadnought*, certifying that the man was afflicted with scurvy. This evidence being conclusive, Mr. Yardley awarded the full amount due to him.—*Shipping Gazette*.

WAGES.—Mr. J. Colford, master of the brig *Creole*, appeared at the suit of Alex. Baillie for £13 wages due to him. He signed articles on 4th November last, and performed duty till Saturday following, when he was taken ill off Gravesend, and unable to work until 13th January. The defence was that the prosecutor had concealed the disease when he shipped, but as this was not borne out by evidence, Mr. Yardley directed the whole of the wages to be paid.—*Shipping Gazette*.

MUTINY.—Nine seamen belonging to the barque *Theodosia*, were charged at the Thames Police-court under the 6th sec. of the Merchant Seaman's Act, and 7th and 8th Vic. c. 112, with unlawfully refusing to proceed to sea after signing the usual documents. Each man had received an advance note for a month's pay. The ship was towed down to the Nore, in charge of a sea-pilot, and came to an anchor. On the following day all hands were called up to weigh, when, to the surprise of the Captain, they refused to stir, saying the ship was not seaworthy. She was brought up to weigh all, and, after a survey, pronounced to be perfectly seaworthy. Mr. Ballantine sentenced the prisoners to thirty days imprisonment with hard labour.—*Shipping Gazette*.

THE QUEEN V. A VESSEL UNKNOWN.—This vessel was captured on the 1st November, off the coast of Africa, by H.M.S. *Alert*, having on board a crew of eleven persons and fifty-eight slaves. A prize crew was placed on board to conduct her to Sierra Leone, but in consequence of her unseaworthy condition they were obliged to run her into Maranham, in the harbour of which the ship was stranded, and the slaves were taken possession of under false representations. The Queen's Advocate prayed the court to condemn the vessel. The court acceded to the prayer.—*Shipping Gazette*.

CAUTION TO MASTERS OF VESSELS.—£1. 15s., the moiety of a fine inflicted upon the master of a vessel, by the Southampton magistrates, for having sailed from the United Kingdom short of the number of apprentices required by the 37th section of the Seamen's Act, has been presented from the Seamen's Register Office, at the Custom-house of this port, in aid of the funds of the Humane Society. The other moiety of the fine has been handed to the treasurer of the fund for the relief of the sufferers by the loss of the *Tweed*.

NAUTICAL NOTICES.

(From the *Bombay Gentlemen's Gazette*.)

TRINDER SHOAL IN THE STRAITS OF MACASSAR.—Sir,—As there are doubts expressed in Horsburgh's Directory as to the exact position of *Trinder Shoal*, in the Straits of Macassar, I beg to state, through the medium of your journal, for the information of the public, that it was seen by the *Charles Forbes* and *Sullimany*, this voyage from China, and that it is in lat. from $2^{\circ} 55'$ to $3^{\circ} 1'$ south, in a N.W. and S.E. direction, distant from the Celebes shore twenty to twenty-five miles, and directly in the track of ships crossing from Cape Williams to the Java sea.

I remain, &c.,

J. H. WILLS,
Commanding ship *Charles Forbes*.

For the information of the shipping interest, we reprint from the *Mauricien*, the following report of a reef not laid down in the charts, and upon which the *Nabob* struck on her passage from China:—

12th October at 6 P.M., Panter Island east end bore S.E. and Green Island S.b.W. 12° , steering for the Alloo Passage; at half-past 4 A.M., passed the latter island, saw the Flat Islands bearing W.S.W., the wind being at S.S.E., kept the ship away west, to give the latter islands a clear berth, to round their west end, and to pass between them and the Lambden Shore, which is recommended by Horsburgh's Directory as being safe and clear of any danger.

At 5 A.M., saw discoloured water close to the bow; the helm was then up, but before the vessel wore round she struck against an extensive coral reef about four miles in length, N.E. and S.W., and about three broad; run out the small stream anchor and hawser, hove the ship off the bank, but the current or tide changed at the time and drove the ship on the reef again; ran out the stream anchor and cable, hove both cables taut, but the ship by this time had grounded forward, although there were 4 fathoms water under her stern; the ship rounded and struck very heavily, and made water.

At 4h. 30m. P.M., being then high water, set all sail aback on the ship, hove taut on both hawsers, when the ship backed off the reef; and, for the safety of the ship and cargo, was obliged to cut away both hawsers; ship making a great deal of water, both pumps working.

At midnight, when the ship was in stays off Middle Island in the aforementioned strait, the coral rock was seen underneath the ship's bottom; N.E. point of the latter island bore W.S.W., about two miles.

Passed over a dangerous coral reef in the Gilloo passage, having on it about 20 feet water. Boo Islands bore from it E.b.S., and Pulo Passang S., extending east and west about two miles, and a quarter of a mile in breadth.—*Calcutta Englishman*.

H.M.S. Agincourt, Penang, 2nd January, 1846.

SIR.—I am desired by H. E. the Naval Commander-in-Chief, to send you the accompanying corrections of Captain Collinson's Sailing Directions for the Coast of China, for the purpose of being published in the *Hong Kong Register*, for general information.

I remain, &c.,

EDWARD WALLER, Sec.

(Signed)

To the Editor of the *Hong Kong Register*.

Corrections of Captain Collinson's Sailing Directions for the Coast of China.

In the description of Red Bay, lat. $24^{\circ} 1'$, long. $117^{\circ} 52'$, the bearing of the reef which lies six cables from the low hill, on the shore, is given as N.b.E.—it should be E.b.N.; and the reef within the anchorage of Red Bay is described as bearing S. 55° E., 7 cables from the Southern Black Rock, when it ought to be N. 55° W.

N.B.—It is to be observed here, that the bearings given in a letter from the *Wolverine*, dated 25th May, 1846, and published in the *Hong Kong Register*, are incorrect.

In the direction for proceeding to the anchorages in *Chin-chew Bay*, both north and south of the Boot Sand, for "Iatoi" (island,) read "Tatoi"; and in the directions for the Saheen Rock and Mid Channel Reef, the same correction to be made.

For "Takeen" read "Saheen," in the description of this rock.

Meichow Sound, (lat. $25^{\circ} 23'$, long. $119^{\circ} 10'$.) In the bearing of the flat patch stated to lie west 9 cables from the Nine Pin Rock, read east.

Inner Harbour. The bearing of the *South Rock* from Rugged Point should be E. $\frac{1}{2}$ N. 3-8 miles, instead of W. $\frac{1}{2}$ N.

Add the final word "it" to the sentence giving the bearing of a sunken rock S. 57° W., 2 $\frac{1}{2}$ cables from the *North Rock*.

The following are the corrected bearings of a sunken rock off the east point of Honghae Bay:—

Tysamme Mound, which is the highest point of the east end of Honghae Bay, bears N. 26° W. from it; and Goat Island, the largest of the first group of islands to the south-eastward of the point, N. 50° E. 1.9 miles.

ED. WALLER,

Secretary to H.E. the Commander-in-Chief.

H.M.S. Agincourt, Penang, 2nd January, 1847.

Hong Kong Register, Jan. 26th, 1847.

From the Hong Kong Register, December 15th, 1846.

The following Official Report is made known by the Senior Naval Officer for general information.

(COPY.)

H.M.S. Royalist, Hong Kong, 10th December, 1846.

SIR,—I have the honour to inform you, that there exists a dangerous reef off the north point of Formosa, which does not appear in the Admiralty charts, and the north point, instead of being a high perpendicular head, as it is described, is a very low point. It is in lat. $25^{\circ} 18' N.$, long. $121^{\circ} 35' E.$ The reef extends about one mile off it, and encircles the coast to the westward. I should recommend all vessels giving that point a wide berth.

I remain, &c.,

(Signed)

D. M. GORDON,

Lieut. Commander.

To Captain Tulbot, H.M.S. Vestal, Senior Officer, &c.

The *Hong Kong Register*, Feb. 9th, 1847, gives an account of the loss of the Hamburg ship *Johns*, furnished by her commander. The rock on which the vessel struck appears to be one of those sharp abrupt rocks under water with which the entrance to the China Sea and the Straits abound, and which are so dangerous to mariners from their seldom giving notice of their proximity, by surf or ripples breaking upon them; and which, from the same cause, are so apt to elude the search of even the most careful surveyor:—

“Singapore, 6th January, 1847.

SIR,—I avail myself of your permission to give you the particulars of the loss of the Hamburg ship *Johns*. The vessel left this harbour on the 31st December, at 8 A.M., steered E.b.S. until noon, when we had Point Romani, bearing N.b.E. $\frac{1}{2}$ E., distant about eight miles, shaped our course east, wind W.S.W. After having continued this course for about five miles, the vessel struck—it appears on a small solitary rock not laid down in Horsburgh's Charts,—the N.E. point of Bintang bearing at the time S.b.W., S.S.W., distant about eight miles. We examined the pumps and found 2 feet of water in the hold. The helm being put apart, the vessel got off the rock in less than a minute, and commenced to sink immediately, fell over on her starboard side, and ten minutes after she had struck the water casks and long-boat floated off the decks. We had barely time to take to the boats, in order to save our lives, without being able to save either clothing or provisions. The force of the wind not admitting of our return to Singapore by the Straits, we went round the south point of the island of Bintang, and arrived at Rhio on Sunday last, at 3 P.M.

“I remain, &c.,

“J. P. GAGZO,

“Late Commander of the ship Johns.

“To the Editor of the Singapore Free Press.”

ANNATTO BAY, Jamaica.—A plan of this bay, by Lieut. Baynton, R.N., has been published by the Admiralty, for which the following useful directions have been drawn up by that officer.

Annatto Bay, is on the north side of the island, nearly in the same longitude as Port Royal, and is the general shipping port of Georges, and part of St. Mary's estates. From several meridian altitudes, the lat. is $18^{\circ} 18' N.$, and the long. is assumed to be $76^{\circ} 52' W.$

Ships bound to Annatto Bay should make Ship Island, (a short distance to the westward of Port Antonio,) to prevent their passing the anchorage and run down the coast at the distance of a league. Should there be any vessels at anchor, their masts will be seen over Free Point on the port hand (entrance) before the anchorage can be seen. While running down, 80 fathoms of the port cable should be hauled on deck, and a long range of the starboard cable, as the port anchor is first let go in 30 fathoms on the edge of the bank, but not in less than 5 fathoms. Then moor with the stream anchor over the stern to the westward.

The bank of soundings is steep to, and there is very deep water throughout the bay, and no anchorage on the coast except near the shore in dangerous positions. Pilots always attend, but it may happen from severe weather that none can go off to vessels. In this event, the following few remarks may be useful to the stranger with the chart as a guide.

When off Free Point, run to the westward until Gray's Inn Great House, (very conspicuous,) is open to the westward of the Wharf Store. Then steer for it until Gibraltar Wharf opens to the eastward of a house above it, then shorten sail and haul in towards the bank, keeping sufficient way on the ship to run out about 70 fathoms of the port cable, as the anchor should be let go when Gray's Inn Great House is on the centre of the store. When Gray's Inn Great House is open to the eastward of the Store, let go the best-bower, taking care not to go into less than 5 fathoms. Run out the best-bower until the ship rides between both anchors, moving with a good scope of the stream anchor laid out astern to the westward.

This is not a healthy port, but during the prosperous days of Jamaica, a great quantity of produce was shipped from it. This anchorage has the advantage of ships being enabled to proceed to sea from it with either a sea or land breeze.

LIGHTHOUSE ON FARON, North of Gothland.—The following translation of an ordinance issued by the Royal Navy Board at Stockholm, on the 16th April, has been received at Lloyd's.

“The Royal Navy Board hereby make known, for the information of mariners, that, by command of his Majesty, a lighthouse, 80 feet high, will be erected on the N.E. part of Faron, north of Gothland, provided with a revolving reflector, to be exhibited in the course of October next, should no unexpected obstacles intervene.

EAST BUOY OF THE RIVER MIDDLE.—Notice is also hereby given, that the eastern part of the River Middle Sand having extended itself in a south eastern direction, the *striped red* and *white* buoy at that station has been moved about $1\frac{1}{2}$ cables length in that direction, and now lies in 13 feet at low water, spring tides, with the following marks and compass bearings, viz. :—

The Mark Tree on Sheppy on with the High Mill at Mile-	
town	South.
The Royal Hotel in line with the west side of the jetty at	
Southend	N.b.E.
Shellhaven House open north of the Chapman Beacon	N.W.b.W. $\frac{3}{4}$ W.
Nore Light Vessel	S.E.
The West Buoy of River Middle	N.W.b.W.

By order,

J. HEBBERT, *Secretary.*

POSTILION ROCK.—Postilion Rock, situated at the N.E. entrance to the Straits of Malacca, and near Pulo (Pulo is the Malay word for island,) Bintang. The *Johns* left Singapore for China, and next day she struck on a rock, and sunk immediately in 18 fathoms, her royal mast being level with the water in five minutes, scarcely allowing the crew time to get into the quarter-boat, in which they reached Rhio, thus making the circuit of Pulo Bintang. The bearings and distances, taken as correctly as the excitement of the moment permitted, are, Bintang Hill, S.S.W. $\frac{1}{2}$ W. 14 miles; Barbucret Hill, W.N.W. $\frac{1}{2}$ W. 23 $\frac{1}{4}$ miles. The rock, seen only at low water, is marked “Postilion” in the recent Dutch charts, which are the only ones to be depended on for that locality.—*Shipping Gazette.*

SHOAL IN THE STRAITS OF SUNDA.—The following has been posted at Lloyd's :—

“*Liverpool, April 26.*

“I have taken the liberty of sending you, for the benefit of brother ship-masters, the exact position of a shoal which was reported to me in Singapore, by the Dutch naval officers from Batavia.

“*Shoal in the Straits of Sunda.*—Bearings by Dutch charts, N. $63\frac{1}{4}^{\circ}$ W. from the *Button*; N. $27\frac{3}{4}^{\circ}$ E. from the south end of *Thwart-the-Way*; N. 53° E. from the north end of *Thwart-the-way.*

“Bearings by *Horsburgh.*—From the shoal, the south part of *Zulphen*

Islands, just on with the northerly part of *Pulo Bessy*; this shoal has 2½ fathoms on its shallowest part, and 12 and 18 fathoms around. The distance from the *Button* is 12 miles.

JOHN HILTON,
Of the ship Helena, from Singapore.

Hydrographic Office, May 5th, 1847.

Notice is hereby given by the Neapolitan Government, that a brilliant fixed light has been established on *Campanella Point*, (the eastern side of the Capri Channel,) in lat. 40° 34' 11" N., and long. 14° 19' 39" E. of Greenwich. The light was first exhibited on the 15th April last, and is elevated about 77 feet above the level of the sea.

West Odiham, May 14th, 1847.

ROCK IN COOK'S STRAIT.—*Extract of a letter from Sir E. Home to the Hydrographer.*—I have just come across the rock which I mentioned as having nearly ran upon in Cook's Strait, off Queen Charlotte's Sound, New Zealand. We passed close to it, blowing hard from the southward; it is so low that it was not seen until passed, and some there were who denied its existence, and called it fancy. The bearings taken at the time and are in the log, "Passed close by a sunken rock awash with the water's edge. The White Rock bearing S.W.b.S.; Outer Island of the Brothers S.E.b.S., compass." Captain Cook says, vol. i., page 105 of the Second Voyage, "The fresh westerly wind now died away, and was succeeded by light airs from the south and south-west, so that we had to work in, with our boats ahead towing. In the doing of this we discovered a rock, which we did not see in my former voyage. It lies in the direction of S.b.E. ¼ E., distant four miles from the outermost of the Two Brothers, and in a line with the White Rocks on with the middle of Long Island; it is just even with the surface of the sea, and hath deep water all round it."

Referring his marks to the chart that we used, they place it exactly where we had marked it.

EVERARD HOME, *Captain R.N.*

SHIPWRECKED FISHERMEN AND MARINERS' BENEVOLENT SOCIETY.—Three of the crew of the brigantine *Rio*, Capt. J. Halson, of and from Liverpool to Petersburg, wrecked on the coast of Jutland on 13th April, were relieved by the agents here, and a free passage granted to them by the Hull and Selby Railway Company to Liverpool. Also two of the crew of the schooner *Tagus*, Capt. M'Donald, of and from Leith to Riga, wrecked on the same day, on *Lesso*, were forwarded hence by steam to Leith at the Society's expense. 154 sailors have joined the Society at this port during the last three months, and the following gentlemen and firms have recently become annual subscribers to its funds:—J. R. Pearce, Esq., Messrs. Thompson, M'Cay, and Co., T. W. Palmer, Esq., Messrs. Taylor and Bright, and Messrs. G. Malcolm, and Son.—*Hull Advertiser.*

WRECKS OF BRITISH SHIPPING.

(Continued from page 269—cs crew saved, cd crew drowned.)

Ship's Name.	Belong to.	Masters.	From.	To.	Where.	When.
Catherine		Scott	Jamaica	Glasgow	Alacrane R.	Mar. 20, cs
Charles	Stranraer	Brotchie	Moulmein	Falmouth	abandoned	Mar. 19, cs
Charles	Coleraine	Melghan	Coleraine	Campbelton.	Portrush	Ap. 26, cs
Consort	105 Greenock	Nicol	Limerick	Galatz		Mar. 29, cs
Croft	N. Shields	Hays	N. Shields	Scotland		
Eather	London	Garrick	on a Sealing	voyage	S. Georgia	11d.
Exmouth	Newcastle	Booth	Londonderry	Quebec	Island Islay	Ap. 24 d cs
Experiment st.,			Sunderland	London	Aldbrough	d
Fanny	110 Coleraine	Griffin	Coleraine	Larne	Skerries	Ap. 26 cs
Hunter	Boston	Milner	Caen	London	founded	cs
Ironsides		Campbell	N. Orleans	Cork		Ap. 2, cs
Manico	London	Williamson	L. Hampton	Baltimore	39° N, 68° 20'	Mar. 29, cs
Mary Isabella	Whitehaven	M'Kenzie	Cardiff	Waterford	Lundy I.	Ap. 28, cs
Menal	115	Hamilton	Belfast	New York	lat. 45° lg. 39'	Ap. 7, cs
Olivia		M'Intyre	New York	Galway	Slieve Head	Ap. 28, 2 d
Robert		Seyers	Moulmein	Falmouth	False Bay	Feb. 11, cs
Romp		Jenkins			long. 9° 42' W.	5d
Salina			Glasgow	I. of Jura	Dunnet Bay	Ap. 17, 6d
St. Patrick	120 Liverpool		Liverpool	Sunderland		Ap. 17, 2d
Taurus	Leith	M'Donald	Leith	Riga	Lesso	Ap. 13, cs
The Rio	Liverpool	Halson	Liverpool	St. Petersburg.	Hertshall	Ap. 13, cs
Trefw Trader	Caernarvon	Roberts	Holyhead	Caernarvon	founded	Ap. 29, cs
Two Sisters	London	M'Iver			Wick Bay	Ap. 8, cs
Union	125 Whitehaven		Barrow	P. Talbot	Douglas Hd.	Ap. 28, cs
Verlumnus	London	Thompson	London	St. Petersburg.	Harbore	Ap. 13, 9 d

LOSS OF THE EXMOUTH.

OUR list of wrecks for the present Number presents a fearful but too true an account of the melancholy results of the late gales. We reckon from the 13th of April last no less than 273 sufferers whose "places here know them no more." Comment on the decrees of an allwise Providence is beyond finite reasoning, since his "ways are past finding out."

Although the painful facts relative to the loss of the Exmouth have been some time before the public, we think it a duty to preserve their record here, and to make such comments thereon as may serve the interests of humanity.

"The Exmouth, Capt. Booth of 320 tons, sailed from Londonderry for Quebec, between 3 and 4 o'clock on the morning of Sunday the 28th April. She had a crew of 11 men (inclusive of the master) and 240 emigrants, many were females and children, going out to join their fathers and protectors, who had already settled in Canada. The vessel was registered for 165½ passengers, but as two children count as one adult, a very large proportion were under age, there being only about sixty men amongst the passengers. The survivors of the wreck, who are our informants, think that the total number of these illfated emigrants must have amounted to 240. The ship lost sight of land on Sunday afternoon, the breeze, which had been light, in the morning increased to a gale, and about 11 P.M. came in terrific squalls with heavy torrents of rain; furlled fore and main sails, the wind veered from the west to northerly, and the storm increasing, the two topsails were blown from the bolt ropes. Set foresail and spanker, and commenced bending two other topsails, which were furlled, but at three in the morning were blown from the gaskets. The jib had been stowed, the larboard tack on board, and the ship was driving to the south-eastward. The reason of the master not standing to the

westward when the wind became northerly, and where he would have had ample sea room, was for the purpose of attaining some harbour of refuge where he might repair damages. On Monday (29) forenoon, the long boat was unshipped from the chocks by the force of the seas, which broke over the vessel, and in the course of the same forenoon the bulwarks were stove in and the life boat washed away. The gale continued with the same violence the whole of Monday night, and Tuesday 30th.

"At 11 o'clock on Tuesday night, land and a light were seen on the star-board quarter, which proved to be the Oransey, on the point of Rhims, of Islay, and the land seen, on which she eventually struck, was the Western coast of that Island. The master, on seeing his dangerous position, made every effort to repair it, with main topsail, and fore-topmast staysail set, and jib half hoisted, with a view of clawing her off the land, but it was ineffectual; the ship got amongst the broken water, and at half-past twelve on Wednesday (1st May) morning, was dashed among the rocks. She went on shore with all sails already mentioned, fully distended, and after striking once, was dashed broadside on alongside the rocks, which rose to the height of the mast-head. She struck violently against these rocks three times, and at the fourth stroke, the mainmast went by the board, and fell into a chasm of the rock. An hour and a half previously, when Mr. Booth observed his dangerous position, he took his station in the main-top, that he might personally keep a look out, and from this place, he occasionally gave his orders to the crew. As soon as the brig struck, the mate and all the seamen, eight in number, joined the master in the main-top, leaving the master's son, a youth about fifteen years of age, asleep in his cot. After remaining in the main-top about three minutes, five of the crew went down for the purpose of ascending the fore-top, at the same time, one of the crew went out upon the main yard, with a life buoy on his person, thus, leaving in the main-top, the master and three seamen, J. Stevens, W. Coulthard, and G. Lightford. We have said, that the main-top, along with the wreck of the mast, was thrown into a chasm of the rock; and immediately afterwards the three men scrambled up the top-mast rigging and obtained a footing on the crags. The master was about to follow, when a wave dashed over them as they clung to the rocks, but they were enabled to maintain their position, and when they looked round, after the sea had retired, they found that the master and all were gone!

"The main-mast had been broken into splinters by the fourth collision with the rocks, and this recoiling wave had not only dragged the ship, but the fragments of the mast which adhered to her by the rigging, into the sea, thus cutting off from the dense mass of human beings on board, every chance of escape. The ship was ground and crushed so frightfully amongst the rocks that she must have broken up almost instantaneously. There was no cry of despairing agony from the multitude of God's creatures cooped up within the hull of the illfated brig; the great mass must have perished in their berths as the rocks rapidly thumped the bottom out of the vessel, some of the bodies that have come on shore are fearfully mangled by being dashed against the rocks or jammed between the crevices with pieces of wreck. The belief is that the great mass of the poor creatures went down with the "between decks" of the ship, and will not be recovered until that part breaks up. According to the estimate, the number who have been thus suddenly called to their account is 248. The above narrative has been principally made from the statements of Stevens and Lightford."

From the above statement, it appears that the *Exmouth* had a crew of eleven men, including the master, and that her passengers were probably 240. These consisted chiefly of small farmers and tradesmen, with their families;

but a considerable number were females and children, who were on their way to join their fathers and other relatives already settled in Canada.

The vessel was registered for 165½ passengers, but as two children count for one adult, and a large proportion being under age, it is justly feared that the total number of the unfortunate emigrants thus cut off in the midst of their days and of deeply cherished hopes, that they should ere long "find a home beyond the western wave" is not overstated in the above estimate.

No blame seems to be ascribed to the master, except an apparent *deficiency in judgment*, and this charge, considering his life paid the forfeit, must be made with charity. "The reason of the master not standing to the westward, where he would have had ample sea room, when the wind became northerly was for the purpose of attaining some harbour of refuge, where he might repair damages and replace sails." Such is the account given by a contemporary, but had emigrant vessels, in which so many lives are perilled, a crew more adequate in *number*, as well as in skill to the performance of their duties, fewer sails would be blown away, and, without question, fewer lives sacrificed.

"For want of a nail," says the sagacious Franklin in his invaluable apophthegms, "the shoe was lost, for want of a shoe the horse was lost, and for want of a horse the rider was lost, being overtaken and slain by the enemy, and all for want of a little care about a horse-shoe nail."

So, for the sake of saving a few pounds in wages and provisions, to secure a competent number of efficient hands to do the duty on board an emigrant ship crowded with passengers, and therefore paying her owners handsomely, the *sails are lost*; for want of the sails the vessel is lost; and with the vessel hundreds of valuable lives, and a large amount of property. Expecting relatives are plunged into bitter distress, and also, in many cases, into extreme poverty by the loss of those on whom they depended for support.

Such, it may be feared, is but too frequently the cause of the calamity of shipwreck.

As great results often arise from small beginnings, so, in appalling contrast, we have overwhelming magnitudes of misery from a spirit of petty economy. The important question—How to reach the evil?—has yet to be solved. Victims, by thousands, perish annually; victims to the *inadequate finding* of the vessels that undertake their conveyance. Master, seamen, passengers, are all, perhaps, equally objects of compassion. The master, indeed, *it may be*, more than all,—For who can imagine the agony of a mind whose indiscretion or incapacity has plunged hundreds of his fellow beings into such gulphs of horror? and again,—What ought to be the feelings of those who either entrust incapable masters with the charge of their ships, or by an ill-advised and unprincipled penuriousness in relation to the number of the crew, render the abilities of the master almost nugatory? It were assuredly far more advisable, and ultimately far more profitable too, to send out fewer ships and better manned.

A VETERAN.—There is now a pensioner in that excellent institution, the Royal Hospital at Greenwich, named William Strickley, who has just completed his 101st year, having been born at Blandford on the 27th of April, 1746. He entered the navy in 1796, on board the *Emerald*, frigate, in the *Tagus*; was engaged in the battle off Cape St. Vincent, under Jervis; in the battle of the Nile, under Nelson; and at Surinam, under Sir Samuel Hood. He was admitted into Greenwich in 1827; and now enjoys good health and all his faculties, excepting that his eye-sight begins to fail him.

NEW BOOKS.

AUTO-BIOGRAPHICAL MEMOIR OF SIR JOHN BARROW, *late Secretary of the Admiralty.*—Murray.

It is impossible that such a Memoir as this should appear without exciting great and general interest. The public life of Sir John Barrow, extending over a period of our history distinguished by the most important events that can influence the destinies of a State, or modify its political relationships with other nations, would of itself send eager readers to its pages to glean whatever facts and opinions might be stored therein for the guidance and instruction of mankind, on points connected with our naval annals during the great and single-handed struggles of Britain for the preservation of her national existence.

But independently of the natural and just curiosity that may be expected to pervade many minds to know all, which a man placed for so long a period in an elevated official position, may see fit to communicate, a feeling yet more intimately connected with human sympathies, will be awakened by the age of the writer, and the motives which impelled him to write.

These motives are gathered from his preface, and do honour to his principles. The octogenarian chronicler retaining in his "green old age" the warm sentiments of earlier years, tells us that he had other motives for setting about his task. "The first to gratify the wish of his family, the second to gratify himself by taking a wide range in recalling the remembrances of long bygone years, the third (and certainly not the least admirable,) to express publicly the many acts of kindness and consideration experienced from numerous friends, especially from those to whose patronage he was indebted for the good fortune that had attended him through life."

The simplicity of the narrative commenced under such amiable impulses, will, we think, be regarded as one of its chief charms. An intelligent child would assuredly be pleased with it, as well as an intelligent man, and this characteristic in such a work, and from such a quarter, deserves high praise. All lessons of practical wisdom deduced from the experience of practical men, are infinitely more valuable when conveyed in language perfectly free from ostentatious ornament. The philosophy of Sir John Barrow's life, his cheerful "*Optimism*," as he properly and pleasantly styles it, is expressed more powerfully in the unvarnished incidents of his life, than in the maxims which he himself deduces from them; and this kind of instruction makes the most lively impression on all minds, be they young or old.

The Memoir is introduced by an interesting picture of the cottage in which the writer was born, and passed the years of childhood. This cottage was situated in the village of Droghleybeck, not far from Ulverstone, in North Lancashire.

"To the cottage," says the venerable narrator, were attached three or four small fields sufficient for the keep of as many cows, which supplied our family with milk and butter, besides reserving a portion of land for a crop of oats. There was also a paddock behind the cottage called the hemp land, expressive of the use to which it had at one time been applied, but now converted to the cultivation of potatoes, peas, beans, and other culinary vegetables, which, with the grain, fell to the labour of my father.

"At the bottom of the hemp land ran the beck or brook which gave its name to the village, Droghleybeck, a clear stream that abounds with trout. Contiguous to the village was also a small flower garden, which, in due time, fell

to my share, that is, while yet a young boy, I had full charge of keeping up a supply of the ordinary flowers of the season."

From this cottage and garden, and the "young boy" cultivating his flowers therein, issued the future secretary of the Admiralty! Such lessons as arise from a perusal of a life of this character, are, it may be repeated, fraught with wisdom. Here is no boast of high descent, except that which may be derived from ancestral *virtue*, and such stability of place as this often secures; the *cottage* is stated to have been in his mother's family *two hundred years*.

The early efforts of Sir J. Barrow, for the attainment, by his own industry and abilities—independence, and his success, will be read with great interest and advantage, by youthful aspirants after similar honourable objects.

Many instructive extracts might be made from this portion of the work, for the benefit of our younger readers; but the immediate purposes of this Magazine, will perhaps, now require that we transfer to our pages a passage or two from the author's life.

"Through the friendship of the late Sir George Staunton, (to whose son Mr. Barrow had been mathematical instructor,) he was appointed Controller of the household to Lord Macartney in his memorable Embassy to China. From this important epoch commences the public life of this distinguished and venerable individual,—one, as will appear from his Auto-biography, of almost unintermitting activity and observation. His remarks on China, its inhabitants, and its language, will be found full of interest and entertainment.

We quote the following—"Whatever credit we may be disposed to give the Chinese for their ingenuity in facilitating a communication between most parts of the empire by canals, it is not easy to comprehend what could have restrained them from affording the same facility by means of good roads, more especially in those parts that have no navigation, and in the northern districts towards the capital, where for three or four months all the canals and lakes are bound up in ice. The misery experienced by the Dutch embassy which travelled to Peking by land, would be almost incredible even in the least civilized countries. From a MS. journal lent me, the state of the country they were carried over was wretched in the extreme; thrust into little bamboo chairs, each borne by four men, so weak and tottering as to break down with fatigue, frequently in the middle of the night, where not a hovel of any kind was to be seen, their lodgings, were any, where so miserable, admitting the wind, rain, or snow, on every side, that they generally preferred to rest in their bamboo chairs, Van Braam, a jolly fat fellow, who, from the luxurious life of Batavia, underwent a state of starvation in China, writes to his friend that he had returned as thin as a shotten herring.

"All I can say is, that nothing could be more commodious and comfortable than the whole of the inland navigation on the grand canals, and on the rivers of China, from the northern to the southern extremity of this vast empire, and nothing could exceed the unremitting care of those great officers of state to whom the charge of the Embassy was entrusted, not to mention that of the Emperor himself."

Again—"The usual and most direct course to Canton is westerly by the Yang-tse-kiang, passing Nankin, and then against the stream to the Poyang lake, which is, in fact, an inland sea, and thence southerly against another stream flowing into it, but as some of our party were to join the Hindostan at the Chusan islands, to which the bay of Hang-choo-foo is directly opposite, we had kept along the canal which terminates at the latter place, and by so doing, had an opportunity of passing through the garden of China, and of seeing the two celebrated cities of Sao-choo-foo and Hang-choo-foo. The suburb of the former took us three hours before reaching the walls of the city, where a multitude of vessels were at anchor. The walls were crowded

with spectators mostly clothed in silk, the ladies in petticoats, not trousers, a black satin cap with a triangular peak extending to the nose, with a crystal button decorating the head; the cheeks highly rouged, and two vermilion spots like small wafers, very conspicuous one on the centre of the under lip, the other on the chin. The pleasure and the passage yachts were crowded with these well dressed ladies, which to us was quite a novel sight; the fair creatures having hitherto rarely condescended to afford us a look at their beauty."

The opinions which Sir John Barrow had an opportunity of forming of distinguished individuals of the Chinese nation during his abode there, and intercourses with them, will be read with pleasure. And equally entitled to regard are his observations on the Kaffirs and Hottentots, of whose general character he appears to have gained an important degree of knowledge during his subsequent residence at the Cape.

To these and many other parts of the Memoir, bearing on topics of great interests to the friends of humanity we shall hereafter return as opportunity may be afforded. In the meantime it is impossible to do otherwise than recommend the perusal of a publication embracing so many claims to favour on every ground that can render an Auto-biography truly valuable.

A JOURNEY ROUND THE WORLD.—By Sir George Simpson, Governor-in-Chief of the Hudson's Bay Company's Territories in North America, in 2 vols. Henry Colburn, Great Marlborough Street.

These volumes are replete with amusement to the nautical man, the man of science, and to the general reader. We have been deeply interested in what we have perused, and present to our readers two extracts which we trust will be considered worthy a place in the pages of the *Nautical Magazine*.

The Author's visit to Lahaina, one of the Sandwich Islands.

"I spent the greater part of the afternoon in company with the king. His majesty and suite dined with us on board the *Cowlitz*, where we had a very convivial party of about twelve. In the evening, I visited Kaluma, for whom I felt a lively concern; she is said to possess strong affections and many amiable qualities, while the suspicion with respect to her infants, more particularly as it is cherished by herself as well as by the world, could not fail to render her an object of interest and commiseration. She was attended by several female chiefs of high blood, among whom was the wife of the gigantic Paki. Of these women there are but few who can speak English, nor, indeed, are tongues essential to render those agreeable, who are such perfect mistresses of the language of the eyes. Even among themselves, I have watched the native belles, I might almost say by the hour, while they were carrying on an animated conversation in dumb show; and, whether it was that the teachers were apt, the task easy, or the pupil docile, I found that even a perfect stranger might be made to understand and practice the art after a single lesson.

"From all that I have observed, I cannot help thinking that a good deal of profound policy is displayed by the executive in the management of the chiefs. Kamehameha, as is well known, kept his grandees as much as possible under his own inspection, more particularly if they were supposed to be disaffected; and Kekauluohi and Kekuaanoa, the parties most deeply interested in the succession of Kinan's line, have contrived to improve on the great conqueror's plan by means of a division of labour, the latter holding fast the husbands, and the former monopolizing the wives.

After dark, the king, the premier, Mr. Richards, and myself, met at the
NO. 6.—VOL. XVI.

premier's, and, on this occasion, the papers already mentioned, were delivered to me. About 11 o'clock the king accompanied me to my quarters, where we spent the evening in great sociability and cordiality; and after we had got among the small hours, I returned with his majesty to the palace, where we found Haalilio engaged in study, with a large volume before him.

"The forenoon of Thursday, the 24th March, I employed in paying farewell visits. The premier was waiting my arrival, showily dressed for the occasion, and surrounded by all the peeresses of her court. She thanked me kindly for the interest I had taken in the affairs of her country, expressed an earnest wish to see me back among them, and desired her warmest regards to my wife, presenting to her, through me, a very handsome feather mantle, such as is worn only by royalty itself. Queen Kaluma, whom I next visited, likewise charged me with presents and good wishes for all the members of my family, obviously remembering her own bereavements when she spoke of my children.

"At noon, the king, the secretary, Keoni Ana, Mr. Richards, and others, accompanied me to the ship; and on our almost immediately getting under weigh, I shook hands with my very kind friends of the Sandwich Islands, exchanged salutes with the fort, and returned the three hearty cheers which the king and his party gave us from the boats." Thus much for the friendly islanders."

We make yet one more extract from this interesting work; the author's visit to Sitka.

"On the morning of the twenty-second day from Lahaina, we were roused from our lethargy by the cheerful cry of 'land,' and again came in sight of the rugged coast at the entrance of Norfolk Sound, with Mount Edgcombe in the north, and Point Woodhouse on the south of the opening. Mount Edgcombe, so named by Capt. Cook, is an excellent landmark for making the harbour of Sitka, rising from the water in the form of an almost perfect cone, and wearing a 'diadem of snow' nearly all the year round. Though, at present, it exhibits no traces of internal fires, yet it has been an active volcano during the residence of some of the present inhabitants of New Archangel; and many indications in the neighbouring country, such as earthquakes, hot springs, and occasional eruptions of smoke and ashes, tend to prove that the subterranean energy is not yet wholly extinct.

"Before plunging into this colossal empire, whose length is to occupy an almost uninterrupted flight, for journey I cannot call it, of about five months, let me indulge in a brief retrospect of such portion of my wanderings as I have happily accomplished. I have threaded my way round nearly half the globe, traversing about 220 degrees of longitude, and upwards of 100° of latitude; and in this circuitous course I have spent more than a year, fully three-fourths on the land, and barely one fourth on the ocean.

"Notwithstanding all this, I have uniformly felt more at home, with the exception of my first sojourn at Sitka, than I should have felt in Calais. To say nothing of always having found kindred society, I have every where seen our race, under a great variety of circumstances, either actually or virtually invested with the attributes of sovereignty. I have seen the English citizens of a young republic, which has already doubled its original territory, without any visible or conceivable obstacle in the way of its indefinite extension; I have seen the English colonists of a conquered province, while the descendants of the first possessors, however inferior in wealth and influence, have every reason to rejoice in the defeat of their fathers; I have seen the English posts that stud the wilderness from the Canadian lakes to the Pacific Ocean; I have seen English adventurers, with that innate power which makes every individual, whether Briton or American, a real representative of his country,

monopolizing the trade, and influencing the destinies of Spanish California; and, lastly, I have seen the English merchants and English missionaries of a barbarian archipelago, which promises, under their care and guidance, to become the centre of the traffic of the east and west of the New World and the Old. In seeing all this, I have seen less than half of the grandeur of the English race.

"How insignificant in comparison are all the other nations of the earth, one nation alone excepted. With the paltry reservation of the Swedish Peninsula, Russia and Great Britain literally gird the globe where either continent has the greatest breadth—a fact which, when taken in connexion with their early annals, can scarcely fail to be regarded but as the work of a special Providence. Hardly was the Western Empire trodden under foot by the tribes that were commissioned for the task, from the Rhine to the Amoor, when He, who systematically vindicates His own glory by the employment of the feeblest instruments, found in the unknown wilds of Scandinavia the germ of a northern hive, of wider range and loftier aim. At once, as if by a miracle, a scanty and obscure people burst on the west and the east, as the dominant race of the times; one swarm of Normans was finding its way through France to England, while another was establishing its supremacy over the Slavonians of the Borysthènes, the two being to meet in opposite directions at the end of a thousand years.

"It is in this view of the matter that I have in these pages preferred the epithet *English*, as comprising both *British* and *American*, to the more sonorous form of *Anglo-Saxon*. The latter not only excludes the true objects of divine preference, but also in excluding the Normans, it loses sight of the co-operation of Russia as the appointed auxiliary of England, in promoting, perhaps by different means, the grand cause of commerce and civilization, of truth and peace. Reflecting on the common origin and common destiny of Russians and Englishmen, I ought to feel that I am still to be among friends and kinsmen. Even the very difference of language, while practically it makes me a stranger, serves to confirm my deductions.

"In addition to the permanent conquests already mentioned, the Normans, as a mere episode in their history, rivalled Grecian and Italian fame on the soil of Italy and Greece; and yet though uniformly victorious in all the climes of Europe, they were never numerous enough to engraft their own speech on that of those whom they subdued. This unparalleled and incredible success cannot be otherwise explained than by believing that the Normans were every where strengthened by the Almighty to accomplish the universal purposes of His omniscience."

We could say much more, but leave the work to speak for itself, resting assured that all who read it, will not be sorry for having accompanied Sir George Simpson in his "Journey round the World."

THE PHYSICAL ATLAS, NO. VI — *A series of Maps illustrating the Geographical Distribution of Natural Phenomena*, by H. Berghaus, L.L.D., and A. K. Johnston, F.R.G.S., &c. London: Johnstone, Paternoster Row, 1847.

THERE is nothing like a map for clear downright illustration: a picture is at once conveyed to the mind of the comparative features and the relative positions of different objects and phenomena of our globe, such an one as would take pages of description to convey. To our taste, Professor Berghaus, with a happy invention, has admirably succeeded in mapping a vast quantity of useful and highly interesting information. We shall not stop to trouble the seaman with any remark on the first map of the present number of this valuable work, although, by a neat arrangement of Professor Berghaus, it shews

immediately the remarkable feature of the highest mountains of the globe, (those of India and Mexico,) being nearly on opposite sides of it. But we turn at once to the next, a map of the Indian Ocean. Assuredly this contains much to interest the intelligent seaman, not with reference to rocks and shoals, but that branch of professional knowledge which equally concerns him, the study of currents and winds. Much of these important subjects is tabulated for his especial reference in the map before us. The limits and direction of currents of sea and air, and the seasons in which they prevail, are here neatly and elegantly expressed; and although we do not like the expression of "passage wind" for the old time-worn and homely word "monsoon" or "trade," we heartily commend this number with the former to the attention of seamen. It is with no little satisfaction that we find our own pages have contributed much towards Professor Berghaus's stock of information, so neatly condensed into the map before us, so that many of our esteemed contributors may see that their observations are not only read by seamen afloat, but men of science ashore, who condense them in return into a useful shape for the benefit of their authors.

THE ELEMENTS OF SAILMAKING.—*Being a complete Treatise on cutting out Sails, &c.* By Robert Kipping. Part 1, London, Norie and Wilson, 157, Leadenhall Street.

An excellent little treatise, developing the whole art and mystery of Sail-making as adopted in the Merchant Service, is here designed by the principal sailmaker of the port of Newcastle-upon-Tyne, and the first number of which is now before us. We can confidently recommend it to the attention of seamen, as giving the rules exemplified by cases for cutting out sails of all kinds on the best founded principles.

NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

- CHIRIQUI LAGOON, *with views.* Capt. Barnett, RN., 1839. Price 3s.
 " " TIGER CHANNEL, *with views.* Capt. Barnett, RN., 1839. Price 2s.
 " " CRAWL CAY AND SHEPHERD HARBOUR. Capt. Barnett, RN., 1839. Price 2s
 " " BOCO DEL TARO AND BOCO DEL DRAGO. Capt. Barnett, RN., 1839. Price 2s.
 HONDURAS GULF, NEGRO HEAD TO TURNEFF CAYS. Capts. Barnett and Smith, 1830-41. Price 3s.
 TORRES STRAIT, North-East Entrance. Capt. Blackwood, 1845. Price 2s. 6d.
 VIEWS OF HONG-KONG. Lieut. S. G. Heath, H.M.S. Iris, 1845. Price 3s.
 CARPENTARIA GULF, Southern part of. Capt. Stokes, 1841. Price 2s.
 TROON HARBOUR, West Coast of Scotland. Capt. E. G. Robinson, 1841. Price 6d.
 SKETCH OF THE RUINS OF PÆTUM, from a Neapolitan MS. Price 6d.
 MOUTHS OF THE PONGA RIVER. Capt. Sir E. Belcher, 1830. Price 2s.
 BIJOUGA ISLANDS, Sheets 1, 2, and 3. Capts. Owen, Belcher, and Demham, Baron Roussin and Lieut. Arlett, 1826 to 1846. Each sheet, 2s.
 MASANGZANI BAY TO PREMEIRA ISLANDS, Sheet 3. Capt. W. F. Owen. Price 2s.
 MOZAMBIQUE TO POMBA BAY, Sheet 5. Capt. W. F. Owen. Price 2s.
 CAPE DELGADO TO QUILOA, Sheet 8. Capt. W. F. Owen. Price 2s.
 CHALA POINT TO KYOYHO BAY, Sheet 11. Capt. W. F. Owen. Price 2s.
 IBO HARBOUR. Capt. W. F. Owen. Price 6d.
 COCKBURN, GEORGE, AND CHAKCHAK PORTS, Lieut. Nash, 1825. Price 6d.

TABLE SHewing THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stubbington, near Fareham,
Hants.—April, 1847.

Day of Month	A. M.												P. M.											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
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2						AN					N													
3						AN																		
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5	13	3	3	5	10	10	10	12	20	20	2	17	17	17	17	17	15	10	17	17	20	12	15	15
6	20	17	12	10	10	15	20	25	12	12	10	17	10	10	10	10	12	12	15	10	17	17	12	5
7	12	10	11	13	15	15	15	15	15	20	22	17	12	15	20	15	10							
8	12	17	17	22	22	17	15	15	30	40	40	25	35	35	32	35	30	22	32	40	40	37	37	30
9	30	32	32	30	27	27	27	27	32	30	37	37	32	30	30	25	22	22	20	25	25	22	15	12
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PROMOTIONS.

May 5.—The Queen has been pleased to direct letters patent to be passed under the Great Seal, granting unto Admiral the Hon. Robert Stopford, esq., the office or place of Vice-Admiral of the United Kingdom of Great Britain and Ireland, and Lieutenant of the Admiralty thereof, in the room of Admiral Sir David Gould, deceased.

The Queen has also been pleased to direct letters patent to be passed under the Great Seal, granting unto Admiral Sir Thomas Byam Martin, esq., the office or place of Rear-Admiral of the United Kingdom of Great Britain and Ireland, and of the Admiralty thereof, in the room of Admiral the Hon. Sir Robert Stopford, appointed Vice-Admiral of the said United Kingdom.

Admiralty, May 13.—The following promotions have taken place consequent on the death of Admiral Stephen Poyntz:—

Admiral of the Blue—Henry Richard Glynn, to be Admiral of the White.

Vice-Admiral of the Red—The Right Hon. James, Marquis of Thomond, esq., to be Admiral of the Blue.

Vice-Admiral of the White—Sir Edward Durnford King, Kt., esq., to be Vice-Admiral of the Red.

Vice-Admiral of the Blue—Matthew Buckle, to be Vice Admiral of the White.

Rear-Admiral of the Red—The Hon. George Elliot, esq., to be Vice-Admiral of the Blue.

Rear-Admiral of the White—John Ayscough, to be Rear-Admiral of the Red.

Rear-Admiral of the Blue—James

Whitley Deans Dundas, esq., to be Rear-Admiral of the White.

Captain Edward Wallis Hoare, to be Rear-Admiral of the Blue.

The following promotions of Flag-Officers, consequent on the deaths of Admirals Sir Davidge Gould, and Man Dobson have been Gazetted:—

Admiral of the Red, from the White—Thomas Le Marchant Gosselin, 1841.

Admirals of the White, from the Blue—John Cochet, 1841—Sir Charles Ekins, esq., 1841.

Admirals of the Blue, from Vice-Admirals of the Red—Hugh Downman, 1837—The Hon. Sir Thomas Bladen Capel, esq., 1837.

Vice-Admirals of the Red, from the White—Henry Hill, 1841—Alexander Wilmot Schomberg, 1841.

Vice-Admirals of the White, from the Blue—John Dick, 1846—Peter Ribonleau, 1847.

Vice-Admirals of the Blue from Rear-Admirals—Charles Bayne Hodgson Ross, 1837—Sir Charles Malcolm, esq., 1836.

Rear-Admirals of the Red, from the White—Hood Hanway Christian, 1838—Sir Josiah Coghill Coghill, Bart., 1841.

Rear-Admirals of the White, from the Blue—Hyde Parker, esq., 1841—Charles Sibthorpe, John Hawtayne, 1841.

Rear-Admirals of the Blue, from the rank of Captain—Henry Prescott, esq., 1810—Sir Niabet Josiah Willoughby, esq., esq., 1810.

APPOINTMENTS.

Rear Admiral of the Blue.—Sir Charles Napier, k.c.b., 1846, to the command-in-chief of the Channel Squadron.

Captain.—Hon. G. J. Brydone Elliot, 1841, steam factory, Woolwich.

Commander.—James George Mackenzie, 1847, to Caledonia, 120.

Mate.—Arthur Warre, to Hibernia.

Midshipmen.—Thomas Green, and Arthur Bayley, to Howe, 120.

Masters Assistants.—W. B. Shillabeer to Howe; Charles Renny, to Athol; Francis M. Anderson, to Victory; John Rogers to Caledonia.

Chaplain.—Rev. Thomas G. Gallway, to Terrible.

Surgeon.—Robert M'Crea, 1841, to Growler.

Assistant Surgeons—Acting.—Charles S. Hugo, and John J. Johnson, to Victory.

Clerks.—Harry Thomas Nettleton, in charge to the San Josef, receiving ship, J. G. Simmonds, to the Caledonia, vice Nettleton; H. M. Scarfe, to the Victoria and Albert, steam-yacht.

Naval Cadets.—W. J. S. M. Molyneux, to Avenger, steam frigate; John W. Lamba, J. S. Reysell, W. H. Gould, to Caledonia.

BIRTHS, MARRIAGES, AND DEATHS.

Births.

May 3, the wife of Capt. M. C. Bunbury, R.N., of a son.
On the 28th of April, the wife of Lieut. Walter Francis Robinson, R.N., of a son.

Kate, only daughter of the late Captain Filmore, R.N.

Deaths.

On the 28th of April, at Brunswick Place, Stoke, Lieut. John Potts, R.N.
On Saturday last, in Morice-street Mr. White, late foreman of the stone-house in Devonport Dockyard, aged 74, years.

Marriages.

April 27, at Greenwich, W. Wilson, Esq., barrister-at-law, Inner Temple, to

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory, From the 21st of April, to the 20th of May, 1847.

Month Day.	Week Day.	Barometer		Fahrenheit Thermometer				Wind.				Weather.		
		In Inches and Decimals.		In the Shade.				Quarter.		Strength.		A.M.	P.M.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	A.M.	P.M.	A.M.	P.M.			
		In Dec	In Dec											
21	W.	29.96	29.98	47	55	36	56	N	NW	1	3	bcm	o	
22	Th.	30.07	30.05	46	53	38	54	NE	NE	3	3	bc	bc	
23	F.	30.02	30.00	45	54	32	55	E	N	2	2	bc	b	
24	S.	29.98	29.96	46	55	33	56	N	NE	2	2	bcm	b	
25	Su.	29.94	29.94	43	59	34	60	SW	SW	2	3	bm	bc	
26	M.	29.77	29.79	50	54	45	55	SW	W	6	2	qor 2)	o	
27	Tu.	29.64	29.70	54	57	44	58	W	W	7	6	qbc	qbc	
28	W.	29.71	29.63	53	56	43	57	SW	SW	6	6	qbc	qbcphr 3	
29	Th.	29.54	29.56	51	53	41	54	W	SW	5	5	qbcphr 2	qbcphr 3	
30	F.	29.66	29.68	48	47	40	53	W	W	3	4	bcm	bcp 3	
1	S.	29.83	29.74	46	56	34	56	W	SW	3	4	bc	or 4	
2	Su.	29.54	29.58	50	58	43	59	S	S	2	2	bcp 2)	bcp 4	
3	M.	29.75	29.75	43	43	37	50	NW	NW	4	3	ophr 2	ophr 3 4	
4	Tu.	29.82	29.82	46	50	40	52	NE	NE	3	3	bcp 1 3	bc	
5	W.	29.71	29.68	47	56	38	58	E	S	2	2	bc	bc	
6	Th.	29.70	29.68	50	60	42	60	S	SW	2	3	bc	bc	
7	F.	29.65	29.62	57	59	43	63	SE	SE	5	3	qbc	op 3 4	
8	S.	29.36	29.32	53	59	49	60	SE	SW	5	2	qor 1 2	o	
9	Su.	29.76	29.79	55	63	47	65	SW	SW	4	2	bcp 2	bcp 4	
10	M.	29.77	29.78	54	66	47	67	SW	SW	2	2	b3	bc	
11	Tu.	29.56	29.60	53	62	50	64	NW	SW	1	2	or 1	bc	
12	W.	29.67	29.67	58	64	46	65	SW	S	3	3	bcmp 2	bc	
13	Th.	29.81	29.82	57	64	44	65	SW	SW	2	3	bc	bcp 4	
14	F.	29.82	29.83	59	63	50	64	SW	SW	4	4	bc	bc	
15	S.	29.95	29.91	58	66	50	67	SW	SW	3	3	bc	ber 4	
16	Su.	29.60	29.62	54	62	52	52	SE	SW	2	5	or 2	qbop 4	
17	M.	29.86	29.94	58	66	51	67	W	W	3	3	bc	bc	
18	Tu.	29.97	29.86	61	67	50	68	SE	SE	2	2	bcm	or 4	
19	W.	29.86	29.90	57	65	47	66	SW	SW	5	5	qbc	qbc	
20	Th.	29.80	29.86	58	65	51	66	SW	SW	5	5	qbc	qbop 3	

APRIL 1847.—Mean height of the Barometer = 29.755 inches; Mean temperature = 44.3 degrees; depth of rain fallen = 0.86 inches.

TO OUR CORRESPONDENTS.

We have received our RAMSGATE FRIEND'S LETTER; his interesting communication in our next, we shall always be happy to here from him.

MR. ALEXANDER'S letter is also in reserve.

PASSED MASTERS AND MATES IN THE MERCHANT SERVICE, arrived too late for insertion in the present number, the list shall appear in our next,

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

JULY, 1847.

GREAT CIRCLE SAILING.

Liverpool, 4th May, 1847.

SIR.—I have been much pleased with the perusal of the communication, on Great Circle Sailing, in your Magazine. It is kindly written, and evidently by a person who has considered his subject. His ideas on the topic are good, but not yet fully developed.

All writers on the subject, that I have met with, Robertson, Raper, &c., and your correspondent, speak only of navigating the curve or the chords of the curve. Now, the generality of curves are impracticable in this manner. Many persons have, consequently thrown Great Circle Sailing up in disgust, without any farther inquiry. My opinion is, agreeably to the examples given in my pamphlet, that the advantages of Great Circle Sailing lie in navigating the *space* between the curve and the rhumb, thus forming a combination, in the calculations, of plane, parallel, Mercator's, and Great Circle Sailing, all going hand in hand, and reciprocally checking and proving each other.

Your correspondent speaks of navigating a vessel on a series of great circles. This would lead to endless calculation; besides navigating the *space of the curve* from the point of departure to the point of destination, on the *most advantageous courses*, amounts to much the same thing as chording a series of Great Circles. I have not yet seen Mr. Towson's Table of Inspection.

Your correspondent's remarks on Windward Great Circle Sailing are sterling; the same ideas apply to Storms; thus, on long stretches, as from New Zealand, round Cape Horn, or from the Cape of Good Hope to Van Diemen's Land, a vessel meeting with stormy weather, might

stand on the southward tack, or northward tack, according to circumstances, if she can carry canvass, and by changing her latitude a couple of degrees, might get rid of the storm, and fall in with a favourable breeze, in another current of wind. As to the supposition of having the same wind all the way on so long a voyage, is a proposition worthy of an "I demand" schoolmaster.

I have been round the docks of Liverpool, and have been on board half the vessels in the Port, and am surprised at the indifference shewn by captains on the subject. The greater part did not appear to know any thing of the matter; a very few knew it superficially. One said, "What is the use of this?" meaning the chart, and "What is the use of these figures?" Another remarked that the book was too small, and another said, "That is of no use to me, I've got Horsburgh." I went on board an American vessel, the mate of which, in true Yankee style, said, "Oh—we can navigate across the Atlantic without a pamphlet." These rebuffs, induced me to consider what could be the cause of this indifference; it may be the Title page, I thought, "Great Circle Sailing." They may imagine that it is similar to Current Sailing, Oblique Sailing, &c., which are in every book on Navigation, and to which practical men seldom refer. "What's in a name?" there is certainly something in a name.

I have, therefore, changed the title to "Fairways of Oceans, on Great Circular Principles.—A companion for Charts and Sailing Directions; or Great Circle Sailing, with its practical advantages," which is a more appropriate title for the contents of the pamphlet. And yet it teaches great circle sailing, as by a side wind.

I remain, &c.,

W. C. ALEXANDER.

P.S.—Steam navigation across the Atlantic has been the cause of inquiry into the merits of Great Circular Navigation, which, according to your correspondent, has been neglected since Mercator's projection of Charts was introduced; and it has been the means of bringing several branches of the sciences into active operation, that formerly lay dormant.

To the Editor N.M.

ACCOUNT OF AN EXPLORING EXPEDITION TO THE SOUTH-WEST OF NELSON.

(Continued from page 306.)

THE tribe of the Ngatitumatakokiri, to which those people belonged, was the most powerful on the north end of the Middle Island; and was located from the Pelorus river to the Motuaka, Massacre Bay, and the western coast, the principal pass being in the Waimea, on the sandflat near the Snapper-fishing ground at Wakatu, where the trenches are still observable, at the Moutere, and at Kaiteiteri. From these several places the inhabitants were driven inland by the Taranaki tribes, assisted

by Rauparaha; and at the termination of the war only three men remained of the tribe, they being E. Kehu, our guide, Pikiwati, who accompanied the late Mr. Cotterell on his expeditions, and another, a slave at Motuaka.

The cultivations of the natives of this tribe were very few, as they had not obtained the potato before their dispersion. Dissimilar, in consequence of this, to the generality of the natives of the Middle Island, they were well acquainted with the interior of the country, where, in fact, half their time was passed in the search for birds and eels. E. Kehu, our guide, is thus a perfect bushman, and is of very great service on an expedition: he has none of the sluggishness of disposition so common to the Maori, but is active and energetic, displaying far more of the characteristics of the Indian savage than are to be seen in the usual lazy inhabitants of a pah; thoroughly acquainted with the "bush," he appears to have an instinctive sense, beyond our comprehension, which enables him to find his way through the forest when neither sun nor distant object is visible, amidst gullies, brakes, and ravines in confused disorder, still onward he goes, following the same bearing, or diverging from it but so much as is necessary for the avoidance of impediments, until at length he points out to you the notch in some tree, or the foot-print in the moss, which assures you that he has fallen upon a track, although one which he had not been previously acquainted with. A good shot, one who takes care never to miss his bird, a capital manager of a canoe, a sure snarer of wild-fowl, and a superb fellow at a ford, is that same E. Kehu; and he is worth his weight in tobacco.

10th.—We this morning commenced our exploration, having been until now upon a known route. At our last night's encampment we left thirty-five pounds of flour, with other provisions, for our return, and for the first time had our loads materially lightened. To outwit his old enemies, the rats, E. Kehu buried the provisions, nicely lining the hole with bark, and covering the place over with ashes; a proceeding which we certainly should not have decided upon for security against burrowing animals, but which he knew was effective.

We proceeded up the bed and shingle banks of the Howard, taking its right branch, travelling among some highly picturesque grass and manuka ridges on a course to the S.S.W. for the Roturoa lake, between which and our dining place, our guide informed us was a very high hill, which we must ascend that afternoon or the next morning, and the clambering of which would cause us to be *matemoi*, or "kilt" with the fatigue of carrying such loads as we still had. The better to make us understand his meaning, and for the purpose of illustration, he would, in mimicry of one of us, pretend to take a few steps up a steep acclivity, then suddenly stop to take breath, and supporting himself with his hands on his knees in a stooping attitude, would look with most rueful countenance upward, gasp a little, make a desperate rush onward for a few steps, and fall as if exhausted, saying, in conclusion, that the mountain was "no good!" "too much!"

With this pleasant prospect before us, we left the stream at about three miles from our last encampment, having made an early dinner, in

consequence of being assured that we should meet with no water on the mountain, and commenced the ascent of the wooded mountain to our right, still keeping much the same bearing of S.S.W. The forest was of black birch, almost the only timber in these high elevations, nearly devoid of underbrush, and the ascent steep only in places occasionally, but still long and wearisome, still upward and upward! But this was not E. Kehu's "big hill," only a little one in comparison to it. "By-and-by, you see," was the consoling answer to all our interrogatives as to when the ascent of the main ridge was to be commenced, until at length, when we appeared to have reached the elevation of the highest hills around, our guide told us to halt; he had circumvented the "big hill," and we would have no farther to ascend. He had, in fact, found a new ridge by which to gain the summit of the mountain-range, and, by heading a deep ravine, had avoided the necessity of descending into the hollow, and reascending its opposite side. The distance, travelled this day, from the grass plains was about eight miles; and the path, one along which pack mules might be taken, without much difficulty.

11th.—After walking about a mile this morning, we perceived that the greatest elevation had been attained; and the native, pointing downward, showed us the lake of Roturoa, which appeared indistinctly through the foliage, far beneath us. We hurried down the steep ridge to the lake, occasionally catching glances of various parts of the long expanse of water through the birch forest as we descended.

Similar to the Rotuiti, the hills at the large lake descended steeply to the water's edge on both sides, leaving but occasional shingle beaches along its margin.

The lake appeared about twelve miles long, with an average breadth of one mile. The point at which we had come upon, was about a mile and a-half from its north-western extremity, whence flows the river Gowan to its junction with the Buller, or large western river, which descends through the Devil's Grip and grass valley from the Rotuiti lake. After receiving the waters of the Gowan, the large river keeps a mean course of W.S.W., and having been augmented by the waters of the Tiraumea, Matiri, and Otawpawa, must meet the sea to the south of Cape Foulweather.

Just at the spot at which we had come upon the lake, and under some bushes, was a small canoe, which had been constructed by the natives, when at the Roturoa last year. It was speedily launched, and, with ourselves and our packs, was so loaded as to render it doubtful whether we could cross the lake in it without its swamping. Away, however, we paddled, being obliged to observe the greatest nicety of balance to prevent oversetting; for the canoe being a *tiwai*, or one without top-sides, took in the slight ripple to windward; and as we looked down and caught sight of the rocky bottom of the lake, some forty feet below, which we could see through the transparent water, thoughts arose concerning the impropriety, not to say inconvenience, of leaving our bones in such a locality.

Certainly, it was a new method of exploring, and we enjoyed the ease of it exceedingly. As we left the shore, the whole expanse of the lake

became visible, with its densely wooded shores, and the high snowy mountain-range at its head, in its wild grandeur, closing the view. Grebes and divers, with other water birds, were floating about on the surface, nor did the instability of our shallop deter us from getting a shot at them. Then away would rattle a flock of wild-fowl, their noise being the next moment followed by the various echoes of the report reverberated from the hills.

The native now allowed the canoe to glide down with the waters of the Gowan, where they left the lake; and we passed rapidly beneath a handsome white pine forest on the river-bank: immediately after which, the canoe was put in towards the northern bank, and we landed on a grassy opening of about thirty acres, surrounded by black birch wood and manuka. Here the natives had formerly built a house, and endeavoured to grow some potatoes on a small patch of cleared ground, where, however, the rats soon ate the seed. It was one of their favourite eel fishing stations, and we had every prospect of an abundance of excellent provision from the lake and river, during our stay at the Roturoa.

We encamped on the immediate edge of the river; and as soon as dark, two of the party, with E. Kehu, took the canoe to the opposite side of the river, where, mooring it to a flax bush, they commenced fishing, or, more properly, endeavouring to fish, for between the two they found a wide difference. The Maori watched the eels at the bottom, and putting the bait in their way, had them the next moment in the canoe, splashing the more unfortunate sportsmen, who still had nothing but nibbles. After supper, when we had relinquished the sport, he re-crossed the river, and, to dispel all feelings of lonesomeness, commenced chanting his Wesleyan missionary service, mixing with the translated version of the ritual, special incantations to the Taipo of the lake and river, for propitious weather and easy fords, together with a request to the eels to bite quickly, and not keep him longer in the cold. Then, as he caught one which would not die quick enough to please him, would he introduce some decidedly uncomplimentary language, which he had learnt at a whaling station, and again subside into the recitation of his Wesleyan catechism and hymn-book, bringing in our various names in the versification. He did not leave off until long after we were asleep; and in the morning when we awoke, four fine eels were roasting for breakfast, and other four were hanging from an adjacent tree.

12th.—Having determined to spend a day at the Roturoa, we commenced equipping our canoe for the intended trip along the lake. Three paddles were quickly cut out of a tree, and we started for a day's pleasuring on the "large lake," or, as we named it, Lake Howick. Forcing the canoe briskly against the strong current of the river, we were soon past its influence, and on the still water of the lake. Landing the native on a fern hill, near the Gowan, for the purpose of shooting pigeons, we proceeded in the canoe along the southern side of the Howick, paddling close to the overhanging forest of birch and rimu, which covered the adjacent hill sides and reflected its beautiful foliage in the still lake. The motion of a canoe is not unsuitable to the proper enjoyment of such

a scene, nor is the labour of paddling such as to cause fatigue. Occasionally would we dash along to the time of some animating chorus, and then, withdrawing our paddles, suffer the canoe to glide silently past a point beyond which we should obtain a new and more extended view of the lake. At other times, we would steer out into the middle of the lake, endeavouring to near a grebe, or seeking for a fresh point of view for sketching the surrounding shores, discussing the while, the practicability of ascending, at some future time, the great chain of the "Southern Alps," which tower over the eastern end of the Howick, and divides it from the Rotuiti and Port Cooper countries.

At a small beach, about six miles from our morning's encampment, we landed for the purpose of cooking our dinner, which consisted of a pigeon and some damper. Discussed the probability of the Howick becoming the future resort of East Indian diseased-liver invalids; of the propriety of having pleasure-boats on the lake, with a Tontine Hotel at Gowan, and mules for excursions to the surrounding mountains and points of view. Spirit of Pic-nics, here should thy temple be!

Before our dinner was well over, the heavy clouds, gathering over the lower end of the lake, warned us to hasten our return; and before we had paddled a mile on our way back, the wind had increased to such a degree, that, with our heavily laden canoe, the "sea," which arose, added neither to our pleasure nor safety. We, however, crept along close in shore, putting her bow on whenever the waves were threatening, and at length reached our new encampment, which we had formed on the southern shore, in order to be ready to proceed at once on our way to the Tiraumea on the next morning. On our way back, we landed for E. Kehu, whom we had left on a fern-hill to shoot pigeons, and who had killed six and a wood hen.

In the course of a day and a-half, we obtained at the Roturoa, without any trouble, six pigeons, four blue ducks, ten eels, and four wekas, or wood hens, the last being snared by the native. The method of catching these birds is singular and amusing. The native, when in a locality which he thinks likely to be frequented by wood hens, imitates, with a whistle made of a flax leaf, the cry of the bird, which somewhat resembles the call of a partridge. If one be within hearing, it will answer, or more generally, several will respond to the cry, and the native, listening for a moment attentively, informs you of their number and position. Breakfast or dinner may then be cooked and disposed of, the wekas, saving the trouble, being as good as caught, and forming an exception to the rule contained in the old proverb of "a bird in the hand," &c. When at leisure, the Maori provides himself with two slight sticks or canes, of the lengths of about 4 and 6 feet. To the end of the shorter he attaches a bunch of feathers, or even leaves, and to the longer, a small running noose of flax, and with these, proceeds in the direction whence the sound came. When he considers himself near enough he stops, and crouching down amongst the underwood, but without caring to be concealed, imitates the more familiar call of the bird, by a peculiar grunting sound made in the throat. In a short time the wood hen appears, and the native rustles the feathers at the end of his stick, making a chirping

noise in unison, and the weka, mistaking the moving object for a bird, is led by the pugnacity of its disposition to attack it; in advancing to do which, the noose is quietly put over its head, and with a jerk upward, it is caught alive.

13th.—Laundry work disposed of—fine “drying weather.” Proceeded from our encampment on the Roturoa for about three miles in a S.S.W. direction, through a pass towards the Tiraumea valley, which was the next locality to be visited, when we were obliged to encamp by a change in the weather. Put up a blanket-house, which we subsequently considerably enlarged and improved, by adding to it walls and back of bark stripped from the surrounding birch trees. Amused ourselves with the pursuit of comfort under difficulties.

14th.—Fine. After ascending slightly for about a mile, found the water flowing to the southward, and proceeded down a ravine to the S.W., walking in the bed of the stream, or through tangled underbrush, for about six miles, at which distance, we emerged upon a grassy valley of inconsiderable extent. Walked on through deep swamp-grass, and in the river-bed, for two miles more, and encamped; the principal valley of the Tiraumea, being about two miles and a-half to the southward, and a high bare-topped mountain, called, by the natives, Tahuatao, visible through an opening due north. From this mountain the Rotuiti and Nelson countries can be seen, and it immediately overlooks the course of the Buller, or “large western river,” through the Devil’s Grip, and its continuous gorges.

15th.—Walked two miles and a-half down the bed of the stream to the open part of the Tiraumea. This valley, or rather series of valleys, was the first open or available country, which we had seen since leaving the Rotuiti plain; the intervening country being, in the more elevated situations, covered with black birch forest, and lower down, as on the shores of the Roturoa, with that wood, manuka, and the various pines; the whole extent being of such a hilly nature, as to render it unfit for cultivation.

THE CINQUE PORTS AND THEIR LOCALITIES.

(Continued from page 302.)

I regret that I did not request the authorities (both printed and oral,) upon which the information of my Belgian friends rested. I was then a young man actively employed in the packet service from London to Ostend and Antwerp, from the years 1815 to 1820. My Antwerp friends and Mr. Belrocke of Ostend are long since dead, and I have been away from that locality more than thirty years; however, the subject arose thus:—I remarked the very singular names of many of the shoals then so dangerous to the navigation. One, for instance, the Pied Mart, or Horse Market; and they assured me of the certainty of its having been a horse market in very olden times, but that still greater changes than that are recorded as having taken place at two remote periods.

One about the time of Edward the Confessor, when a group of islands* in the German Ocean were entirely swallowed up by a tempest and earthquake. Another in the reign of William Rufus, which completed the ruin, and entirely submerged what remained of the low fertile islands of the German Ocean, leaving a solitary rock, now the island of Heligoland, surrounded by the destructive element. Also, that the first awful visitation destroyed Godwin, and other islands near the British shore, changed the mouths of rivers and estuaries, destroyed many towns and villages, and multitudes of people perished. Now, as this account tallied with the oral traditions of the Cinque Ports, I was induced to collect them, and in 1832, at the request of Mr. Charles Lemon, deputy-keeper of the State papers, and other distinguished antiquaries, I published them. They had the effect I desired and anticipated, they set others inquiring, who had greater means and time for investigation; and I have since been assured by very eminent geologists, &c., that, in pursuit of their researches, per example, in the Isle of Thanet, there exists a central or clinal angle, from which the whole of its outscarp or chalk barrier has dipped toward the sea, and that at no very remote period, (geologically speaking,) as the flint lines of strata show distinctly the amount of subsidence where they are broken asunder like glass or pottery, and their lateral inclination disturbed. This circumstance was noticed in the Society's Transactions about six years ago, and two of the members conferred with me verbally upon the subject, when they were of opinion that evidence of earthquake† existed in our chalk cliffs, occasioning a dip or depression from Ramsgate cliff, and in the Sandwich Basin, of at least 50 feet; and carrying thus outward in the line of the Goodwin Sand, it would submerge that shoal 60 feet. Now, taking the vertical rise of the highest tides in our locality at 18 feet, and admitting the altitude of the chalk strata to be again restored, we should have Goodwin Isle 40 feet above the level of high water. Now, if the causes producing this shoal were gradual, a greater alteration would take place in its level; but charts of very ancient dates, compared with our present surveys, show no change. On Friday evening, the 27th September last, I was in the globe which surmounted the Trinity Beacon on the Goodwin; Captains Garret and Boyce of H.M.'s navy, were with me. We were at an elevation of nearly 40 feet, and the expanse of these desolate sands were stretched out for miles in the distance, dry at low water. The scene was one of desolation and sublimity, the sun was setting behind the distant land, and the harvest moon rising in full orb'd majesty in the eastern sea line without a cloud. In the very heart of these dangerous shoals called Trinity Bay, three steam vessels lay peacefully anchored; the Trinity Yacht *Vestal*, with the deputy-master, Sir Henry Pelley, Bart., and a Committee of Elder Brethren on survey; the *Samson*, under my orders, in attendance, and the *Porcupine*, Capt. Bullock, also surveying for the Admiralty, I could not but feel persuaded that tradition must have had some foundation in facts, when the features of this sand were contemplated.

* Shoals in the North Sea, and now called the Broad Fourteens.

† The tower of St. Peter's Church is rent from top to foundation by a more recent earthquake.

How very few feet in elevation! How slight a geological change would again form an island, with the self-same bay, where, in dreamy vision fancy can imagine lay sheltered the piratical Earl Godwin and his northern warriors. As the water flowed over the shoals the men-of-war's men were seen wending their way to their boats by moonlight, and the beacon erected by Capt. Bullock, to assist in warning the mariner of his danger, or sheltering him in his distress, favoured the impression, and elicited the hopeless, but heartfelt wish, that art could restore what nature in her terrific operations had destroyed. It had been too much the fashion to discredit tradition.

Artesian wells have recently been sunk in Minster Level, and the strata brought up by the augers in boring, give ample proof of subsidence in that level, at some distant era, and upheaving in another. A sea-beach of washed and rounded pebbles exist at a depth of 176 feet below the surface, and beds of oysters beneath the meadow soil, which beds are now considerably above the present tidal level, and, consequently, must have undergone a second change. It is probable, nay natural, that the sinking of the hills on each side should upheave the level and occasion the geological features here discovered. Nothing has tended so much to mislead the antiquary in his researches as the account given by partial and interested historians. Hence we find in "Lewis's History of Thanet," (which has been a text-book for many more recent publications,) the grossest geological errors, such as the describing Ramsgate a "mere gap or waycut through the chalky cliff," in lieu of which, it is a beautifully formed valley or basin containing a diluvial deposit 40 feet in depth, in which have been discovered fossil remains of the Mastodon and Mammoth, similar to the gigantic bones in my possession, which have been dredged up in the vicinity of the Goodwin Sands. And the local historian in his day was still more in ignorance as to antiquarian relics, where he doubted the derivation of Ramsgate to be Romesgate, or Romans-gatt. We have in possession undoubted proofs in the title-deeds of estates, bequests, registers, and also a copper coin, found in excavating the site of the blockhouse at Gravesend of "Romans-gatt, Isle of Tenet." Roman Barrows have been opened during the last twenty years, containing *perfect* remains of tibulac urns, sacrificial patera, and other relics of the illustrious dead, arranged in the manner decisive of their Roman original. When the ground on the shore at Ramsgate harbour was excavated to lay the foundation of the patent slipway, an ancient timber pier was uncovered, among which Roman coins, of the earliest date, were found, together with the remains of an arched tower entirely of Roman bricks and construction. The strata of sand, beach, and boulders, which had covered these remains at a depth of 24 feet below the surface, had every appearance of tidal agency, as a deposit of successive storms. Such are the extraordinary changes distinctly traceable in and around the Isle of Thanet. The cutting of the South Eastern Railway at Groveferry is a study for the geologist, as interesting, as the neighbouring ruins of the Roman fortress at Richborough must ever prove to the antiquarian; and I believe these researches united, afford the strongest proofs of much that has been bequeathed to us by oral tradition.

MAGNETIC VARIATIONS.

Liverpool.

SIR,—In the fifth edition of a “Treatise on Navigation,” by Henry Wilson, published in 1746, the annexed table of Magnetic Variations as observed by the author at various places in the year 1718, is given, and may perhaps be interesting when compared with the present variation at the same places.

The work is dedicated to Viscount Torrington, whom, it appears, Mr. Wilson assisted in his studies, while the latter was mathematician on board the *Barfleur*, under the command of Admiral Byng, (Lord T’s father,) in the Mediterranean.

Having never seen another copy of the book, it is probably now rarely to be met with.

I remain, &c.,

To the Editor *N.M.*

ANDREW LIVINGSTON.

“The variation of the compass, as I observed it in the year 1718, on board of H.M.S. the *Barfleur*, under the command of the Right Hon. Sir George Byng, Admiral of the fleet.

Variation West.	Bearings of Headlands, &c.
D. M.	
10 53	Ushant, easterly.
8 52	Cape Finister, E.N.E., 12 leagues.
8 7	Off Lisbon, within sight of land.
8 55	St. Jago, N.E., 14 leagues.
1 45	Cape St. Mary, N.N.E. $\frac{1}{2}$ E., 5 leagues.
8 2	Cape St. Mary, N.N.W., 17 leagues.
	Before the straits mouth, sometimes without sight of land, we had, by several good observations, 7 degrees, or within half a degree more or less.
9 38	Cape Palos, 10 leagues W.S.W.
14 31	Cabrera (near Majorca,) N.W. 8 leagues.
14 52	East point of Majorca, W.N.W. 6 leagues.
14 8	At anchor before Port Mahon.
10 54	Cape Tolar, E. $\frac{1}{2}$ S. 25 leagues by estimation.
17 16	Cape Carbonera, N.W. $\frac{1}{2}$ N. 7 leagues.
13 44	Cape Carbonera, W.N.W. 9 or 10 leagues.
11 43	Cape Carbonera, W.b.S. 11 leagues.
11 35	Serpentaria, W.b.S., Cape Gomera, N.W.
11 46	Entering Naples Bay.
10 50	Off of Palinura.
12 21	Strombello, W.b.S. 1 league.
11 30	Before Syracuse.
11 45	Cape Passero, N. $\frac{1}{2}$ W. 4 leagues.
11 38	Before Malta.
	Upon the coast of Sicily, it continued between 12 and 13 degrees ; but sailing from Palermo to Naples, it decreased to 11° 46', as observed in Naples Bay.

N.B.—It may be thought surprising, that to the westward of Sardinia. there should be less than 11°, and S.E. from it is above 17°. There is some reason to believe, that there are some magnetical rocks in or near that island which may affect the compass ; but we must leave that to time and future experience to determine.

THAMES CONSERVANCY.

POOR "Old Father Thames" has been more sorely used than many who have been more clamorous in their wrongs, and has been more silent only because he has been more patient. In his youthful days, and in feudal times, his wardship was granted to the Lord Mayor and Corporation of London, who were, no doubt, fully equal to what was required of them, and not less fully capable of appreciating the use and capability of the magnificent river which produced fine fish, and abundance of them; who, therefore, could feel greater interest in guarding this tempting allurements against the vulgar appetite, than the Mayor and Aldermen of London? But *tempora mutantur*, all is changed, except Aldermen, their pre-eminent quality, which made them the fitting wardens of a trout-stream, remains unaltered; while that stream bears upon its untiring waters, the riches of the ends of the earth; but, alas! the fish, where are they? *Irish* echo replies, "They are poisoned, and under the very noses of the Aldermen appointed to preserve them."

Few survived the daily black draught administered by the Commissioners of Sewers, and those few have now sunk under the accumulated abominations, poured into their native stream, by the numerous gas works, which belch forth daily doses of plague and pestilence upon the suffering tribe. "Othello's occupation's gone!" Still are the deserted waters coveted by the Aldermen; still does the successor of Sir RICHARD WHITTINGTON, turn again, and cast a long and lingering look upon the depopulated stream in fond remembrance of bye-gone days.

What scenes might be conjured up by a Lord Mayor's fancy, or an Alderman's imagination in association with that river? how many noble fish its munificent bosom had nurtured, and furnished in the olden time, to the wants and luxurious cravings of Mayoral stomachs? how many a time and oft it had flowed in ecstasies of delight, and sported and gambolled about the carcass of some well-fed Mayor, proudly bearing him upon its waters? how often had it yielded in graceful and silvery curves about the City barge, when conscious that it bore some fourteen stone of Mayoral flesh upon its bosom. Yes, these are tender and trying recollections to a Mayor, who, notwithstanding the dignity, in spite of the men in tin, and a thousand other imposing things, which make a Mayor an object of reverence to the small boys in his neighbourhood—he is, after all, but man, having his common infirmities; and, therefore, may it be permitted to him to indulge in such reflections, which, in a civic brain, must naturally flow from the association of the empty fish-kettle of the Mayoral kitchen; the deserted stream; the fasting Aldermen; and departing waters of the Thames.

We hope we may not be regarded as preternaturally obdurate, or stubbornly insensible to the sufferings of our fellow-citizens, if we proclaim ourselves untouched by the lamentations of a Lord Mayor, or the wailings of the Court of Aldermen; we are not insensible to the grief of the Common Council, nor the extreme suffering and despondency of the

Navigation Committee; but this is not an age of sentimentality, we would rather sacrifice our sympathy than sell our birth-right in the Thames, at the price of its grateful indulgence. We respect the tears of a Lord Mayor, we "pity the sorrows of a poor old man," we would not, for cost of a City feast, deny him the sad satisfaction of emulating the intensity of grief of that fabled personage of yore, who melted and dissolved into a stream; yea, more, we would use our influence for appointing him Conservator of the river he should thus originate, these outward shows of sorrowing are, at least, to be respected. Let the Corporation place Gog and Magog in mourning, to stand as mutes at the door of the Mansion House; let the Court of Aldermen put on sackcloth and ashes, and walk barefooted to St. Paul's; let the Common Council be doomed to a perpetual silence; let the City barge be painted black; we can bear all this and more; but let us have the Thames, it is the common way of all the nations of the earth, its ebbings and flowings are the pulse of the world's commerce, the free navigation of its waters is the Englishman's birth-right; the soil upon which it flows, is the inheritance of our Queen; the care and preservation of its navigation, is the duty of her Lord High Admiral; the preservation of its fish, is the duty of the Lord Mayor; let not these rights and duties be confounded; let not the accident of Civic dignity usurp and supersede the requirements of science and maritime experience.

The intellect and acquirements of the Mayor and Corporation are no doubt upon a par with, and fully equal to, the performance of the duties cast upon them by the several charters and statutes of the realm, under which they claim their office; but it is obvious that an intellect or education fitted to one office, is not necessarily adapted to another. A Mayor fully competent to watch over the interests and conservation of the fish in a river, is not necessarily competent to watch over and regulate the infinitude of interests involved in the myriads of human beings, who pass and repass upon its tides, who load its waters with the accumulated weight of the riches borne from the uttermost ends of the earth:—the care of a fish pond, and the regulation and preservation of the port and emporium of a great metropolis, are offices requiring different degrees of intelligence, and dissimilar amounts and qualities of education.

The port and harbour of the metropolis of England may be invested by a besieging enemy; are its fortifications to be entrusted to the defence and military sagacity of the Lumber-troop and City Artillery? Shall the Hydrographer of the Admiralty perform his important duties upon sufferance of the Court of Aldermen? Shall the banks of the Thames be farmed for the edification and the profit of a Civic treasury already overflowing, at the expense of the revenue of the people? The convenience and liberty of the myriads, who use its stream and the outlets of its banks should be without restraint, and without molestation.—*Nautical Standard.*

ATMOSPHERIC RAILWAYS AND STEAM NAVIGATION.—*Extract from a Report of Sir John Rennie.*

(Continued from page 298.)

FROM this period nothing remarkable appears to have occurred, until the construction of the *United Kingdom*, which was by far the largest in size, and the most powerful that had been made. She was 160 feet long, $26\frac{1}{2}$ feet beam, and 200 horse power; the vessel was built by Steele, of Greenock, and the engines by David Napier. As deep-sea navigation by steam advanced, it became an object of considerable importance to save fuel, and to obviate the inconvenience of the incrustation of the boilers by the deposit of salt, and other sediments occasioned by the use of sea water; David Napier, therefore, introduced the system of surface condensation, the condenser being made of a series of small copper tubes, through which the steam, after being used, passed from the cylinder to the air-pumps, the pipes being surrounded by a constant supply of cold water, so that the steam was condensed, and the water was returned directly back into the boiler, to be again converted into steam, without the admixture of salt water according to the usual plan, thus employing the same fresh water over again, whereby the above mentioned inconvenience of incrustation of the boilers was in a great measure avoided. Hall afterwards tried the same system with certain modifications, and it was employed in several vessels; but, like Watt, Cartwright, and others who had tried it, he found the condensation was not so complete, and the weight, cost, and difficulty of keeping the apparatus in order, hitherto prevented it from being generally used; for although it possesses advantages in many respects, still, upon the whole, they do not counterbalance the disadvantages, and the old system of condensation by jet, with the aid of the brine pumps, is more generally employed. The brine pumps and refrigerators were invented and patented by Maudslay and Field, in 1825, and were used on board the *Enterprise*. After the *United Kingdom*, numerous vessels of similar and even greater size were constructed, to ply between London and Leith, Glasgow, and Liverpool, and elsewhere.

The next great step in advance was the crossing the Atlantic. This had long been in agitation, and was freely discussed by numerous enterprising minds, anxiously bent upon working out the fulfilment of such a desirable and important object; but the great practical difficulties involved in the execution were not so easily overcome.

To construct a vessel of sufficient size, with engines of adequate power to propel her through the storms of the Atlantic, and carrying with her sufficient fuel to keep the engines in motion, was considered by many (and among them were very competent authorities) to be extremely doubtful, but, by the world in general, the task was considered to be wholly impracticable. To Bristol is due the origin of this great undertaking, and a company of enterprising individuals, with Brunel, as their consulting engineer, was formed for that object; it was, however, with difficulty that they found engineers to carry it into effect, some of the

first constructors of the day having declined to undertake it. Messrs. Maudslay and Field, however, who had already taken so prominent a part in the prosecution of steam navigation, saw their way, and boldly engaged to construct engines of the requisite power, well adapted for the purpose. Accordingly, a vessel, called the *Great Western*, was designed by Paterson, and built by him at Bristol; and the engines were completed and fitted on board in March, 1838. The vessel was 210 feet long, and 38 feet beam, drawing 15 feet when laden, being 1240 tons burthen, and capable of carrying 500 tons of coals, which, it was calculated, would last twelve days. The engines were upon the side lever principle, each of 210 horse-power, with cylinders 73 inches diameter and 7 feet stroke, making 15 strokes per minute; they were fitted in cast iron frames, with the latest improvements. The boilers were constructed with flues over the fires; they were called double-story boilers, and have been since much used; they had brine pumps, and were worked under a pressure of 5 lb. per square inch; the total weight of the engines and boilers, including the water and the paddle-wheels, was about 420 tons.

The vessel was completed with her engines, and made her first trial on the Thames in March, 1838, realizing twelve miles per hour. On Sunday, 8th April, she started on her first voyage from Bristol, under the command of Capt. Hosken, with seven passengers, and a cargo of 50 tons of goods, besides 500 tons of coals, and reached New York on Monday, 23rd April, a distance of 3000 miles, in thirteen days and ten hours. Her arrival created the greatest interest; the quays were crowded with spectators, anxiously waiting to give a hearty welcome to the enterprising and successful adventurers, who had thus so triumphantly solved the grand problem, and had brought the New World within a few days' sail of the Old. On her return, she left New York on the 7th May, and reached Bristol on the 23rd, with 70 passengers; performing the voyage in 15 days.

The success of this voyage across the Atlantic having exceeded the most sanguine expectations of its promoters, and, indeed, of the whole world, there seemed no bounds to the extension of steam navigation; other companies were projected, and numerous larger and more powerful vessels were designed, in equal confidence of success; then followed the *British Queen*, by Napier, of 500 h.p., the *Liverpool*, of 500 h.p., and the *President* of 600 h.p., whose melancholy fate served for a time to damp the ardour of speculation.

The practicability of steam communication across the Atlantic having thus been established, and its superiority over the old sailing system being clearly proved, time only was necessary to render it perfect. The line from Liverpool to Boston was then designed, and carried into effect by Cunard, for conveying the mails; it consisted of four fast vessels, the *Acadia*, *Caledonia*, *Hibernia* and *Cambria*, of about 1000 tons, and 450 h.p. each. This was followed by the gigantic project of the Royal Mail Company, for carrying the mails between England and the West Indies, consisting of twelve vessels, each of about 1200 to 1300 tons burthen, and 420 h.p. The engines of these vessels resembled very

much those of the *Great Western*, whose complete success induced their being taken as models for others. The great weight and space occupied by these engines, being upon the average about a ton for every horse-power, rendered it difficult for them to carry any great amount of cargo beyond the passengers, and thus the profits, as a mercantile speculation, were materially lessened; it became extremely desirable, therefore, to ascertain whether engines, equally efficient, could not be made of less weight, and to occupy considerably less space.

In order to effect this object, engines were invented, by which the power was applied directly from the piston to turn the paddle-wheel shaft, without the intervention of side levers; these were called direct-acting engines, and at first great objections were made to them in consequence, as was asserted, of the loss of power arising from the obliquity of the action of the piston-rod upon the crank on the paddle-wheel shaft. Messrs. Seawards were among the first to introduce this system into the *Gorgon*, and notwithstanding the objections above stated, it has been improved by them and by other engineers, and has materially gained ground. The obliquity of action of this system, compared with that of the side-lever system can only be considered in the light of a little extra friction, which is fully, if not more than compensated for, by the reduction of weight and space. The modifications of the system by Miller, have been very successful, and combined with the forms of vessels adopted by him, have enabled great speed to be attained both by sea-going vessels, and his boats on the Rhine and other rivers. Even the objection of extra friction, however, if tenable, is obviated by the vibrating cylinders described in Trevithick and Vivian's patent in 1802; patented by Witty in 1813, and by Manby in 1821, by whom the first engines of the kind were constructed; subsequently improved by Maudslay and Field, and Spiller; and now extensively manufactured by Penn, Miller, and others; Maudslay and Field's double cylinder engines, so arranged that a long connecting rod is obtained by its being enabled to descend between the cylinders; the trunk engine, by Humphrey; and the modification of the concentric cylinders by Joseph Maudslay; as well as other varieties of this system by different makers.

The substitution of wrought iron for cast in a large portion of the frame and condensers; the tubular instead of the common flue boiler, first proposed by Blakely in 1764, and afterwards improved in the locomotive boiler, and introduced into steam vessels by Maudslay, Spiller, Bramah, and others, about the year 1829, as well as the use of steam of higher temperature and increased expansive action, have combined materially to increase the effect of the engines, and reduce the consumption of fuel, so that the weight and space occupied by them is now reduced to nearly one half what it was originally, or, in other words, engines of double the power now only occupy the same space and tonnage in the vessel; thus, a material advantage has been gained in enabling vessels to carry a larger quantity of fuel, by which they can extend their voyage; and greater power is rendered disposable for propelling the vessel through the water.

As economy of time becomes daily more important, every means

which can effect it, are brought into operation, and thus, the power of the engines has been continually augmented, in order to produce greater speed and shorten the duration of the voyages. Referring to the navy, we find, that 1822, 80 h.p. was the largest; in 1827, 160 h.p.; in 1828, 200 h.p.; in 1830, 220 h.p.; in 1838, 440 h.p.; and in 1845, we have the *Retribution* and *Terrible*, with nearly 1000 h.p. in each, and it is not improbable that, ere long, greater power will be employed.* Whilst the royal steam navy has been making such rapid progress, the mercantile steam navy has not only kept pace with it, but has even led the way; for the enterprising, commercial spirit of this country is ever on the alert; every improvement is seized upon with avidity, and the greatest inducements are held out to make new discoveries, in fact, nothing but constant progress can satisfy the restless spirit of improvement. In the infancy of the art, we are satisfied with five or six miles per hour, now, when we have attained above seventeen miles per hour, we are confidently looking to a still greater result.

Whilst the improvements, above described, have been making in the engines, and in the mode of applying them, various attempts have been made to obviate the inconvenience and loss of power occasioned by the concussion of the floats of the ordinary paddle-wheel entering the water, as well as the heavy drag or back action of the water when the floats leave it; numerous experiments and inventions have been tried for constructing a wheel, of such a form that the floats shall always enter the water in the most advantageous manner, and having effected the object, shall leave it again with the least resistance. To describe the numerous inventions of this kind would be foreign to my purpose, and would occupy too much of your time; it will suffice to mention that of Buchanan, by which the floats always enter and depart from the water perpendicularly; those of Cave, Oldham, Morgan, Perkins, Seaward, and Barnes, which are modifications of it, differing chiefly in the angle at which the floats enter and leave the water, and the mechanism attached to the wheel by which the motion is communicated to the float-boards; the principle of this invention is extremely good, but, in practice, it has unfortunately been found that the wheels of this construction, after a little use, are liable to get out of order; it is not, therefore, generally adopted, although, whilst they are in order, considerable advantage is doubtless gained. To obviate this inconvenience, as well as that of the common wheel, Field invented, what is technically termed, the Cycloidal Wheel; this consists in dividing each float-board into several parts or narrower boards, and arranging them so nearly in cycloidal curves that they shall all enter the water at the same place in immediate succession; as the acting force of each board is radiating, it propels whilst passing under the water in the ordinary way, and when it emerges, the water escapes simultaneously from each narrow board; this principle was not followed up by its inventor, and was afterwards patented by Galloway, since which it has been very generally adopted. The principle of reefing

* The total amount of steam power employed in the Royal Navy is about 35,000 h.p.

the paddle-wheels is also used, so that when the vessel is immersed, the leverage of the paddles can be shortened, and when light, it can be lengthened, and can thus be always adjusted to the power of the engines.

As economy of fuel is an object of the greatest importance, so, in long voyages, it is advisable to employ the wind as a moving power, as much as possible, when favourable; it became, therefore, desirable to contrive a simple means of detaching the paddle-wheels from the engines, so as to allow them to turn round with the motion of the vessel through the water, and thus to prevent them from impeding her way; various contrivances of this kind have been invented, but one of the most simple, and which is now much employed, was invented by Braithwaite and Milner; it consists of a friction clutch attached to the paddle-shaft, which, by means of keys and screws, can be tightened or slackened with facility, and thus the paddle-wheel is attached or released at pleasure. Numerous attempts have been made to introduce the rotative engine without pistons, but they have hitherto not been successful.

The great results rendered by steam navigation induced the mechanical world to turn their attention towards the extension and improvement of it; Boulton and Watt, Maudslay, Field, Robert and David Napier, Jessop, Glynn, Barnes, Miller, Ravenhill, Girdwood, Manby, Spiller, Scott, Sinclair, Caird, Todd, Fawcett, Forester, Seaward, Penn, Fairbairn, Hall, Rennie, and numerous other able men devoted their minds to it, and have produced some splendid examples of engines and mechanism in that department. When we look back to Symington's original engine, in 1788, it appears to have been so changed as scarcely to be recognisable as the same, and from a speed of five to six miles an hour in smooth water, we now find that a speed of eight and nine miles an hour against a heavy gale and head wind in the Atlantic, and above seventeen miles in still water, has been obtained, whilst improvements are in progress which lead us to anticipate, at no very distant period, far greater results; much of this, no doubt, is due to the perfection of the workmanship, as well as to the more correct proportions and adaptation of the various parts of the machinery, compared with what was formerly done, and which it was impossible to accomplish with the slender and inefficient means then at command; for this we are greatly indebted to the improved self-acting tools of Whitworth, Fox, Lewis, Sharpe, Roberts, Nasmyth, and others. The improvements in the form and construction of the vessels have also contributed much; and, in the investigation of this difficult subject, we are much indebted to John Wood, Oliver Lang, Fearnall, Fincham, Ditchburne, Symonds, Rule, Seppings, Scott, Russell, Edye, Patterson, White, Pasco, and others.

ATMOSPHERIC DUST.

Starcross, 5th June, 1847.

SIR.—Having read in the February Number of your valuable work, for the present year, an interesting paper by C. Darwin, Esq., F.R.S., F.G.S.,
NO. 7.—VOL. XVI.

2 z

on Atmospheric Dust, referring to numerous cases of vessels in the Atlantic having had their rigging, spars, decks, &c., covered with a thick coating of almost impalpable red powder; whilst passing at a considerable distance from the west coast of Africa, I recollect a similar phenomenon occurring on board H.M.S. *Winchester*, in February 1829, when on her way out to the West Indies, with the flag of Vice-Admiral Sir Edward Griffith Colpoys.

Shortly after we had left Tenerife, when in about the latitude of 25° 30' N., and some 250 miles from the coast of the great desert of Sahara, the weather became very hazy and sultry, and one morning at daylight the lays of the lower rigging were observed to be filled with fine reddish-brown dust, which particularly shewed itself on the feathers of the dog-vane; and the decks, whilst being washed, were in as muddy a state as the pavement of a street after a shower. This hazy, unpleasant weather continued all that day, and quite obscured the horizon, rendering it difficult to observe even the crest of the waves beyond a few cables' lengths, and the sun appeared as though viewed through the red shade glass of a sextant; towards evening it got worse, the wind became light, and whilst the crew were amusing themselves, as usual, after supper, in "dancing and skylarking," a very fine young fellow fell off the fore-royal yard-arm into the sea, he, having for a wager undertaken to go from the port side of the fore-castle to the starboard side, by the leach-ropes of the square sails. He had reached the starboard royal-yard arm in this way, cheered by his shipmates, when he missed his hold; the helm was put down, the after-yards squared, the life-buoy let go, and both quarter-boats lowered in an instant, but without success, as he never was seen to rise, and it was said that he had struck the (bb) anchor in his fall. The haze at this time was almost as dense as a London November fog, the air full of fine red dust, which made it difficult and unpleasant to breathe, and the boats were out of sight immediately they left the ship's side; the bugle was kept sounding to point out the ship's position to the officers in the boats, who, nevertheless, could not find the ship for some time afterwards. The Admiral became uneasy, and ordered muskets to be fired, and one of the carronades; and nearly an hour elapsed before the boats returned to the ship; they had seen nothing of the poor fellow, or even the life-buoy.

On the following day, towards evening, the weather was totally changed to a serene sky and steady, increasing breeze, and we appeared to have passed through a belt of this dusty atmosphere of some 300 miles in breadth. A great deal of sickness followed, but whether owing to this, or to the *disgusting, barbarous, and cruel* ceremonies, which took place on the subsequent day, under the title of *Neptune's Visit*, it is difficult to say, but the sick list was quickly swoln to an unusual and alarming extent, and many a fine fellow's remains were consigned to the deep, and the insatiable "pallisades" at Port Royal, whose sickness commenced on the day after *Neptune's visit*, preceded by the dusty breath of the harmattan.

I remain, &c.,

To the Editor N.M.

GEO. PEACOCK.

AUTO-BIOGRAPHICAL SKETCHES, by a Merchant Sailor, illustrative of the State of the British Merchant Service.

(Continued from page 256.)

A FEW days on shore soon sufficed to render me tired of an inactive life, and I accepted the pressing invitation of a Scotch skipper of a small schooner to accompany him on a voyage from Liverpool to the east coast. This man had all his lifetime commanded a Scotch square-topsail sloop, trading from his own locality on the east coast to Sunderland and Newcastle for coals, with occasional trips to Alloa, and other ports, with barley, returning with coals for the factories. Beyond this trade he had never been; he had not the remotest idea of navigation, or a chart. I believe, the compass itself was comparatively useless; his system (if it may be dignified with the name,) was what is commonly called the "rule of thumb." His brother had commanded the schooner, and on his return from the Mediterranean had been seized with cholera and died; the mate brought the vessel to Liverpool, after considerable difficulty; and the owners (both brothers being interested,) had induced this man to go to Liverpool and bring the vessel home. I had previously known both brothers, and became a party consulted about the voyage round, and everything connected, so that, from the commencement, I was appealed to on all occasions, whether respecting the accounts of the past voyage, or the outfit or cargo of the present; and it was very soon apparent to me that he knew nothing of the business he had undertaken, whether it related to the closing the accounts for the Mediterranean voyage, or the settling of the loading and provisioning for the present. He often expressed doubts about the safe navigation of the vessel round the north of Scotland, and it was absurd to fancy a man who had been in the coasting trade, in a particular locality, for twenty years, possessing so little confidence in himself, and so completely betraying his ignorance of the commonest forms of a shipmaster's duty.

We loaded a cargo of salt, and after duly waiting for fair wind for the first short course in our passage, to the Isle of Man, we started; the skipper evidently in a fever created by fear and a total want of confidence in himself. From previous acquaintance, he asked me to live in the cabin, and I soon discovered that his anxiety to have me with him arose more from his fancying that I could assist and advise him in navigating the vessel round, than for the mere manual labour I could perform. So different was my present position to that I had been accustomed to, that I could not fancy his asking me whether he was bearing the right course, and continually pestering me about my opinion of the winds and weather. The Calf of Man was safely rounded, and then came the question, by what route we should pursue our voyage. It was resolved, after great deliberation, and much unnecessary conversation, to pass through the Sound of Islay, instead of going round that island. From the Mull of Cantyre, a course was shaped for the entrance of the sound, and on seeing the island and nearing it, no entrance to any sound was visible; we had been steering across a strong ebb tide, and were consequently set considerably out of our course. When the entrance to the

sound could not be seen, our skipper became completely childish. He declared that the wrong course had been given; in a whining, half-crying sort of tone, he said he would be lost, although the weather was fine and every thing favourable. He accused me of misleading him about the course, although I merely gave my opinion as to what it should be from the chart, fancying that he would himself act on his own judgment. Seeing that the man was ignorant and totally unnerved, I cut his crying speeches short, by saying that I had no doubt, if he would use proper means, he would see the entrance of the sound. On saying so, I went aloft on the topsail yard, and at once saw the entrance, for which the vessel was steered. Again, on approaching the narrow entrance, his fears increased and became even ludicrous, while his countenance was the most perfect expression of a woe-begone and ruined man. I became completely disgusted with his conduct, and my very indifference rendered him the more alarmed. He fancied me a reckless fellow, but still appealed to my judgment, and pestered me for my opinion. Entering the sound, and coming to the place where the tide runs strongest, the schooner was whirled completely round in the whirlpools oftener than once. The skipper's exclamations were piteous in the extreme; he talked of anchoring, of running the vessel ashore, and other such ridiculous expedients, which our final passage of the sound alone put an end to; a considerable open space being then before us on our passage towards the Sound of Mull, through which he intended passing.

After passing through the Sound of Islay, the master, who previously intended to go outside of the Western Islands, began to get alarmed, he hesitated, spoke aloud before the crew, first in favour of one plan, then another; night coming on, added to his embarrassment and disquietude, and, after considerable delay, and in vain asking for my opinion, which I refused to give, he determined to go inside the islands; but still undetermined whether to go through the Sound of Mull, or by the Caledonian Canal. A course was accordingly given, and we proceeded onwards in a dark, hazy night, with smooth water and a light breeze. Just about dark we spoke a sloop steering in the same direction; she belonged to an English port, and the master, quite unacquainted with the locality, fancied, in meeting us, he was all right, as he seemed quite sure that we were confident as to our position, and would have an excellent guide, as he was bound to the east coast of Scotland as well as ourselves. The stranger proposed to follow us, and requested a light to be shewn over our stern which he would steer by. Our master, unwilling to display his ignorance and want of confidence, acquiesced in his request, although, I felt assured, he would much rather have followed than led. Onward we proceeded, the blind leading the blind, a course being steered so as to sight, and pass close to the Mare Isles; the night continued fine but hazy, a good look-out was kept on board our schooner, the stranger sloop following close in our wake. As we had progressed on our passage from Liverpool, the schooner continued to make water, the twisting given her by the strong tide in the Sound Islay, or some other unapparent reason, caused her to make more water, and, to our skipper's horror, there were no pump-tacks on board, and the leathers

were completely worn off the pump-boxes. Again, we were in a dilemma arising from carelessness and inattention before leaving harbour; every locker was searched, but in vain, at last, we had no other remedy than to draw the tacks from the coats of the masts, and with them re-leather the boxes.

Excited and agitated; first, by not finding the entrance to the Sound, afterwards, in passing through it, and becoming more timorous and nervous every minute, the master was now in a fever, he paced the deck incessantly, muttering to himself; at times the sound would form itself into words of apostrophe about his hard fortune and ill-luck; his incapacity and want of ordinary and common precautions, were never thought of. The night was passing on, the distance to the Mare Isles was run, and still no land in sight; still we steered onwards, no precautions were adopted other than a good look-out. I had retired to my bed, being my watch below, when, in a short time, I felt a violent tugging at my legs, and awaking, heard the skipper imploring me to come on deck, as we were going ashore, I jumped on deck at once, where all was confusion and noise; looking forward and upward, I saw the towering cliffs of the Island of Mull high above our mast-heads, the skipper crying out all the time "What shall we do?" I recommended him to put the schooner about; this was done, and scarcely done, when we came into collision with the sloop which was following us, and when the schooner came round, was so close as to prevent her gathering way, before they were entangled together; the sloop's people had been taking it very quietly, trusting implicitly to our guidance; they hurried on deck, and between their alarm, suddenly roused up by the collision, and our skipper's ridiculous terror, there was noise enough to prevent any efficient means being used to effect a separation of the two vessels. Fortunately, the night was fine, and the water smooth, and we got clear without any material damage. Then came the question, "Where are we? How shall we steer?" Again I was asked to go below to consult, when, on seeing the chart, I recommended the reverse course to be steered to the one we had been pursuing, under very easy sail; even this safe plan he did not seem to understand, although he adopted it, and soon afterwards the breaking day disclosed our whereabouts, and we pursued a course towards the loch from which the Caledonian Canal commences; the skipper founding his determination to take the route, on his fear that the vessel was making too much water, to go the outer passage.

The forenoon of the beautiful day which succeeded our troublesome night, passed away in gaining the entrance of the loch, and the afternoon found us well up towards its head. Again, our skipper became excited, no outlet from the loch could be seen, the narrow channel leading to the entrance of the canal being tortuous and not to be discovered until close to it. He now declared we were in the wrong loch, although no other was visible, "the schooner must go ashore," "there was no canal there." and such other useless and childish expressions; we certainly seemed in a *cul-de-sac*, but still we could anchor, or beat back; expedients for a relief from his difficulties never contemplated by our master. The entrance to the canal, however, shewed itself, and once snugly within the

first lock, we moored for the night, to the infinite delight of the skipper, as well as the crew, who were wearied with the constant complaints of their master.

At the time of which I am writing, the cholera was prevalent in some parts of the kingdom, and fatal enough as it proved, rumour had magnified its virulence and fatality, until the inhabitants of this part of the Highlands of Scotland where we were laying, thinly scattered over the country, primitive in their habits, uneducated and superstitious in their manners, had become so alarmed at the approach of the fell destroyer, that they looked even on their fellow-men with distrust and suspicion. The excitement of the past two days, the common difficulties of a coasting navigation magnified into a herculean task, the constant watching, proceeding from abject fear and dread, had so affected the master, that, while laying here, he either became ill, or fancied himself so. We proceeded onwards past Fort William about twelve miles, tracked by horses hired from the small farmers around, and again anchored for the night. During the day, the master's illness had been spoken about, the men driving the horses had heard of it, and after proceedings proved that the report had gone abroad, that there was cholera on board the schooner. The master, himself, slightly affected by a very small attack of diarrhoea, fancied himself severely ill with cholera; he began to roar about his wife and family, cried like a child, and twisted and wretched in such a manner that I really fancied him ill. I strongly solicited his permission to go for the doctor to Fort William, a distance of twelve miles, but the nearest place where medical aid could be procured; this proposition he would not listen to; he said I must not leave or he would die. I then tried to get one of the crew to go, but each one refused, ascribing no reason but that they were afraid to go in the dark. I determined to do something, as the master appeared to get worse. I took some money from his drawer to pay the nearest farmer to send a man for the doctor, and, going up to the farm-house knocked at the door; after some delay the farmer looked out of the window, listened to my story, but positively refused either to send a man or lend me a horse, he said we had the cholera on board, and unless I immediately went away, he would fire at me. I certainly became irritated, called him every thing but a Christian, and returned on board determined to walk to Fort William. I accordingly started about 10 P.M., through a country possessing no regular road, and with which I was unacquainted. The direction, however, I knew, and, after a fatiguing walk, I reached the town about 1 A.M., and succeeded in finding a medical man, told him my story, and saw him mount his horse and ride off to my skipper's assistance. His housekeeper offered me some refreshment, I rested an hour, and set out on my return to the vessel, getting on board just as the doctor was leaving, and to my utter amazement saw the master on deck, giving orders to get under way. The doctor told me there was nothing the matter, and smiling to me, trotted off with his fee, congratulating himself, as many medical men do, that there are fools in the world whose fancies contribute to the maintenance of the profession. Although the doctor had proved to him there was nothing

the matter, still he could not satisfy the country people, who, during our passage through to Inverness, cautiously avoided holding any communication with us; indeed, we were like a plague ship. That proscription, however, did not prevent me enjoying the magnificent scenery through which we passed, enhanced as it was to me by my previous reading of the works of Sir Walter Scott. It is rather surprising, considering the facilities afforded, that so few vessels pass through the canal; it not only saves a considerable distance, but enables the vessel to be navigated in smooth water, and free from those heavy seas and stormy winds, which prevail so constantly around the Hebrides, and the north of Scotland.

WINDWARD GREAT CIRCLE SAILING.

SIR.—The paper in the *Nautical Magazine*, on Great Circle Sailing, contains certain passages which, as they stand, are likely to produce, amongst those who are not pretty well acquainted with my Navigation, a very unfavourable, and altogether erroneous impression, as to the completeness with which I have treated this important point.

At p. 229, line 10, the writer says,—

“No author of works, connected with this branch of the science, had previously regarded the earth as a sphere, or laid down rules for windward sailing between very distant points on the earth's surface. So far from this being the case, it has been the argument most frequently advanced against the practical utility of Great Circle Sailing, that its advantages must be confined to steamers or such vessels as can maintain an undeviating track.”

Again, same page, last paragraph,—

“The application of the principles of Great Circle Sailing, if conducted by the rules previously adopted, would involve the mariner in calculations so laborious as to render it impracticable. The approximate method of Raper is, for this purpose, valueless, because it depends on the point that deviates most from the rhumb track, which point also varies with the latitude of the vertex, which again continually changes in conducting Windward Sailing on spherical principles.”

Now, any one who reads these two sentences, (and there is nothing said elsewhere to qualify them,) will naturally infer that what I have said is either insufficient or erroneous as regards the case of *Windward Sailing* between *distant points*. I admit, at the outset, that I have not alluded, *by name*, to this question, and I entirely absolve the writer from any intention to disparage my humble labours, of which, on the contrary, he only speaks too flatteringly; but I contend that the instructions laid down in my work, ought to have protected it from this sweeping depreciation.

The rule laid down for Windward Sailing *on a plane*, that is, for a short distance, is “to keep the ship on that tack for which she looks best up for her port.”—No. 211, (p. 68, 2nd Ed.)

Again, in describing the Great Circle, I have been particularly careful No. 241, (p. 79, 2nd Ed.,) to impress on the mind of the seaman, that

this alone is "the shortest distance;" "the distance as the crow flies;" "the distance as measured by a thread on a globe," (note p. 79;) the course "by which the ship steers *directly for her port*;" "the only course by which she nears her port by the whole amount of distance made good from instant to instant," No. 245, (p. 84.) And in order further to call his attention to this course, as regards the matter of wind, I have brought before his notice that the circle carries him through different latitudes from those of the rhumb line, No. 803, (p. 312.) I have reminded him of the possibility of "selecting such a course as may, in certain cases, convert a foul wind into a fair one," No. 212, (p. 69;) and that it will occasionally happen that "changing the ordinary course for the Great Circle will admit of the ship being kept away, instead of close hauled," No. 804, (p. 313.) I enumerate these particulars, to show you that I have omitted nothing of consequence, which could give the practical seaman clear notions of the different points or considerations, which should be present to his mind, in making a selection between the rhumb and the Great Circle, in any particular case.

We will now come at once to the point at issue, and will take the example employed by your correspondent, at p. 230. A ship sails from C. Turnagain, New Zealand, to Valdivia, the wind E. $\frac{1}{2}$ S. (S. 84° E.,) the rhumb course is E., (N. 89° 32' E.,) the Great Circle S. 48° E. The seaman, having had the above considerations brought before him, respecting the Great Circle, and having besides been distinctly informed, (No. 241, p. 79,) that the rhumb course is a mere artificial contrivance, adopted, on the score of being the "most convenient in practice," and on account of the "simplicity of the calculations," consequent upon keeping the ship's head "*on the same point of the compass*," while on the Great Circle, though constantly looking directly for her port, she is perpetually changing her course, would surely have but little doubt, as to which of the two courses he should prefer. We, therefore, will charitably suppose that he lays down the Great Circle, or real direction of his port, and then, guided by the precept of Windward Sailing on a plane, which directs him to go on that tack which heads the nearest to S. 48° E., he starts upon the *port* tack.

But how does your correspondent put his question? In the face of all these precepts, in favour of one course and against the other, he assumes that the seaman will, nevertheless, purposely *select* the rhumb, and adds, "consequently the ship, by the chart, looks best up for her port on the starboard tack." He first supposes the seaman to make a mistake, which no one, who has been in the habit of using my work, would make, and then he lays the mistake, by implication, at my door, for the words in commas are mine. In the next sentence, he says, "although this is an extreme case, it shows the extent of the errors that may arise from the adoption of rules in connection with Windward Sailing, founded on the principle of the earth being a plane." To my apprehension, it proves no such error in the rules themselves, but only shows an absurdity to which a wrong application of them must lead.

Having thus, as I trust, satisfactorily defended my work from the main charge of insufficiency, I shall say but little as to the minor

points of the second quotation, but I demur altogether to the terms used; I cannot consent to the propriety of the expression "involve the mariner in calculations so laborious as to render it impracticable."

At p. 230, is another point liable to misunderstanding, where my name is again introduced to the prejudice of what I have advanced, but, as I trust I shall show, with no better foundation.

"It has been suggested that Windward Sailing might be founded on that Great Circle on which are situated the ship's places of departure and of destination, by laying down on a chart this track, or the approximate one of Raper, and then to tack alternately on this line so as not to depart beyond a certain distance from the original Great Circle track. A little consideration will, however, prove the inaccuracy of this theory.

"Suppose two vessels, one from Brest, the other from Penzance, are both bound for the Bermudas, which lie by the Great Circle course, nearly west of these ports. If the wind were W. the French vessel would commence her voyage on the port tack, the English vessel on the starboard tack. The vessels might probably meet in lat. $49^{\circ} 15'$, at the very time that, by this proposed rule, both were required to go about. It must, however, be evident that since these vessels are both bound for the same port, they should both adopt the same means to accomplish the remainder of the voyage with the greatest dispatch. If it be more advantageous for the English mariner to put his ship on the port tack, it must be equally so that the French vessel should be continued on that tack."

The writer then goes on to remark, what is perfectly true, that the Great Circle on which the ship is to be navigated, is to be reckoned from her *present* place, not from her *original* place of departure. But how does the above extract, or the last remark, impugn the accuracy of the theory? The Great Circle is, 1st. the *direct line*, 2nd. the *minimum distance*; and there can be no question that all a ship in a foul wind can do, is to work as close as convenient to this track, because, if she deviates so far from it as to alter sensibly the bearing of the port, that is, in other words, to fall on a new Great Circle, she has changed her position for the worse. But you will perceive that your correspondent's illustration is at variance with his conditions; he admits the necessity of so tacking as "not to depart *beyond a certain distance* from the original Great Circle." He does not, indeed, tell us what the "certain distance" is, but every seaman, (and it is to seamen only that these questions have any interest,) sees at once that the term implies any space within which the bearing of the port is not altered sensibly. Theoretically speaking, then, the ships on different circles have no business to meet; practically speaking, if their tracks lie so near as to cause them to meet in tacking, it can make no sensible difference whether they go on the same or different tacks, or even change circles altogether. In either case, nothing, as far as I can see, has been said to impugn, in the slightest degree, the accuracy of the instructions laid down.

I will not, however, dismiss this point without remarking that, so far from leading a seaman to infer that he is to consider his Great Circle when once laid down, as if it were independent of a subsequent change of place of the ship, I have recommended (No. 805, p. 313,) the "shaping of the course anew at every 60 or 80 miles distance;" and if he is told this in the case of a fair wind, (which the term "navigating" of course

implies,) it is certainly no fault of my instructions if he overlooks it, when, from a foul wind, he cannot preserve his Great Circle at all.

Your correspondent is obviously writing under a strong, and, indeed, well-founded, impression of the excellence of Mr. Towson's method. This method, which Mr. Towson was so good as to shew me, appears to me, I have no hesitation in saying, the shortest that can be proposed. But Mr. Towson's being right does not make me wrong, and I suspect that the writer is not altogether so well acquainted with what is contained in my work, as to justify the confident way in which he speaks of it. It is not altogether fair in discussing a professional question like this, to treat a work, which, it has been shewn, as I trust, contains every point necessary for the right understanding of this question, (even though it is not mentioned by name,) and which has been before the nautical world six or seven years, as if really it had no practical bearing on the matter at issue; or, as if Great Circle Sailing was only now for the first time, either recommended on right principles, or rendered practicable.

H. RAPER.

EXAMINATION OF MASTERS AND MATES IN THE MERCHANT SERVICE.

WE are at length enabled to lay before our readers another list of the Masters and Mates, who have voluntarily passed an examination, and obtained certificates of their qualifications since the 26th January last. This is in continuation of the list which we inserted in our number for March last, and we regret to add, that excepting on that occasion, not any list had been published subsequently to those alluded to in our number for December 1846. At that time the total number of masters who had obtained certificates of qualification stood as follows; viz:—

First Class	37
Second Class	71
Third Class	15
	<hr/>
	Total 123

By the list subsequently given the following additional numbers appeared:—

First Class Extra	9
First Class	11
Second Class	20
Third Class	11
	<hr/>
	Total 51

Including therefore, the list now before us, it will be seen that the total number of masters who have obtained certificates of qualification since the commencement of the voluntary system in October 1845, is, as follows:—

First Class Extra	20
First Class	81
Second Class	160
Third Class	36
	<hr/>
	Total 297

This is very small in comparison with the number of ships of which

the mercantile marine consists, and the number of masters necessarily required to command them. It affords, however, some hope that, as the system gets better understood there will be less of that unwillingness which has hitherto been felt by many very excellent men to undergo the required examination, and who, if it were possible to examine them on their own quarter-decks, would doubtlessly much more freely demonstrate their qualifications, than such men generally can do when closeted with a grave Board of Examiners.

It appears to us that it is still very desirable to distinguish those ports at which the system is acted upon, and the effect produced. Notwithstanding the remarks we ventured to make in December last, there are, nevertheless, several ports at which Examining Boards have been established by the Board of Trade; but where the system has remained wholly inoperative.

It is the more due, therefore, to those ports where an evident encouragement has been given to the efficient working of the plan, that the results should be as clearly shewn as possible. This will be best illustrated by the following statement, which gives the total numbers of Masters and Mates examined and passed at the several ports against the same expressed.

Masters.	Class Extra.		Class.			Mates		
	First.	1st.	2nd.	3rd.	Class-			
					1st.	2nd.	3rd.	
Trinity House London	1	44	75	4	2	13	4	
Board of Examiners Liverpool	17	14	1	0	2	1	0	
Trinity House Dundee	0	8	4	1	5	3	2	
“ Newcastle	0	0	6	1	0	3	0	
Branch Board Portsmouth	1	7	7	0	4	4	0	
“ Plymouth	0	0	6	2	2	5	4	
Marine Board South Shields	0	2	60	27	0	0	0	
Pilot Board Glasgow	0	2	0	0	0	0	0	
Trinity House Leith	1	2	0	0	1	0	0	
“ Great Yarmouth	0	2	1	1	0	0	0	
	20	81	160	36	16	29	10	
Total	297				55			

Except at South Shields, a decided preference seems given to the Trinity House in London; and here we would repeat that for many reasons, but especially to guard against local prejudices, and their annoying consequences, it is desirable that the masters of merchant ships should present themselves for examination at the office of the Trinity Corporation on Tower Hill. With respect to South Shields, it cannot fail to be gratifying to see that the system is working fairly at that port.

We sincerely hope that the masters who have subjected themselves to this new species of *overhauling*, will receive their due measure of reward. It is still most remarkable that at the Scotch ports little or nothing has been done notwithstanding the clamour which was raised against the Government for not having earlier taken up this important subject.

If however, we are rightly informed, a positive order has very lately been issued by the Lords Commissioners of the Admiralty, stipulating that all ships intended to be offered to that department, either to serve as transports or for the conveyance of stores shall be commanded by officers who have obtained certificates of qualification. This we long ago predicted would be the case; and we rejoice, therefore, to find that the voluntary system will now receive an impulse from this *compulsory* step, which will awaken shipowners to the consideration of their true interests.

The public must have seen that in the proceedings of the select committee of the House of Commons on the navigation laws, Admiral Dundas has made the most praiseworthy exertions to give effect to the voluntary system. In the evidence of Duncan Dunbar, Esq., chairman of the General Shipowner's Society, and a very large shipowner, he states, in answer to the question, "What is your opinion with regard to the general characters of the masters and mates in the Merchant Service?" "I think that they are a very respectable body of men. I am of opinion it is desirable that Masters and Mates should undergo an examination before entering upon service, in their respective capacities, but I think it would be difficult to make a compulsory system, the Masters and Mates I myself employ, all undergo an examination with the view of testing their ability in nautical affairs."

Here then we have the advantage of an experienced observant shipowner, who deems it necessary not only for his own interest, but as we believe equally for the sake of humanity, giving evidence strongly in support of the voluntary system as it now exists. In another question Admiral Dundas asks him, "if as a landsman, he was going to America, and had the choice of two ships, one officered by men who had been examined, and the other by persons who had not, which ship he would prefer to go in?" Mr. Dunbar, in answer, says, "If he knew the owners, he should as soon sail in one as the other." He admits, however, that as a stranger to the owners, he would go on board the vessel officered by men whose nautical knowledge had been tested before a Board, and he further adds, that he himself always makes strict enquiry with regard to the integrity and ability of Masters and Mates before he employs them. The same precautions are perhaps, or at least ought to be taken by every shipowner, and that being the case, it is really difficult to account for the apparent indifference which has hitherto been shown to the government plan. It is however, obvious that if it do not succeed some other step must be taken for introducing a more effective measure.

We observe that on May 11th, Capt. Fitzroy in his place in the House, asked "Whether it was the intention of government to introduce a bill making it compulsory on masters of Merchant vessels to undergo examination." The vice president of the board of Trade, Mr. M. Gibson, said, "he was not aware that it was the intention of government to introduce any such bill". There is something ominous, however, in this question, and if, as is extremely probable, the Commissioners for Colonial Land and Emigration, should promptly follow the example set by the Lords of the Admiralty, and insist upon the ships' intended for the conveyance of Passengers and Emigrants being commanded by qualified officers, we

have no doubt whatever, that without any further interference, a very considerable improvement would soon be found in the working of the voluntary system.

A List of all the Masters and Mates in the Merchant Service who have voluntarily passed an examination, and obtained Certificates of Qualification for the Class against each assigned, under the regulations issued by the Board of Trade, since the 26th January last.

MASTERS.

Date.	Name of Party who has received the Certificate.	Class of Certificate.	Age.	Present or last previous service.	No. of Register Ticket.	Name of Examining Board.
1847.						
Jan. 25	Robt. M. Taylor	2nd	23	Mary, 207 tons		Ma. Bd. S. Shields
" 25	William Ballard	2nd	29	Rumbold, 96 tons ... (as Mate)	187623	Tr. ho. Yarmouth branch
" 26	John Ellis	1st	30	Martha, 248 tons ...		Bd. of Ex. Liverpl
" 26	Wm H. Grebow.	1st	35	Wm. Murray, 146		Bd. of Ex. Liverpl
" 30	Barth. Davidson	2nd	26	Huron, 271 tons (as mate)		Ma. Bd. S. Shields
" 30	Thos. Ingram...	2nd	29	Vigilant, 226 tons (as mate)		Ma. Bd. S. Shields
" 29	John Melvill ...	3rd	25	Mary, 390 tons (as temporary master)	31871	Tr. ho. Plymouth branch
Feb. 1	Isaac Paddle ...	1st	29	Isabella Blyth, 443 tons	18675	Tr. ho. London
" 2	Robert Joy.....	1st ex.	26	Acadia, 1,200 tons (as second officer)	112979	Bd. of Ex. Liverpl
" 2	John Hind	1st ex.	27	Caledonia, 1,400 tons (as first officer)	108020	Bd. of Ex. Liverpl
" 3	Robert Storey	2nd	25	Renovation, 325 tons (as mate)		Ma. Bd. S. Shields
" 4	Robert Stride...	2nd	32	Isabella Blyth, 443 tons (as mate)	343866	Tr. ho. London
Jan. 30	John Mallison Rogers	2nd	25	Clyde, 1,159 tons ... (as chief officer)	55944	Tr. ho. Portsmt. branch
Feb. 5	John Ellerby ...	1st	24	Gilmore, 500 tons ... (as mate)	19977	Tr. ho. London
" 9	Sam. T. Downes	1st ex.	33	Caledonia, 1,200 tons (as second officer)	170123	Bd. of Ex. Liverpl
" 9	James Sparrow	1st ex.	23	Levantine, 343 tons (as first officer)	159836	Bd. of Ex. Liverpl
" 12	Dug. Campbell	2nd	36	Medway, 1,000 tons (as second officer)	175936	Tr. ho. Portsmt. branch
" 12	John H. Jellicoe	2nd	22	Clyde, 1,159 tons (as second officer)	54979	Tr. ho. Portsmt. branch
" 13	Francis A. Sims	1st	28	Joshua Waddington 440 ts (as chief mate)	129064	Bd. of Ex. Liverpl
" 13	John Leary ...	1st ex.	27	Queen, 650 tons		Bd. of Ex. Liverpl
" 15	William Allen..	1st	36	Dee (as Commander)		Tr. house, Leith
" 16	W. M. Snelling	1st ex.	24	Mary Ann, 216 tons		Bd. of Ex. Liverpl
" 15	Ben. Newton ...	2nd	...	.....		Tr. ho. Newcastle
" 10	Thomas Swan	2nd	26	Catherine, 263 tons (as mate)		Ma. Bd. S. Shields

Feb.	10	John Mowat ...	2nd	33	Sarah Barry, 269 ...		Ma. Bd. S. Shields
	"	17	Murd. M'Leau	3rd	31	Lady Clarke, 450 ... 327806	Tr. ho. London
	"	20	Jas. Garnock jr.	1st	25	Hope, 330 tons	Bd. of Ex. Liverpl
	"	20	W. Henderson Horner	1st ex.	27	Delhi, 357 tons	Bd. of Ex. Liverpl
	"	20	George Nickels	3rd	31	St. Lawrence, 236... tons (as mate)	Ma. Bd. S. Shields
	"	23	Robert Walker	1st	28	Calcutta, 716 tons... 121012 (as second mate)	Bd. of Ex. Liverpl
	"	24	Hugh Inglis ...	1st	32	Alexander, 392 tons	Tr. ho. Dundee
	"	26	Frederick Natt	2nd	27	Eleanor, 268 tons ... (as mate)	Ma. Bd. S. Shields
	"	26	George Abbott	2nd	39	Dee, 1,350 tons	Tr. ho. Portsmt h- branch
Mar.	2	Thos. William Asbridge	1st	24	Rajah Bassa, 450 ... 38122 tons (as first mate)		Bd. of Ex. Liverpl
	"	2	H. F. Grebow	1st	34	Hopkinson, 396 tons 164172	Bd. of Ex. Liverpl
	"	1	John Harons ...	2nd	33	Ruth, 245 tons	Ma. Bd S Shields
	"	4	Geo. H. Wilson	1st	27	Severn, 1,900 tons... 252553 (as chief officer)	Tr. ho. Portsmt h. branch
Feb.	26	Joseph Swan ...	2nd	21	.....		Tr. ho. Newcastle
Mar.	8	Philip Clendon	2nd	30	.....		Tr. ho. Newcastle
"	13	John Hay	2nd	26	Cowan, 241 tons ...		Ma. Bd S. Shields
"	13	Thomas Wm. Sawyer	2nd	27	Teviot, 1,121 tons... 207729 (as mate)		Tr. ho. London
"	16	James Fenton	2nd	23	Enterprize, 313 tons 158498 (as mate)		Bd of Ex. Eiverpl
"	19	Andrew Smith	2nd	26	Chance, 226 tons		Ma. Bd. S. Shields
"	19	Alex. Maclean	2nd	33	Ramilics, 740 tons		Tr ho. London
"	22	James Parsons	1st	31	Bangalore, 511 tons 324561		Tr. ho. London
"	23	William Hooper	2nd	28	Jane Shirreffs, 240		Ma. Bd. S. Shields
"	23	George Peacock	3rd	37	Rosella, 213 tons ... (as mate)		Ma. Bd. S. Shields
"	25	J. K. Henderson	2nd	22	.....		Tr. ho. Newcastle
"	26	Wm. Hewison	2nd	30	.....		Ma. Bd. S. Shields
"	26	John Penny ...	2nd	29	Horatio, 280 tons ...		Ma. Bd. S. Shields
"	25	Walter Paton, jr	1st ex.	22	.....		Tr. ho. Leith
"	29	Wm. Stephen Andrews	1st ex.	32	Medway, 844 tons ...		Tr. ho. Pts branch
"	30	Richard Revett	1st	32	Trent, 1,600 tons		Tr. ho. Yar brnch
April	1	John Carvell ...	3rd	29	Norfolk, 349 tons ... 10073 (as mate)		Tr. ho. London
"	1	Joseph Dixon...	2nd	46	Doncaster, 246 tons		Ma. Bd. S. Shields
"	1	John Huggitt...	3rd	34	William, 186 tons		Ma. Bd. S. Shields
"	3	Geo. Hutchison	2nd	41	Urania, 279 tons ...		Ma. Bd. S. Shields
"	8	Robert Davison	2nd	45	Hylton, 231 tons ...		Ma. Bd. S. Shields
"	8	L. Sinclair	3rd	28	John Burrell, 243 ... tons (as chief mate)		Ma. Bd. S. Shields
"	9	Francis E. Moss	1st	31	Conway, 587 tons ...		Tr. ho. Pts branch
"	9	Nicholas Prette- john	2nd	26	Teviot, 1,121 tons ... 252886 (as mate)		Tr. ho. London
"	13	John Johnson...	3rd	28	Sylph, 172 tons		Ma. Bd. S. Shields
"	14	Tilmouth F. Dye	2nd	23	Eclipse, 540 tons ... 4268 (as mate)		Tr. ho. London
"	16	William Pollard	2nd	31	Thalia, 286 tons ...		Ma. Bd. S. Shields

April 16	James Peterkin	2nd 26	Tagus, 265 tons.....		Ma. Bd. S. Shields
" 16	T. F. Cockburn	2nd 35	Forth, 1,147 tons ... (as chief officer)	336545	Tr. ho. Portsmt. branch
" 20	Richard J. Case	1st 38	Caledonia, 281 tons		Bd. of Ex. Liverpl
" 21	Roger Shotton	3rd 44	Hope, 213 tons		Ma. Bd. S. Shields
" 19	William Ary Davidson	2nd 33	Eling Grove, 351 ... (as mate)	4430	Tr. ho. London
" 19	Alfred C Dando	2nd 24	St. Vincent, 628 tons (as mate)	162	Tr. ho. London
" 22	John Josiah Thompson	2nd 25	Watkins, 236 tons (as mate)		Ma. Bd. S. Shields
" 23	Robert Sutton Shuyler	2nd 24	Avon, 1,450 tons ... (as mate)	207728	Tr. ho. London
" 23	John Ross	1st 42	Hashemy, 638 tons		Tr. ho. London
" 23	John Urquhart	2nd 25	Ds. of Northumbd. 541 tons (as mate)	329112	Tr. ho. London
" 26	Henry J. Wolfe	2nd 43	Avon, 1,148 tons ... (as chief officer)	252704	Tr. ho. Portsmt. branch
" 27	W. Downward	1st 28	Albert Edward 327 tons	258141	Bd. of Ex. Liverpl
" 27	John Work.....	2nd 35	Duke of Clarence ... 22½ tons		Ma. Bd. S. Shields
" 30	C. Hunt Putt...	2nd 25	Lady Lilford, 596 ... (as mate)	27404	Tr. ho. Plymouth branch
May 3	Joshua Stephens	2nd 30	Dorothy, 244 tons...		Ma. Bd. S. Shields
" 4	William Platts	2nd 32	.....		Tr. ho. Newcastle
" 4	T. P. Taylor ...	1st 28	Anna Maria, 487 tns		Tr. ho. London
" 3	John Johnson...	2nd 28	Sylph, 172 tons		Ma. Bd. S. Shields
April 30	Sinclair T. Loutit	2nd 33	Plantagenet, 806 tns (as mate)	10255	Tr. ho. London
" 30	Christopher T. Elmstone	2nd 25	Joseph Some, 774 tons (as mate)	324297	Tr. ho. London
" 29	Geo. Thompson	2nd 37	Joseph Some, 774 tons		Tr. ho. London
" 30	Robert Henry Binnie	2nd 34	Princess Royal, 564 tons		Tr. ho. London
May 7	A. Y. Marshall	1st 25	Lerwick, 283 tons...		Bd. of Ex. Liverpl
" 6	Francis Cadell	1st 25	.....		Pilot Bd. Glasgow
" 6	George Abbott	1st 40	Dee, 1,700 tons (as mate)	26218	Tr. ho. London
" 7	William Jasper	2nd 26	Endymion, 42 gs A. B.		Tr. ho. Plym. brh.
" 10	Francis Stuart	1st 27	City of Derry, 474. . tons (as mate)	18059	Tr. ho. London
" 13	Henry Waugh	1st 25	Samarang, 600 tons (as mate)	26782	Tr. ho. London
" 14	John Whyte ...	2nd 42	Berkshire, 583 tons		Tr. ho. London
" 13	Ben. Freeman...	2nd 22	Duchess of Northd. 541 tons	329040	Tr. ho. London
" 13	John Plant.....	3rd 39	Mariner, 600 tons ... (as mate)	33942	Tr. ho. London
" 17	Henry Hudson	2nd 39	Kelso, 456 tons		Tr. ho. London
" 19	Jas. Jos. Kelly	1st 22	Castilian Maid, 120 tons (as mate)	204331	Bd. of Ex. Liverpl
" 20	Charles Spencer Tindale	1st 30	May Flower, 327 ... tons (as mate)	5376	Tr. ho. London
" 19	William Thom	2nd 28	Arethusia, 209 tons (as mate)	17598	Tr. ho. London
" 22	Ben. W. Holland	1st 36	Medway, 1,800 tons (as third mate)	252880	Bd. of Ex. Liverpl

May 18	James Osborne	1st 28	Boync, 620 tons..... (<i>as mate</i>)	326089	Tr. ho. London
" 20	Wm. C. Douty	1st 46	Princess Royal, 543 tons	.....	Tr. ho. London
" 24	Franc. Edmund Browne	2nd 28	Ben. Buck Green ... 528 tons (<i>as mate</i>)	6189	Tr. ho. London
" 20	Alex. White ...	2nd 27	Mary Bannatyne, ... 535 tons (<i>as mate</i>)	18247	Tr. ho. London
" 22	Suth. M'Beath	2nd 45	Southampton, 1,000 tons, (<i>as mate</i>)	31013	Tr. ho. London
" 25	Jn. Whitehead	2nd 35	Duke of Cornwall, ... 580 tons	.....	Tr. ho. London
" 25	Alex. M'Clel- land	1st 30	Sisters, 150 tons ... (<i>as mate</i>)	111032	Bd. of Ex. Liverpl
" 25	Robert Ord.....	1st 34	Alert, 232 tons .....	.....	Bd. of Ex. Liverpl
" 26	William Freer	2nd 29	Curraghmore, 381... tons (<i>as mate</i>)	34767	Tr. ho. London
" 29	John Leitch ...	1st 30	Deogaum, 520 tons .....	.....	Bd. of Ex. Liverpl
" 29	George Whitby	2nd 29	Bucephalus, 985 tns (<i>as mate</i>)	26882	Tr. ho. London
" 29	Francis Malone	2nd 30	Eclipse, 540 tons ... (<i>as mate</i>)	11869	Tr. ho. London
June 1	Hen. T.Hart ...	2nd 37	Africa, 277 tons.....	.....	Tr. ho. London
" 3	Wm. Atkinson	2nd 28	Dorothy, 244 tons... (<i>as mate</i>)	.....	Ma. Bd. S. Shields
" 3	John Bell	2nd 29	Stork, 313 tons .....	.....	Ma. Bd. S. Shields
" 4	E. Geo. Perry March	2nd 29	Viscount Sandon, ... 540 tons (<i>as mate</i>)	257348	Tr. ho. London
" 4	William Loader	2nd 49	Sir Robert Sale, 741 tons	.....	Tr. ho. London
" 4	Henry Roberts	1st 30	Severn, 1,800 tons... (<i>as chief mate</i>)	19959	Tr. ho. Portsmth. branch
" 7	Chas. Hamilton Onslow	1st 27	Tweed, 860 tons (<i>as second officer</i>)	351984	Tr. ho. Portsmth. branch
" 8	William Scholes Johnson	1st 30	Oriental Queen, 645 tons (<i>as mate</i>)	346856	Tr. ho. London
" 7	Hen. Criddeford	2nd 28	Nile, 283 tons..... (<i>as mate</i>)	57399	Tr. ho. London
" 7	Jas. Augustus Davies	2nd 31	Constant, 535 tons (<i>as mate</i>)	.....	Tr. ho. London
" 7	Thomas Henry Hadley	2nd 24	Viscount Sandon, ... 540 tons (<i>as mate</i>)	129081	Tr. ho. London

MATES.

Jan. 20	William Hynd	3rd 26	Commodore Napier, 291 tons (<i>as seaman</i>)	57480	Tr. ho. Dundee
" 29	Jas. Metherall	2nd 23	Fanny, 233 tons.....	241988	Tr. ho. Plymouth
Feb. 15	John W. James	2nd ..	.....	.....	Tr. ho. Newcastle
" 18	F. B. Sladden...	2nd 22	Lee, 79 tons	28274	Tr. ho. London
" 23	Rob. T. Dundas	2nd 21	Garland, 162 tons (<i>as seaman</i>)	324896	Bd. of Ex. Liverpl
Mar. 9	W. F. Lapidge	1st 25	Grecian, 486 tons ... (<i>as senior mate</i>)	.....	Tr. ho. Plymouth branch
" 16	F. M. Madox ...	2nd 25	Conway, 1,350 tons (<i>as second officer</i>)	26245	Tr. ho. Portsmth. branch
" 19	George Henry Cleveland	2nd 26	Japan, 369 tons..... (<i>as second mate</i>)	34391	Tr. ho. Portsmth. branch

Mar. 20	Wm. Stephens	3rd	22	Wellington, 500 tns (as third mate)	32428	Tr. ho. Plymouth branch
" 25	R. Kay Johnson	2nd	24	.....	.....	Tr. ho. Newcastle
April 6	Daniel Charles O'Slaughter	1st	27	Queen, 3,000 tons (as midshipman)	.....	Tr. ho. Plymouth branch
" 8	W. F. Fridham	3rd	28	Chili, 700 tons	327249	Tr. ho. London
" 27	Jos. C. Skerrett	1st	22	Litherland, 305 tons (as second mate)	163379	Bd. of Ex. Liverpl
May 13	Thos. M. Forbes	2nd	24	Barham, 1,200 tons (as midshipman)	22097	Tr. ho. London
" 13	Thomas William Thatcher	2nd	28	Thames, 852 tons (as first officer)	220694	Tr. ho. Portsmth. branch
" 13	Henry William Wise	2nd	20	Royal Albert, 662 tns (as ordinary seaman)	250379	Tr. ho. Plymouth branch
" 22	James Laing	2nd	27	Edmondsbury, 523 tons	18927	Tr. ho. London
" 22	Wm. Francis Norie	2nd	21	Ellen, 230 tons	7711	Tr. ho. London

Board of Trade, June 9th 1847.

THE MEDALS FOR WAR SERVICES.—Admirals Sir Thomas Byam Martin, G.C.B., and Sir William Hall Gage, G.C.H., Vice-Admiral the Hon. Sir Thomas Bladen Capal, K.C.B., and Sir James Alexander Gordon, K.C.B., are appointed to form the board referred to in the Admiralty circular of the 1st inst., and investigate the claims of applicants for the war decoration. The board will commence their labours on Monday next.

MEDALS FOR HER MAJESTY'S NAVY.

Admiralty, June 1st, 1847.

HER Majesty having been graciously pleased to command that a medal should be struck to record the services of her fleets and armies during the wars commencing in 1793 and ending in 1815, and that one should be conferred on every officer, non-commissioned officer, petty officer, soldier, seaman, and marine, who was present in any action, naval or military, to commemorate which, medals have been struck by command of Her Majesty's Royal predecessors, and distributed to superior officers, according to the rules of the service at that time in force.

All officers, petty officers, seamen, and marines, who consider that they are entitled to receive this mark of their Sovereign's gracious recollection of their services, and of Her desire to record the same, are to send, in writing, the statement of their claims, addressed to the Secretary of the Admiralty, Whitehall, London, specifying for what action, and at what period of time, the claim is preferred, and the names of the persons or the titles of the documents by which it can be established.

A board of officers will be appointed to take into consideration the facts stated in these applications, and to report upon the same to the Lords Commissioners of the Admiralty, for the information of Her Majesty, so as to enable those commanded by Her Majesty to deliver to the claimants the medals accordingly.

The names of all those who may apply for the naval medal will be classed alphabetically, and to each name will be appended the actions at which the claimant may have been present, proof of which must be given to the entire satisfaction of the board.

The occasion for which medals have been granted by the Sovereign are specified below, for general information and guidance.

By command of the Lords Commissioners of the Admiralty,
H. G. WARD.

Gold Medals (to Flag Officers and Captains) were issued by the Admiralty for the actions undermentioned.

- Lord Howe's action of the 1st June, 1794.
 Lord St. Vincent's action, off Cape St. Vincent, the 14th Feb. 1797.
 Lord Duncan's battle of Camperdown, on the 11th Oct. 1797.
 Lord Nelson's battle of the Nile, the 1st Aug. 1798.
 Capt. Sir Edward Hamilton, H.M.S. *Surprise*, recapture of the *Hermione*, the 25th Oct. 1799.
 Lord Nelson's battle of Trafalgar, the 21st Oct. 1805.
 Sir Richard Strachan's action, the 4th Nov. 1805.
 Sir John Duckworth's action, off St. Domingo, the 6th Feb. 1806.
 Capt. Brisbane, H.M.S. *Arethusa*, with H.M.S. *Anson*, *Fisgard*, and *Latona*, capture of the Island of Curaçoa, the 1st Jan. 1807.
 Capt. Michael Seymour, H.M.S. *Amethyst*, capture of the *Thetis*, the 10th Nov. 1808.
 Capt. Stewart, H.M.S. *Seahorse*, capture of the *Badere Zaffer*, the 6th July, 1808.
 Capt. Mounsey, H.M.S. *Bonny Citoyenne*, capture of the *Furieuse*, the 6th July, 1809.
 Capt. William Hoeste, H.M.S. *Amphion*, with H.M.S. *Cerberus*, *Active*, and *Volage*, action off Lissa, the 13th Mar. 1811.
 Capt. Christopher Cole, H.M.S. *Caroline*, capture of the *Banda Neira*, the 9th Aug. 1810.
 Capt. Talbot, H.M.S. *Victorious*, capture of the *Rivoli*, the 22nd Feb. 1812.
 Capt. Broke, H.M.S. *Shannon*, capture of the *Chesapeake*, the 1st June, 1813.
 Capt. E. Palmer, H.M.S. *Hebrus*, capture of *L'Etolle*, the 27th Mar. 1814.
 Capt. H. Hope, H.M.S. *Endymion*, action with the *President*, the 15th Jan. 1815.

SHIPWRECKED FISHERMEN AND MARINERS' BENEVOLENT SOCIETY.

THE annual meeting of this admirable Institution, was held at the London Tavern, Bishopsgate Street, on the 21st May last. The hardships endured by the fisherman and the sailor entitle them to the strongest claim for sympathy; and with great consideration for the slender means of this class of men, the annual subscription required by this Society amounts only to 2s. 6d., which entitles him, in the event of losing his clothes by shipwreck, to have them made good; when the winds and waves have deprived the fisherman of the only means of support, the loss of boat or nets, the friends of this excellent establishment are open to relieve his wants, and to re-establish him in the world. In the event of death, a sum of money is presented to the widow, children, or aged relations, as the urgency of the case may require; and, notwithstanding, temporary relief is afforded by the Society, in many cases, to those who are not members, (and who could withhold assistance from a shipwrecked fellow-creature deprived of all his worldly store?) we would strongly urge on all masters of ships to impress on their crews the incalculable benefits arising to members of this Institution, in which they may expect a right to participate, while we would earnestly appeal to every Christian heart to aid in support of so noble an object as it holds out.

In our last Number, we noticed that in the town of Hull, 154 sailors had joined the Society, and introduced the names of some gentlemen who had become annual subscribers. We can only say, "Go, and do thou likewise."

The chair was taken by Major-General Sir James Cockburn, who briefly stated the object. The Secretary then read the report for the last year, ac-

ording to which, it appeared that, during that period, the Society had expended, in giving assistance to shipwrecked persons, £175. 13s. 6d. They had paid over to widows, orphans, and other relatives, in England, Ireland, and Scotland, various sums, shewn on the balance-sheet, which, together with the former item, amounted to £2006. 4s. 3d.

The report says, with reference to the prevailing calamity in Ireland and Scotland, the Committee had determined, that whilst the present distress existed, to relieve all cases arising out of any accidents from the sea, presented to them from thence, as largely as possible, consistent with the regulations. And they had further the satisfaction of reporting, that though the awful storms of the past year, which were so severely felt among the shipping, gave rise to applications for relief from so large a number as 122 widows, 265 orphans, 43 aged parents of the drowned, and 1495 shipwrecked fishermen and mariners, none were sent empty away, but in every case the heart of the widow and orphan was gladdened, and the poor mariner clothed and sent to his home.

The Committee need not say that they fulfil a pleasing duty, in gratefully acknowledging the generous and effectual help rendered them by the South Eastern, Great Western, London and North Western, Grand Junction, and a number of other railway and steam-packet companies. They have thus been enabled to apply the sums placed at their disposal with larger liberality in favour of the other objects contemplated by the Society, whilst the conveyance to their homes of those saved from wrecks has been so greatly facilitated, that, in many instances, the poor castaway has been himself the glad messenger that communicated to his friends his safety, 'ere they were aware of the danger to which he had been exposed. As an instance of the usefulness of the Institution, it is mentioned that the crew of a coasting vessel of Nevis, blown off the island and rendered unseaworthy, which were taken off by a French brig, brought to Havre, and forwarded thence by the British Consul to London, were received by the Secretary of this Society, and comfortably lodged two days at that admirable Institution, the Sailors' Home, and the third day saw them sailing down the Thames, on their way to their families in the West Indies.

One of the most important statements in the report is to the following effect :—That the Committee, looking with much gratification to the present state of the funds of the Charity, and the recent bequest of £500. by the late Andrew Macklen, Esq., to the "widows and families of shipwrecked fishermen and mariners," are anxious to extend its benevolent operations. And they therefore propose to apply such portion of its funds as may be convenient with the other objects of the Institution, for the purpose of affording further relief, independent of that granted at the time of the accident, to the widows of fishermen and mariners, whose husbands may have lost their lives in pursuit of their callings, or in the attempt to preserve the lives of others; and they look with confidence to the generous support of the public in this their design. The funds of the Society are in a flourishing state. Independent of a balance in the bankers' hands of £490, the Society holds about £11,500 in the public funds.

It was then moved and seconded, that the Report should be printed and published, which was agreed to.

Several Resolutions were moved and seconded by Capt. the Hon. F. Maude, Mr. Brewster, Mr. Wyndham, Capt. Sweney, Capt. Porter, Mr. Millard, Capt. Henderson, Capt. Whish, Rev. Mr. Stonestreet, Lieut. Lane, Mr. J. C. Hubbard, Mr. Stevens, Rev. Mr. Lang, and Col. Robinson.

The gallant Chairman having briefly acknowledged the thanks passed to him, the meeting separated.

The Society's Office is 26, Bucklersbury, where all communications may be addressed.

H.M.S. INFLEXIBLE.—The following is an abstract of the performance of the *Inflexible*, Com. J. C. Hoseason, on her passage from the Cape of Good Hope, and subsequently from the Cape to Sydney, New South Wales.

Date.	Coal	Dist.	Under steam or	Date.	Coal	Dist.	Under steam or
Aug. 1846.	consumption.	run by Pat. Log.	sail.	Sept. 1847.	consumption.	run by Pat. Log.	sail.
	Tons. Cwt.				Tons Cwt.		
10	20 1	111½	Steam.	6	... ..	144	Sail.
11	16 6	177½	ditto.				{ First part sail,
12	14 7	186	Steam and sail.	7	3 9	121	the latter steam.
13	9 15	186	ditto.	8	12 4	186	Steam and sail.
14	9 8	174	ditto.	9	13 10	192	ditto.
15	9 12	172½	ditto.	10	13 15	188	ditto.
16	10 10	188	Steam	11	13 0	195	ditto.
17	10 15	165	Steam and sail.	12	11 2	165½	ditto.
18	10 11	176½	ditto.	13	10 16	182	ditto.
19	9 13	176	ditto.	14	11 4	153	Steam.
20	11 13	194½	ditto.	15	11 7	127	{ Steam, the latter
21	9 1	182	ditto.				part sail alone.
22	8 9	173½	ditto.	16	... ..	90	Sail.
23	12 19	190	ditto.	17	9 12	132½	{ Partly sail, and
24	11 5	167	ditto.				partly steam.
25	10 17	194	ditto.	18	... ..	186	Sail.
26	10 16	188	ditto.	19	... ..	144½	ditto.
27	11 8	178½	ditto.	20	... ..	52	ditto.
28	11 10	164½	ditto.	21	... ..	85½	ditto.
29	15 12	159	ditto.	22	... ..	107	ditto.
30	13 2	162	ditto.	23	... ..	83	ditto.
31	8 9	153	{ Steam & sail, &	24	... ..	195½	ditto.
			partly sail alone.	25	... ..	164	ditto.
Sep.				26	4 2	108	{ Steam and sail
1	... ..	137	Sail.	27	8 11	80	(at St. Helena)
2	... ..	141	ditto.	28	6 1	50	ditto.
3	... ..	156	ditto.				ditto.
4	... ..	165	ditto.				
5	... ..	177	ditto.				

Arrived in Table Bay.

Distance run by patent log:—

Under sail,	2296½	miles.
Under steam and sail,	5429	"
Total in 50 days,	7725½	"

Consumption of Coals,	Tons.	Cwt.
	374	12

In the second voyage from Simon Bay to Port Jackson, Sydney, from November 8, to December 13, the distance run was—

Under sail,	1036	miles.
Steam and sail,	5356	"
Total in 36 days,	6392	"

Consumption of coals during the voyage,	Tons.	Cwt.	Qrs.
Ditto ditto per day,	158	10	0
Ditto ditto per hour,	15	3	2
	0	13	0

It appears that the *Inflexible* ran 1231 nautical miles against a dead foul wind, during which time she spoke the *Wanderer*, brigantine, and *St. George*, fast sailing merchantmen, and reported the former twelve days, and the latter six days, before their arrival at Port Jackson.

Hong-Kong Register, Feb. 16th, 1847.

SIR THOMAS MITCHELL.—We have great pleasure in being able to lay before our readers some information respecting Sir Thomas Mitchell and his party of explorers. Corporal Graham, one of the party, (formerly of the Liverpool Plains Police,) arrived at Tamworth on the morning of Thursday last, (Feb. 11.) with despatches for the Government, which were forwarded to Sydney by that day's mail. Sir Thomas was on his return, and the trooper left him ten days previously, about 500 miles from Tamworth. An assistant surveyor accompanied the corporal part of the way, and then returned. The party did not reach Port Essington; but it is said they went sufficiently far to establish the fact of an easy communication with that part of the continent. It has also been ascertained that Capt. Sturt's desert has many fine rivers running through it. The country is described as superb, and there is said to be a good dray road so far as the party penetrated. We are happy to say that there had been no casualties in the party. They had no collision with the natives, though much jealousy and suspicion were exhibited by them; it is, therefore, highly gratifying to know that Sir Thomas and his party are returning in safety from their arduous and perilous undertaking, and that a large and valuable addition has thus been made to our knowledge of the country without the sacrifice of human life.—*Mail. Mer.*

From the same *Register* we also learn that the Proprietors of the *Australian* are about to publish a map, comprising Sir Thomas Mitchell's travels, marked in red, while Dr. Leichhardt's parallel route will be marked in blue. The course of these two routes approached each other in lat. 242°, within about sixty longitudinal miles. The number of miles trodden, or ridden over, by Sir Thomas, though confined to a fourth of the space trodden by Leichhardt, were as numerous (on account of their windings or mazes,) as those of the latter; while the territory surveyed trigonometrically by Sir Thomas was greater than Australia Felix. The *New Victoria* and *Claude* territory surveyed, comprising about 180,000 square miles, or about 115 millions of acres.—*Australian Journal.*

ROHDE'S SIGNALS.

*Royal Department for Foreign Affairs,
15th April, 1847.*

THE King of Sweden and Norway has recently conferred on Commodore Rhode, of the Danish navy, the Swedish order of *the Sword*, in testimony of the high sense which his Swedish Majesty entertains of the importance of the gallant Commodore's System of Signals.

We annex a translation of the letter, accompanying the order of Knighthood, transmitted through the Foreign Office, in Copenhagen:—

“His Excellency, the Swedish and Norwegian Ambassador, has communicated to this department, that his Majesty, the King of Sweden and Norway, has been graciously pleased to bestow upon you, *Knighthood of the order of the Sword*, in order to mark to you the sense which his Majesty entertains of the excellence and importance of your System of Signals, and his high approbation of the same.

“It is with sincere pleasure, that this department complies with the request of the Ambassador, and conveys to you this well merited decoration.

(Signed) REVENTLOW CRIMINEL.

To Commodore Rhode, Harbour Master
of the Island of St. Thomas.

WESTERN AUSTRALIA.—The news from this colony is of importance. The governor is dangerously ill; his illness appears to have been of long continuance. The colonists are much pleased with him. The papers say, “seriously as his government has been impeded by illness, yet he has succeeded in winning the respect, and in a great degree, the attachment of the public.” The Hon. Peter Brown, Colonial Secretary, died on the 5th of November last, after a lingering and painful illness of many months’ duration. He was in his 49th year; a native of Dumfriesshire. The harvest of 1846 was concluded towards the end of December. Westward of coast range, the return was understood to be fair. To the east of the range, the crop was believed to be deficient to the amount of one-third. The whaling season had closed: it yielded 186 tons, value £6,130, to which, if we add £700 or £800 for bone, we shall have a total of nearly £8,000 gained to the colony this year by whaling only. Cheese, bees’-wax, and dried fruits, are being added to the produce of the settlement. The trading industry of the colony was keeping pace with the productive. The *Vixen* had just returned from a trip to Ceylon, and was about to make another with a cargo of sheep, horses, sandal-wood, &c. The intercourse with the Mauritius continued to be actively pushed, though complaints are made of the heavy customs and other duties in that colony, and obstructions interposed to prevent the despatch of business. As in the province of South Australia, the development of the mineral wealth of the colony was engaging much attention at Swan River. A considerable quantity of lead ore had been found in the Darling range, near the river Canning, about 15 miles from Perth, and little more near the shipping port of Fremantle. Good specimens of copper ore have been found in abundance near Perth: but the greatest excitement was occasioned by the discovery of an extensive bed of fine bituminous coal to the north of Perth. It was discovered in the month of August or September, by the Messrs. Gregory, who started from the settled part of the colony on the 7th of the former, and returned to it on the 22nd of the latter month, having travelled in the interim 1,100 miles by computation. During this excursion, the coal was discovered. The schooner brought 5 cwt. of it to Fremantle on the 28th of December last. The communication with the coast was of a fair description, along a country almost level, and calculated to form a good hard road, without any outlay of capital. Scarcely of less importance than the finding of this coal is the discovery that a vast extent of fine country exists to the northward of Moresby’s Flat-topped Range, “precisely in the direction described by Capt. Gray, and corresponding with his account in every particular.” The exploring party discovered a small harbour, suitable for vessels not drawing more than 15 feet water, about eleven miles north of Champion Bay. The country in the immediate vicinity of Champion Bay is miserably barren, but, further north, the good land reaches quite down to the coast. The natives were met in great number; they evinced a friendly spirit, are a tall, athletic race, and their huts of a more artificial structure than any hitherto met with on that continent.—*Nautical Standard*.

NAUTICAL NOTICES.

GOVERNMENT NOTIFICATION.

HIS Excellency Her Majesty’s Plenipotentiary, &c., is pleased to approve of the annexed regulations, drawn up by H.M. Consul at Shanghai, and to direct that the same be published:—

Port Regulations for Shanghai.

1.—The limits of the port, on the sea side, are defined within the lines formed by Paou, Shaw Point bearing west, and the Battery, on the right bank at the mouth of the river below Woosung bearing south-west. The anchorage for loading and discharging cargo is off the Custom-house, and extends from the river called the Woosung Kow to that called the Yang-king-Pang.

For more detailed instructions on this head, the taking in and discharging of ballast, &c., masters of vessels are required to apply at the Consulate.

2.—Pilots can be obtained at Woosung to bring vessels off. In case of necessity, a gun will always bring one off; but the usual signal should first be hoisted. Pilots to take vessels down can be obtained at Shanghai, on application to the Consulate. Each pilot is authorized by letter under the Consular Seal to act; and the amount he is duly authorized to demand as a just remuneration for his services, as specified therein.

3.—All vessels must be moored within the period of two tides from the time of their arrival at the anchorage, and in no case can a vessel, after she is moored, move or shift her berth, without permission from the Consulate.

4.—Masters of vessels will report themselves within twenty-four hours after arrival, unless Sunday should intervene, and they will strictly attend in all other points to article 3, of the General Regulations of Trade.

5.—Masters requiring to beach their vessels for the purpose of inspection or repair, must apply to the Consulate for instructions.

6.—No goods can be landed, shipped or transhipped after sunset or before sunrise, or between Saturday evening and Monday morning; and no work is to be done on board vessels in harbour on Sunday, except such as may be necessary for the cleanliness and safety of the ship.

7.—The discharge of fire-arms from the merchant vessels in harbour is strictly prohibited, as also from the residences of British subjects.

8.—Masters of vessels are required to report any passengers at the same time as the arrival of the ships; and seamen and persons belonging to the vessels in harbour are not to be permitted to go on shore without a responsible person in charge—the masters being held distinctly responsible for the conduct of their men on shore. In the event of any men on liberty, remaining on shore after sunset, the master is required without delay to send an officer to find and take them on board, due and timely notice must also be given of the number and the names of passengers on board of any vessels leaving the Port.

9.—All cases of death, whether on board a British vessel, or on shore in the residence of a British subject, must be reported within twenty-four hours, together with the best information attainable of the cause of death in cases of sudden demise, to H.M. Consul, who will give directions respecting the place of interment.

10.—Accidents involving personal injury, loss of life or of property, whether on shore, or in the river, from collision of vessels, to be reported at the Consulate as soon as practicable; and, in cases of theft, peculation, or assault, where British and Chinese subjects are both concerned, a Chinese, if guilty of any Criminal act, and there be no officers of his country at hand, may be conveyed to H.M. Consul. But under no circumstances will British subjects be permitted to use violence to Chinese offenders, or take steps against the Chinese for the redress of their grievances.

11.—The distance to which British subjects may proceed into the interior for exercise or pleasure, is limited by the time required for the excursion. Twenty-four hours have been fixed on as the largest period of absence from Shanghai. This permission does not extend to sailors.

12.—All British sailors are required to register at the Consulate within twenty-four hours after their arrival in the Port; masters of vessels, their officers and crew, borne on the ship's papers, excepted.

(Signed)

RUTHERFORD ALCOCK, *Consul.*

British Consulate, Shanghai.

ANTON LIZARDO.—(*Directions by Commander F. Eagle, U.S. Navy.*)—Sacrificios or Green and Verde Island cannot be mistaken; therefore, bring Green Island to bear N.W.b.N., and steer S.E.b.S. (compass bearings;) this will carry you in sight of Blanquilla, a shoal which breaks. When you are two miles from Green Island, you can see a blank on the hills on your port bow; there are a number of patches, but this is the largest and most southerly—steer for it. As you approach, you will observe the houses and limekiln on Anton LizarDO: steer for them, keeping them open on the port bow, until you near Blanquilla Shoal. As you pass in, keep a cable's length from the light green water, the shoal on your port hand. You will be steering about S.E.b.E., doubling to E. $\frac{1}{2}$ N. You will now be one mile from the beach, where there is a breaker extending from 300 to 400 yards towards Blanquilla. Here your eye and lead are the best guides. Do not go in less than 6 or 8 fathoms on the Blanquilla side of the channel. If you shoal your water, steer towards the shore, and you will deepen from 8 to 16 fathoms, and from 16 quick to 8 and 2 fathoms. The channel is half a mile wide at least. As soon as you pass Blanquilla, or as soon as it is on with Salmedina, which is the southern and eastern island, you can haul up gradually to the eastward, steering where you please. Blanquilla bears W. $\frac{1}{2}$ N., and Salmedina E. $\frac{1}{2}$ N. from the ship. We are in 6 fathoms water and good holding ground about one mile from the island. The holding ground is excellent, being formed of thick sand and clay; and from the circumstance of the wind on this part of the coast never blowing any more than a fresh breeze from any quarter except N. and N.N.W., the anchorage is as secure as most harbours.

Sicilian Consulate General, London, 4th June, 1847.

BAY OF NAPLES CHANNEL OF PROCIDA.—Notice is hereby given that, from the 30th April, 1847, there will be exhibited upon the point called Gioppeto, in the Channel of Procida, in lat. $40^{\circ} 46' 30''$, and long. $11^{\circ} 40' 48''$, of the Meridian of Paris, a catadioptrical apparatus of the fourth class, producing a constant and unvarying light, at an elevation of about 23 metres above the medium level of the sea, and visible at a distance of about twelve miles, of sixty to the degree.

British Consulate, 19th April, 1847.

LOOS SHOALS.—From a communication to Her Britannic Majesty's Consul, by Mr. Thos. Leighton, master, and Mr. John Hanney, chief mate of the ship *Samuel*, of St. John's, (New Brunswick,) it seems that the "Loos Shoal," laid down in some charts of the West Indies, as being on the S.W. coast of St. Domingo, bearing S.S.E. $\frac{1}{2}$ S. from the east end of Isle of Vache, and distant from it about eighteen miles, is incorrectly located; that its true position is in $63^{\circ} 21' 31''$ W. long.,* and $17^{\circ} 37' 40''$ N. lat., or about eleven miles S.E.

* An error of 10° of long., appears in the above statement, it should be $73^{\circ} 21' 31''$, not $63^{\circ} 21' 31''$.—ED. N.M.

by $E \frac{1}{2} E.$, from that usually assigned to it. The Shoal has the appearance of a ship bottom upwards; is quite smooth, without weeds, and just under the surface of the water, so that it is doubtful if it could be seen, even from a short distance, if the water were smooth. In the present instance, on the 6th of March last, the heavy swell and broken water led to the discovery.—*Shipping Gazette.*

Edinburgh, 31st May, 1847.

LOCH FYNE.—The Commissioners of Northern Light-houses, hereby give notice, that they have moored two buoys in Loch Fyne, the positions and appearances of which are specified, by Mr. Alan Stevenson, Engineer to the Board, in the annexed table.

Name of Station.	Description of Mark.	Depth of Low Water at Spring Tides.	Magnetic Bearings of Marks and Lines of Intersection Meeting at the Station.
OFF ARDLAMONT POINT, OR BRADEICH ROCKS, ARGYLSHIRE.	8 FEET. BUOY RED.	$2\frac{3}{4}$ fathoms.	South-west extremity of West and Eastern Hills upon Ardlamont Point, in line with extremity of Point,—bearing $N. W. \frac{3}{4} W.$ Highest part of Bradeich Rocks,—bearing $N.N.W. \frac{1}{2} W.$ South end of Inchmarnock Island,—bearing $S. \frac{1}{2} W.$ Extremity of Land South of Ardlamont Point,—bearing $N b.W.$ The buoy lies about 115 fathoms distant from high water mark, from the Point, and about 45 fathoms from the highest part of Bradeich Rocks. N.B.—There is a small rock, which dries at low spring tides, about 10 or 12 fathoms outside of the highest main rock.
SKERNA SCAL-LAIG ROCK, OFF ENTRANCE TO CRINAN CANAL, ARGYLSHIRE.	7 FEET. BUOY RED.	$2\frac{1}{2}$ fathoms.	South wing of Sir John Ord's stables, in line with North extremity of Dunchoan Island,—bearing $N.E.b.E.$ Silver Craigs' Point, Island More,—bearing $S.E.b.S. \frac{1}{2} E.$ West wing of Ardrishaig Hotel, in line with Light-house upon end of Ardrishaig Pier,—bearing $N. \frac{1}{2} E.$ N.B.—The buoy lies upon the South-west Tail of the Shoal or Rock.

No duty is exigible in respect of these buoys.

By order of the Board,

(Signed) **ALEX. CUNNINGHAM, Secretary.**

Trinity House, London, 14th June, 1847.

GOODWIN SANDS.—This Corporation having caused a Nun Buoy of large size, coloured black, and bearing a staff and globe, to be moored off the Spit of the South Calliper of the Goodwin Sands, notice thereof is hereby given, and that the said buoy is placed in 10 fathoms at low water, spring tides, about $1\frac{1}{2}$ cables length from the dry sand, with the following marks and compass bearings, viz. :—

St. Lawrence Church (Ramsgate) its breadth open West of		
Ramsgate High Mill	- - - - -	N. $\frac{1}{2}$ W.
Shakespear or Hay Cliff, a little open of the South Foreland	- - - - -	W. $\frac{1}{2}$ S.
South Sand Head Light Vessel	- - - - -	W b.S.
The Beacon on the Goodwin Sand	- - - - -	N.E. $\frac{1}{2}$ N.

By order,

J. HERBERT, *Secretary.*

SWIN CHANNEL, Blacktail Spit of the Maplin Sand.—The Blacktail Spit of the Maplin Sand, in the Swin Channel, having grown up in a W.S.W. direction from the Blacktail Beacon. Notice is hereby given, that a buoy, coloured black, has been placed upon the said Spit, in $5\frac{1}{2}$ fathoms at low water, spring tides, and with the following marks and compass bearings, viz. :—

Shottington Mill, in a line with a remarkable clump of trees next	} S.S.W. } Westerly.
west of Harty Church	
Prittlewell Church, open to the northward of a brick-built house,	
twice the width of the house	N.W. $\frac{1}{2}$ W.
Blacktail Beacon, distant about one mile	E.N.E.
Mouse Light Vessel	E.b.S.
Nore Light Vessel	W. $\frac{1}{2}$ S.
East Shoebury Buoy	W. $\frac{1}{2}$ N.

By order,

J. HERBERT, *Secretary.*

CAUTION TO MARINERS.—*Roadstead of Taranaki, New Zealand.*—The following is an extract from a letter received at Lloyd's from Wellington, New Zealand, bearing date 21st Dec. 1846. "The roadstead of Taranaki, at all times hazardous for large vessels, has become more so since the moorings laid down by the New Zealand Company, have been carried away. No vessel can lie there in a north-wester, the prevalent wind."—*Shipping Gazette.*

Hydrographic Office, 20th May, 1847.

HAVANNAH.—*New Light-house on the Moro.*—Information has been received from Her Majesty's Consul, at Havannah, that a new Light-house has been erected on the Moro of Havannah, in lat. $23^{\circ} 9' N.$, long $52^{\circ} 22' W.$ of Greenwich, exhibiting a revolving light, at half minute intervals. The light is 158 feet above the level of the sea, and may be seen at the distance of twenty miles.

PUERTO RICO.—*New Light at San Juan.*—The new light has been exhibited at the entrance of the harbour of San Juan, in lat. $18^{\circ} 29' N.$, long $66^{\circ} 7' W.$ of Greenwich, at the height of 187 feet above the level of the sea. It revolves in eight seconds, and may be seen twenty miles.

GULF OF VENICE.—*New Light on the Porer Rock, near Cape Promontore.*—Notice is hereby given, by the deputation of the Exchange at Trieste, that a new Light-house has been built on the Porer Rock, in lat. $44^{\circ} 46'$, long. $13^{\circ} 53'$ E. of Greenwich, to replace the temporary one, and that a fixed light is now exhibited thereon, at the height of 111 feet above the sea, and 88 feet above the rock.

EXTRACT of a letter from Com. A. S. Hamond, of H.M.S. *Salamander* :—

The Latitudes and Longitudes of several Islands and Reefs in the Pacific Ocean.

	lat.	long.
Mopelia - - - -	$16^{\circ} 50'$ S.	$154^{\circ} 21'$ W.
An Island - - - -	$24^{\circ} 0'$ S.	$159^{\circ} 10'$ W.
Tuanahe (?) - - - -	$26^{\circ} 30'$ S.	$160^{\circ} 25'$ W.
A Reef - - - -	$24^{\circ} 45'$ S.	$148^{\circ} 20'$ W.
A Reef off Vavao, on which H.M.S. <i>North Star</i> struck -	$19^{\circ} 20'$ S.	$173^{\circ} 45'$ W.
An Island - - - -	$22^{\circ} 30'$ S.	$162^{\circ} 51'$ E.
A Reef - - - -	$18^{\circ} 0'$ S.	$174^{\circ} 48'$ E.
A Reef - - - -	$15^{\circ} 32'$ S.	$175^{\circ} 20'$ E.

On the Island of New Caledonia, there are several good harbours. Mr. Morgan, the master of the Missionary Barque, "*John Williams*," recommends one in particular off its south-east extremity, between Charlotte Foreland and Coronation Point, as an excellent place for heaving a large ship down. It possesses also the advantage of a good entrance, with abundance of fresh water.

Balade Harbour, also situated in New Caledonia, on its north eastern side, is reported well off.

On the Island of Pines, which lies very near the south end of New Caledonia, the inhabitants are exceedingly crafty and treacherous. They are also bold navigators, and, in their canoes, frequently visit the chain of islands forming the New Hebrides, for the purposes of war and barter. It behoves a ship to be very much on her guard, when in the vicinity of the island, as many vessels have been cut off by the natives, and the crew massacred.

There are, likewise, two very good harbours for ships on Sandwich Island, one of the New Hebrides.

NOTICE TO MARINERS—The Russian Government have published a notice to the effect that a beacon, having the form of a quadrangular pyramid surmounted by a globe, has been constructed on the northern Isle of Hoft, at the entrance of the bay of Narva, as a substitute for that which existed formerly, but which has fallen into decay.

The northern face of the Pyramid is painted white, and the three other sides black; it is $10' 5''$ above the level of its base, and its position $59^{\circ} 40' 42''$ N. lat., and $24^{\circ} 11' 14''$ long. W., calculated on the meridian of Paris.

The same Government have officially announced that the reparations of the light of the Island of Dago, not being complete, it will not be illuminated from the 1st of May (the thirteenth) to the 1st of August, (thirteenth) 1847.—*Nautical Standard.*

Tampico, 5th Feb. 1847. (Orders, No. 63.)

MUNICIPAL AND HARBOUR DUES AT TAMPICO, MEXICO.—The following general order, issued by General Patterson, Commanding Officer of the United States Forces, in Tampico, is important to all merchants who have commercial connexions with that port. The “wharfage and town dues” appear to be abolished, only in so far as the trade to and from the United States, in United States vessels is concerned; but the reduction of the “port charges and harbour dues” to one half, the reduction of “pilotage” outwards and inwards, from 9 to 7 dollars per foot; and the abolition of market dues are benefits in which all will participate:—

1.—It is hereby directed that all resolutions, ordinances, and laws, which may hereafter be passed by the *Municipal Committee* of Tampico, shall be submitted to the Commanding Officer of the U. S. for his consideration and approval, without which, they shall not be carried into effect.

2.—*Port charges and harbour dues* are hereby reduced to one half of the several sums, heretofore established by the Municipal Committee, and the amount collected from this source, will be paid weekly to the Senior Surgeon, of the army at Tampico, for the benefit of the Hospital.

3.—The charges heretofore exacted on produce or merchandize of any kind, under the name of *wharfage and town dues*, being an indirect tax on American citizens and American trade, will cease from this date to be made on any produce or merchandize coming from, or going to, the United States, in U. S. vessels.

4.—The regulations, authorizing the charges heretofore made under the name of *market dues*, so far as it relates to non-residents, is hereby abolished.

Persons, not residing in the town, will be permitted to come to market and occupy stands in any street or plaza, where they may sell butchers' meat of all kinds, poultry, game, milk, eggs, fruit and vegetables, and other produce, free from any tax or charge. This privilege will not be extended to persons living in the town, who purchase from those arriving to sell again. They are forbidden to monopolize any article brought to market, and they shall be subject to such taxes and charges, as the Municipal Committee may think proper to assess.

5.—The present rate of pilotage, viz:—5 dollars per foot for vessels arriving, and 4 dollars per foot for those clearing, is considered exorbitant, under the present increase of trade, especially as U. S. steamers frequently render their assistance. It is, therefore, ordered that the pilotage be reduced to 7 dollars per foot, in full, for pilotage inward and outward. The payment of this sum shall be certified by the collector before a clearance is given.

By order of Major General Patterson.

(Signed) GEO. A. McCALL, A. A. G.,
Head Quarters, Second Division,
Army of Occupation.

RELATING TO THE MEDUSA AND THE MANLEY.—A despatch has been received at Lloyd's from the Foreign Office, enclosing a copy of a despatch from Her Majesty's Consul at Manila, dated March 10th, 1847, reporting the loss of the British merchant ship *Medusa*, from Liverpool for China, in the Bay of Sampong, on the Pacific Coast of Manilla, and the total loss also of the *Manley*, from Lombock for Macao. The master of the *Manley*, which vessel was wrecked on the Montufar Shoal, states that this reef, which lies 13° 7' N. lat., 124° 7' E. long., about four miles from the shore, is not laid down in the charts, nor stated in “*Horsburgh's Directory*,” although lying near a common passage for vessels passing through the Straits of Bernardine.

CHANNEL ISLANDS.—Alarm Bell on the Caskets.—We copy from the *Jersey Daily Correspondent* the following communication from Mr. Goodridge, on the above important subject;—On Tuesday, May 18th, 1847, about 1h. 30m. P.M. I heard the sound of the new alarm bell, on the Caskets, being then about a mile and a half distant from them; it gave me so much pleasure and satisfaction, that I cannot well describe it, although the weather was clear at the time. The purpose of it, however, is that it may be sounded in foggy weather, to alarm the mariner of approaching danger, and I have no doubt, but it will be the means of preserving many a ship and crew from the disasters of shipwreck. The sound of the bell produces a good effect on the ear, being loud and distinct, not unlike a church bell. It is with feelings of deep gratitude, that I express my thanks to the Hon. Corporation of the Trinity Board, for their prompt measures, and for their attention to the solicitude of one, who can testify, by experience, the advantage arising from so important an improvement on the coast of the Channel Islands.

JAMES GOODRIDGE, SEN.,
Commander of the *Lady de Saumarez Steamer*.

DANGEROUS ROCK.—We understand that the brig *Poppy*, from China, in coming through the straits the other day, struck upon Congalton's Car, and remained upon it for four hours, having been obliged to throw overboard some cargo. The *Isis*, from Siam, also struck upon the same rock, and we believe that the brig *Amelia*, on her passage from this to Borneo, some months ago, also touched upon it. There is good reason to suppose that this dangerous rock has been productive of misfortune to a number of vessels formerly, which were described as striking off Romania Shoal, but which shoal possesses sufficient water upon it to enable vessels of moderate size and draught to clear it. In the absence of a light-house on Piedra Branca, we would strongly recommend that substantial buoys be put upon Congalton Car, Postillion Shoal, and one or two others of the most dangerous rocks in the straits, so as distinctly to indicate these dangers.—*Singapore Free Press*, 1st April.

MILFORD.—On the 5th June, Mr. Essex Lewis, farmer, of Great Castle, at Lindsay, near Great Castle Head, in this Harbour, picked up a sealed stone jar, it was firmly jammed between two rocks, and had to be broken before it could be extricated; it contained a slip of paper, in which the following was written:—"Noon, nautical time, April 20, 1847, on board barque *Edward Thorne*, Capt R. T. Johnston, from Callao, 130 days; have experienced dreadful weather, lost sails, fore-yard, and sundry other damage, loaded with guano. This note is thrown out in lat. 49° 8' N., long. 10° 6' W. The vessel is bound to Cork for orders.

ROBERT T. JOHNSTON.

CURRENTS IN THE SEA.—A slip of pasteboard, with writing on both sides, put into a bottle, was found near the larger of the Saltee Islands, off our coast, on Monday. The writing on one side is:—"Barque *Mohawk*, from Singapore to London, March 8, 1847; Current Papers. Please to send notice to the Editor of the *Nautical Magazine* when and where found, lat 49° 00' N., long. 12° 29' W., W. Douglas, master." On the other side, "Lat. 49° 00' N., long. 15° 29' W., W. Douglas, master." Underneath this is now written, in compliance with the request to state "when and where found." "West of Large Saltees Island, May 20, 1847."—*Times*, June 7th.

[It appears that the above was originally copied from the *Wexford Independent*, we are indebted to the London Journals for the information.—Ed. N.M.]

LAW

ILLANON PIRATES.—Before Dr. Lushington.—Dr. Addams applied, in conformity with the act of the 6th George IV., cap. 49, entitled,—“An Act for encouraging the destruction and capture of piratical ships and vessels,” that the Court would be pleased to accept certain affidavits as evidence of certain facts detailed in the petition, and that the Court would be pleased to pronounce that certain piratical persons were alive at the beginning of the attacks made by the crew of H.M.S. *Samarang*, and that a certain number of those piratical persons were killed during those attacks. The facts were supported by the affidavits of Sir Edward Belcher, late captain of H.M.S. surveying ship of war *Samarang*, Mr. Cooper, the purser, and others. It appeared that on the morning of the 8th June, 1844, whilst Her Majesty's ship was off the island of Gillolo, on her passage towards the Straits of Patientia, the captain quitted her in his gig, accompanied by the second barge of the *Samarang*, which was armed with a brass 6 pounder and small arms, and manned with 20 officers and seamen, under the command of Lieut. Henry Wm. Baugh, since deceased, for the purpose of fixing points of land, in pursuance of his surveying duties.

About half-past ten o'clock the captain, with two officers and four men, landed from the gig, on the edge of an extensive reef of a small islet situated off the Coast of Gillolo, where they commenced making their astronomical observations. Whilst so engaged, they were disturbed by an extraordinary yell, proceeding from about forty men of colour, all naked, except their chiefs, who were clothed in scarlet, who advanced from the islet with the evident intention of surrounding the captain's party. They commenced throwing spears and arrows, but were received, by the gallant captain's orders, with a volley of musquetry. During this attack, a palm put off the shore, but perceiving a brass 6-pounder in the bows of the boat, sheered off.

The captain pursued the fugitives as far as one of their villages, from which they were making their escape, and ordered the village, and the palm, of which he was in chase, together with another which was lying there, to be burnt. During the night he proceeded twenty miles to the southward, and anchored in a lonely bay, when he was attacked by five large palms, bearing streamers, such as were borne only by the most noted pirates in those seas. The barge and gig were cleared for action, and after twelve rounds of well directed round and canister shot, at a distance of 20 yards, causing the splinters to fly very profusely, and completely clearing the roofs, the pirates fled, and three of the largest palms were towed into deep water.

Five palms then drew up in order of battle to oppose the captain's return to the gig, who were soon dispersed by Congreve rockets, and musquetry. Judging from the strict obedience yielded to the captain's orders against firing musketry until a clear object presented itself, and also from the searching fire of the Congreve rockets, the captain suspected that above 300 must have been killed. He believed that there were on board the five palms at the beginning of the attack, 350 pirates, and at least 90 persons on the five other palms engaged in acts of piracy. The conduct of the captain had been approved of by Lord Palmerston as highly creditable to him as an officer, and deserving of full and entire approbation. Under these circumstances, the learned council trusted that the Court would comply with the prayer of the petition to accept the petition, and affidavits which had been tendered in support of the petition, and to pronounce that there were a number of piratical persons alive on board the palms at the commencement of the attacks, and that of these, 350 at least were killed.

The Court considered that 1,330 were alive and on board at the time of the attack, awarded a bounty of £5. each for 980, and £20. each for 350, who were killed.

WAGES.—Mr. H. Salt, the master of the *Creamore*, appeared before Mr. Ballantine, to answer the claim of a seaman, named Dimond, and two others, for wages to the amount of £40. It appeared that Mr. Salt would have paid them for their services, but for a notice which he received from the master of the *Arethusa*, that the men had deserted from that ship at Quebec, and that he was not to pay them any wages, which was borne out by a gentleman from the office of the Registrar of Seamen, with the tickets forwarded from the authorities at Quebec, with statements from the master relative to their desertion. Mr. Ballantyne was of opinion that Mr. Salt had acted perfectly right in withholding the wages, since the seamen could not produce any discharge from the *Arethusa*, expressed himself pleased that masters and owners were interesting themselves, since the practice of desertion at Quebec was very prevalent; with the facts that had come before him, he would make no order. The solicitor who appeared for the men, intimated that he should put the ship in the Commons directly.

WAGES.—Mr. T. Scott, master of the ship *Robert Scott*, appeared before Mr. Yardley, to answer a claim of W. R. Greeley, cuddy servant, for wages amounting to £15. 1s. 6d. Mr. Scott said he had offered the complainant his wages *minus* the value of some plate which had been lost. Mr. Yardley observed, it ought be understood by masters of ships that their stewards or cuddy servants were not liable to make good the loss of property unless it could be proved that they had been guilty of negligence. Greeley complained that he had been charged with hospital expenses while at Madras, notwithstanding there were medicines on board, and a doctor, from whom he could have received every attention. Mr. Yardley decided that the man should pay his own hospital expenses, and having looked over the charges made for the plate missing, amounting to £5. 8s., directed Mr. Scott to pay £9. 4s. 9d., with costs, instead of the amount claimed.—*Shipping Gazette*.

THE DONCASTER.—This was a suit brought by the fishing-smack *Brilliant*, and the yawl *Dart*, to recover remuneration for salvage services rendered on the 23rd January last, in conducting her to Yarmouth. There was a tender of £150, which the salvors rejected. The court thought it was inadequate, and decreed £200, with costs.

PROVISIONS FOR TROPICAL CLIMATES.

THE Admiralty have issued the following circular :—

“With the view of further promoting the health of the crews of Her Majesty’s ships and vessels serving in tropical climates, preserved meat which has hitherto been issued as a medical comfort only, shall in future be issued with preserved potatoes or rice, one day in each week, in lieu of the daily ration of salt beef, including flour, suet, and raisins, to all vessels employed on the following stations, viz.:—Coast of Africa, West Indies, south east coast of America, Pacific, East Indies, and China, such issue to commence seven days after sailing from this country. This substitution to commence on the 1st of June inst., and be issued in the following proportions, viz.— $\frac{1}{2}$ lb. of preserved potato, or $\frac{1}{2}$ lb. of rice, in lieu of the preserved potato, to such of the ships and vessels as may then be fitting for any of the above stations.”

FEMALE INTREPIDITY.—On the 22nd of October last, two vessels were wrecked off Fishguard; three men were seen clinging to the rigging. Entreaties were in vain employed to induce the hardy seamen, of that wild coast, to attempt the rescue of those unfortunate men; but humanity induced two young women to enter upon the task. They succeeded in conveying a rope to the wreck, and in bringing ashore the three sailors. The committee of Lloyd's, having ascertained the accuracy of this statement, contributed £5 towards the fund for the relief of these women; they are poor, and in very humble circumstances. We understand the Royal Humane Society has also given £5, besides honorary medals, to the two heroic women.

EXTRAORDINARY PHENOMENON.—About 7 P.M., on the 22nd ult., only an hour after the flood had made, the creek leading to Penryn became much agitated, and the tide ran down so rapidly, that the ferry boat, between Flushing and Falmouth, could scarcely make head against it. The vessels in the harbour swung down, and a loaded schooner, that had grounded, was left high and dry. A boat that was lying at the Penryn quay, was left by the tide in the space of three or four minutes, but in less than a quarter of an hour the flood ran up with great rapidity, and the irregularity of the tide continued until near 9 P.M., rendering it difficult for a boat to cross the harbour. A similar event occurred in England, at the period of the great earthquake at Lisbon, and again at Falmouth, in 1810, about the time of a violent eruption of one of the volcanoes in the Indian Seas, which had been quiet for nearly a century. It is also remarkable, that Graham Island then made its appearance in the Mediterranean; and we think it not improbable, that we may shortly hear of something of the kind having taken place at the Western Islands, or in the northern part of South America.

Penzance, May 24th, 1847.

PHENOMENON IN MOUNT'S BAY.—Whilst standing on the Beach at Newlyn, on Sunday evening last, about half-past five o'clock, I was surprised at observing a sudden rush of the sea towards the shore, and also its immediate return. Judging by a boat which lay aground near the beach, the rise was about 18 inches. The water became foul in an instant, owing to the nature of the beach. There was no appearance of a large wave, but a ripple near the shore, and a rushing noise at the time. It was then about low water, wind westerly, sky cloudy, threatening rain. There are a few instances on record of a similar occurrence, but the most extraordinary one happened at the time when Lisbon suffered so much by an earthquake. Many persons witnessed this irregular motion of the sea on Sunday, and I have since been informed by a Mousehole fisherman that the sea continued to flow and ebb alternately until near nine o'clock, and that it sometimes rose as much as 8 feet. The changes in the atmosphere during the day were very remarkable. In the morning about six o'clock, we had a breeze from the S.E.; by eight, it was a perfect calm; between ten o'clock and two, the mercury sank several degrees; about three in the afternoon, a breeze sprung up suddenly from the west, and the sky, as suddenly, became overcast; by eight o'clock it was again calm; but at eleven, the wind again rose suddenly and whistled along as it does in November. It is very probable that all these changes, and even the agitation of the sea, were produced by electricity; for if we suppose that the irregular motion of the water was occasioned by a distant earthquake, which might have occurred about that time, still the electric fluid might have been the most potent agent; for no natural power seems equal to it; in fact, it acknowledges no bounds, neither any sensible transition of time.

ROBERT BLIGHT.

SINGULAR PHENOMENON IN THE BLACK SEA.—On Sunday, the 4th of April, a phenomenon, which was nearly attended by the most disastrous consequences, occurred in the Black Sea. An Austrian steamer of Lloyd's Company, the *Stamboul*, was proceeding to Constantinople in a calm state of the weather, and was within an hour's distance of Synope, when suddenly the sea opened under her, assuming the form of a vast tunnel; the waves, in closing, covered her almost entirely, swept the deck, and did the most serious damage. The shock was so violent, that several leaks were sprung, and the vessel was some time in recovering her-elf from this terrible pressure, and getting fairly afloat again. She rose, however, after some pitching, but injured to such an extent, that if another shock had taken place she would have inevitably been lost. It was with the greatest difficulty that she reached the port of Synope to refit, after which, she proceeded to Constantinople, where she arrived safe last Tuesday. Those who were witnesses of this accident, thought at first it might have originated in an earthquake, but nothing of the sort has occurred elsewhere. It must be admitted that some submarine dislodgment opened under the ribs of the vessel, an abyss into which the waves rushed, and in this way they formed a gulf, in which she narrowly escaped being smashed and swallowed up.—*Journal de Constantinople.*

PORTSMOUTH, June 21.—This morning the *Undine* steam yacht, Mast-Com. Allen, was laid on the graving slip along side the dock yard, in order to afford the commander-in-chief, and other distinguished officers, an opportunity of inspecting her bottom, and examining the state of the composition with which it has been paved to prevent the adhesion of rubbish. One side of the vessel is coated with red lead, and the other with this composition, which has now been exposed to the action of the water since the 12th ult. On inspecting the bottom of the vessel, this morning, the red lead was found covered with weeds, grass, barnacles, muscles, and such like adhesive matters, the red lead acting as nourishment to the growth of such obstacles to the vessels' speed, whereas the composition side was clean and free from all rubbish, except such as would immediately come off on being slightly touched, or acted upon by the water, when the vessel is in motion. The result, therefore, was deemed satisfactory, as far as all trials of this new composition for the bottoms of iron vessels have hitherto extended. The *Undine* was taken outside the harbour when the tide floated her, and came in with her composition quite clean.

THE DOUBLE SEXTANT.—Our Nautical Surveyors, who know the importance of obtaining, at one moment of time, two angles between any three objects, the relative positions of which are known, will well appreciate the double Sextant, which places the power of measuring these angles in the hands of one observer. Several instruments of this kind have fallen under our notice in this work, in which we have also shewn that the original invention of the double sextant is due to the late Mr. Spence.* The same inconvenience which was felt by Mr. Spence, (that of being dependent on a second observer, and in a rapid tideway,) has been experienced by Capt. Beechey, in

* See vol. *Nautical Magazine*, 1842, p. 315, wherein these instruments are noticed, and also p. 130 of our vol. for 1839, alluding to a large angle introduced into the sextant by Capt. FitzRoy, described in our vol. for 1833, which feature we find in another more advantageous form in the instrument as described in the pamphlet before us.

his difficult survey of St. George's Channel. Having seen the double sextant, which this officer has described in a pamphlet before us, we do not hesitate to add our recommendation of the instrument to those of Capt. Beechey, as possessing all the advantages which he so clearly points out.

NEW BOOKS.

AUTO-BIOGRAPHICAL MEMOIR OF SIR JOHN BARROW, late Secretary of the Admiralty.—Murray.—Second Notice.

IN our former remarks on this highly interesting, and, it may be truly added, important work, promise was given of a recurrence to its pages, which, indeed, afford abundant matter of reflection and instruction. We have already adverted to the use made by Sir John Barrow of his official residence at the Cape, to ascertain the character of the Kaffir* and Hottentot tribes; and we shall now present our readers with a portraiture of the former people, calculated, we think, to make an impression of a kind extremely different to that, which has been usually received and promulgated of these so-called savages.

Sir John Barrow was sent on a mission of peace by Lord Macartney, and thus records his first impression of this barbarian race:—"On arriving in the evening, on the banks of the Kareeka, we pitched our tents amidst several hundred of these people, who came swarming out of the thick shrubbery that skirted the river. A party of the women were the first to salute us laughing and dancing, and putting on all the coaxing manners they could invent, with the view of getting from us some tobacco and brass buttons for their husbands. Good humour, animation, and a cheerful turn of mind, beamed conspicuously in all their actions and in their countenances. They appeared to be, as I believe they were, modest without reserve, curious without being troublesome, lively without impudence, and sportive without the least shadow of lasciviousness. Getting over the prejudice of colour, (a dark glossy brown, verging on black,) several of them might be accounted handsome. The rapid movement of the dark sparkling eye, gave animation to the countenance, their teeth were beautifully white and regular, and the whole contour was equally well formed with that of the European, which it resembled. They were, however, low in stature, strong-limbed, and very muscular in the leg.

"The men, on the contrary, were the finest specimen of the human figure I ever beheld. They possessed a firmness of carriage, and an open manly demeanour, which added to the good nature that illumined their features, declared them at once to be equally unconscious of fear, suspicion, or treachery. A young man of about twenty, six feet ten inches high, was, perhaps, one of the finest figures ever created.

"Some wore skin cloaks, but the greater part were entirely naked. The women wore cloaks that extended below the calf of the leg, they had leather caps, trimmed with beads, shells, and pieces of polished copper or iron. In the evening, they sent us some milk, in baskets made from a species of cyperus exceedingly clever and neat. Having no bread, vegetables, or roots, and rarely killing any of their cattle, they may be said to live entirely, or nearly upon coagulated milk, and the best proof of its nutritious quality, is

* The appellation *Kaffir* seems to be a misnomer. Sir J. B. could discover no etymology for it, the people calling themselves Koussies. He makes a similar remark relative to the term *Hottentot*, for which there is no synonyme amongst the people to whom it is applied.

the general healthy appearance and vigour of their persons. A chief, of the name of Tooley, paid us a visit; he was good humoured and cheerful, but declined entering into conversation on the subject of our visit; he said his brother, Malloo, would talk to us. It was not long before he made his appearance, followed by a third chief, of the name of Etonie. They were all stout well formed men, but Etonie might be called handsome; he had a lively, pleasing countenance, that always wore a smile, his eyes were vivid and active, his teeth as white as the purest ivory, and his nose of the same form as that of the European. They were asked if they were acquainted with the treaty that fixed the Great Fish River as the boundary between the Christians and the Kaffirs. Malloo said, 'They knew it very well,' then it was asked, 'Had they not violated that treaty by crossing the river, and taking possession of the country belonging to the colonists, and thus depriving them of their habitations?' Malloo immediately replied, 'There were no habitations where they had fixed themselves, and as for the motive for passing the boundary, he could only say, for his own part, that he had come over for one of the reasons that had carried the colonists *first, after* the treaty into the Kaffir country—that of hunting for game."

"It was at once clear," adds Sir J. Barrow, "that we had a *shrewd* people to deal with. Subsequently, however, he obtained information, that these chiefs had offended their king Gaika, to whom the embassy was commissioned to proceed with presents and terms of peace, and they, being made aware of his errand, offered to return quietly to their own country, provided they received directly from their sovereign, "a messenger of peace."

The account of Sir John Barrow's interview with king Gaika, is still more calculated to raise the character of this people in the estimation of the truly civilized and refined European. After introducing his readers to the king's mother and his queen, "a pretty girl of fifteen," who, with their female attendants, entertained the embassy "with their good humour and lively conversation," until the arrival of king Gaika, the narration proceeds:—"While thus pleasantly chatting, Gaika made his appearance, riding on an ox in full gallop, attended by five or six of his people, similarly mounted. He invited us into his Kraal, where the cattle are shut up at night, and received us under the shade of a spreading mimosa. From thence, we proceeded to a clear place of grass, on which he requested us to sit down with him, that, as he said, we might the more conveniently hear what each party had to say. He was evidently pleased with our visit, of the nature of which he was fully aware; assured us that none of those Kaffirs, who had passed the boundary, were his subjects, that they were chiefs entirely independent of him, that he was only a chief himself, but his ancestors had always held the first rank in the country, and were so considered, both by Kaffirs and colonists; that he regarded none of the chiefs, who wished to be independent of him, in the light of enemies. In short, he solemnly assured us that Malloo, and Tooley particularly, had committed great depredations on the cattle of his people, and that when he sent them a civil message, to enquire if these had strayed into their territories, to his surprise, he was informed that they quitted the country, that he had frequently since sent them proffers of friendship, but they detained his messengers, and to give them no pretext for quarrelling with him, he had forbidden any of his people to molest the habitations they had left. "The truth of this," adds Sir John, "we witnessed, the villages of Tooley and Malloo remaining *unmolested* when we passed there."

This Kaffir chief is described as, at this time, under twenty years of age, of an elegant form, and graceful and manly deportment; his height about five feet ten inches, his countenance open, but marked with the habit of reflection. To every question he gave direct unequivocal answers; he seemed to

be in disposition amiable, and was indeed adored by his subjects. He had one wife only, very young and very pretty, by whom he had a little girl called "Jasa."

These extracts will manifest the spirit of the work, and give earnest of the diversity of entertainment, and instruction to be found in its pages. It may easily be supposed that many passages from the official life of this autobiographer, have a more immediate bearing on the present purposes of this periodical; but we have dwelt thus long on these interesting scenes of primitive diplomacy, not so much for the simple and picturesque dignity with which they are presented to our mental perceptions, as for the important suggestions with which they give rise. We are but too apt to regard outward habiliments as the only sure signs of civilization, as we estimate a priesthood by its external assumptions; but here, without manufacture of silk, woollen, or even calico, are to be found elegance and propriety of manners, noble and just sentiments, and a dignified forbearance towards refractory chiefs, that would do honour to "the most Christian potentates;" and all these combined with personal gifts and accomplishments that cannot but fix their possessor in the admiring recollections of his more learned and better clad brethren of the human race.

NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

THE DOWNS. *Capt. Bullock, RN.*, 1840. Price 2s.

ARCHIPELAGO, TINOS, MYKONI, RHENEA, AND DELOS ISLANDS. *Capt. Graves*, 1843. Price 2s.

" PART OF THE GULF OF ATHENS, WITH ZEA AND MAKRONISI ISLANDS, *Capt. Graves*, 1841. Price 2s

" PORT EPIDAVRO. *Capt. Graves*, 1844. Price 6d.

SINGAPORE, DARIAN, AND RHIO STRAITS, corrected to 1846. Price 2s.

POMBA BAY, 1845. Price 1s.

TROON HARBOUR, WEST COAST OF SCOTLAND. *Capt. Robinson*, 1847.

WRECKS OF BRITISH SHIPPING.

(Continued from page 324—cs crew saved, cd crew drowned.)

Ship's Name.	Belong to.	Masters.	From.	To.	Where.	When.
Anglo Saxon	127 Liverpool	Gordon	Boston	Liverpool	Dock Island	May 8, cs
Cantab		Auckland	Dublin	St. Petersburg	Manberg	May 26, cs
Catharina			Jamaica	Glasgow	C. Antonio	Ap. 8, cs
Harriet	130 Limerick	Watson	Limerick	St. Petersburg	Besker	May 19, cs
Leander	Liverpool	Phelan	Liverpool	Savannah		aban. cs
Manley			Lombock	Macao		cs
Margaret	Harb. Grace	Power			Greenford	20 cs
Mariner	Liverpool	Freeman	Cienfuegos	Halifax	l. Pines	April 21 cs
Medusa	135		Liverpool	China	Sampong B.	cs
Mermaid		Rodgers	Bombay	Singapore	Vingoria	cs
Nancy Munro	Greenock		Pt Spain	Clyde	Boca Huevos	cs
Sir Robert Peel	London	Champion	Auckland	Sydney	Cape 3 Point	June 17 cs
Sterling		Ross	Belfast	Mantangas	Elbow Cay	April 8, cs
Syren		Turpin	La Guayra	Liverpool	La Guayra	May 21 cs
Waterloo Packet				Chesapeake	lat 41 long 50	aban. cs
Yucatan	141 Belfast		N. Orleans	Belfast	Crawford's M.	April 22, cs

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stubbington, near Fareham,
Hants.—May, 1847.

Day of Month	A. M.												P. M.												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
1	10	10	10	10	10	10	10	10	10	16	17	17	12	12	5	15	15	10	11	12	22	25	17	17	
2	10	12	5	5	10	10	11	...	...	...	5	5	10	...	5	10	5	...	N	...	...	...	...
3	...	...	...	...	...	...	10	10	5	10	12	15	20	12	10	...	...	...	...	...	...	...	...
4	...	...	...	...	...	...	5	5	5	5	5	5	5	5	...	...	...	...	...	...	...	...	...
5	...	...	...	...	...	...	...	...	12	15	12	12	10	5	...	...	...	...	...	...	...	...	...
6	...	...	...	...	...	...	12	12	12	15	14	15	15	12	13	11	5	...	...	10	10	...	...
7	...	10	10	12	12	17	25	25	25	27	27	27	27	27	27	27	27	26	25	...	...	...	...
8	...	...	...	...	...	...	...	...	...	...	...	...	...	22	32	30	30	27	27	30	30	27	25	27
9	32	22	27	25	22	25	27	27	20	25	20	11	12	5	10	...	...	...	...	10	...	...	...
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	...	...	...	...	...	...	...	...	...	...	...	...	...	11	15	12	10	...	...	5	...	...	...
12	...	...	...	...	...	...	...	...	...	12	10	11	12	15	10	10	11	12	5	5	12	12	10	...
13	...	...	...	...	...	10	10	10	12	12	12	12	18	10	3	3	3	...	...	...	...	...	...	...
14	...	...	...	...	...	12	12	12	17	12	25	15	15	13	11	12	5	5	5	5	5	5	5	5
15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	17	20	12	12	22	25	22	27	27	32	20	25	22
17	20	22	27	25	22	20	20	27	27	27	22	20	20	22	17	12	...	...	...	...	...	...	...	...
18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	10	10	10	10	17	17	20	22	25	27	22	20	17	15	15	12	...	...	...	...	...	15	16	20
20	22	22	15	17	15	15	17	17	25	30	30	27	30	25	22	15	5	12	12	...	...	...	...	...
21	...	...	...	...	...	...	...	...	...	10	12	12	12	10	...	...	...	...	...	...	...	...	...	...
22	...	...	...	...	...	...	...	...	...	5	10	5	3	3	...	...	...	...	...	...	...	...	...	...

Day	Hour	SSE								WSW							
		1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	25-26	27-28	29-30	31
23																	
24																	
25	10 10 10 10	15	17	22	22	27	12	12	12	12	12	12	12	12	12	12	12
26	12 12 12																
27																	
28																	
29	10 10 12	5	5	11	13	13	13	10	10	12	15	15	12	12	5	5	5
30																	
31																	

TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—MAY, 1847.

A.M.	1	2	3	4	5	6	7	8	9	10	11	12
2	.0258	.0172	.0086	.0086	.	.	.	.	.	.	.	.
8	.	.0258	.043	.	.	.	.	.	.	.0258	.0172	.
11	.0086	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.0086	.	.0172	.	.0172	.	.0172	.0172	.0172	.
16	.	.	.0344	.0344	.086	.129	.129	.	.	.	.	.
29	.0344	.0344	.	.	.	.	.	.	.	.	.	.
Total	.0688	.0774	.0946	.0430	.1037	.129	.1462	.	.0172	.043	.034	.
P.M.	1	2	3	4	5	6	7	8	9	10	11	12
1	.	.	.0258	.0086	.0086	.086	.0314	.0688	.0602	.0430	.0086	.0172
2	.	.	.	.0086	.	.	.	.	.	.	.	.
3	.	.	.	.0688	.0688	.0688	.0516	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.	.	.0172	.
8	.	.	.	.043	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.1086	.0516	.0086	.0086	.0086	.0172	.
10	.	.	.	.	.	.	.0086	.	.0086	.	.0086	.
11	.	.	.	.	.	.	.	.	.0258	.	.	.
12	.0086	.	.	.0172	.0172	.	.0344	.0344	.0086	.	.	.
15	.	.	.	.	.	.	.0172	.	.	.	.	.
28	.	.	.	.	.	.	.	.	.0344	.0344	.0344	.0344
Total	.0086	.	.058	.1462	.0946	.1634	.1978	.1118	.1462	.086	.086	.0516

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—MAY, 1847.

Miles	N	NNE	NEENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NWNW	NNW
No. of hours	40	.	10	.	12	351	301	470	68	396	943	1110	1009	436	.
Velo. pr hr.	10	.	5	.	12	25	16	10	9	13	18	13	17	13	.
Amt. Rain.	.120	.	.	.	.	.086	.361	.129	.034	.	.808	.335	.	.	.

Considering from 6 A.M. to 6 P.M. day, and from 6 P.M. to 6 A.M. night, we have 3089 miles the amount of wind during the day, and 1802 during the night, and .645 inches the amount of rain during the day, and 1.310 during the night. Total wind 4891 miles, rain 1.955 inches. The number of hours during which rain fell was 59. The greatest amount of rain was from W.S.W. The number of hours during which the amount of wind is recorded was 342; during 402 it is calm.

RECENT DISCOVERIES IN AUSTRALIA.—In our last we reported the return of His Excellency the Lieutenant-Governor and suite from a voyage to the head of Spencer's Gulf. We are now enabled to give some particulars of an examination of the various harbours of that gulf, which have hitherto been only partially known to the public, and the discovery, if we may so call it, of a new harbour situated close to Mount Remarkable, in which the largest ships can load and discharge in perfect security. After a careful examination of Port Germain, in lat. 33° 3', it was ascertained that that harbour is not only very difficult of access, but it is not available for shipping drawing more than 12 feet of water. Port Ferguson, also, did not appear to be available for large ships; but it was found that that portion of the gulf immediately north of Point Lowly, extending to the latitude of Mount Remarkable, 32° 43' contains a fine harbour with a depth of from 4 to 7 fathoms. It is sheltered on the south by a sand bank, which runs from the point (not named) opposite Point Lowly, and close to the latter point there is a channel of 7 fathoms leading into the harbour, to which therefore there is an easy access. On the west side of the gulf, near Point Lowly, the depth of this harbour is 7 fathoms, and it shoals gradually towards a sandy beach on the eastern side, distant about fifteen miles from Mount Remarkable. At one mile and a-half from the shore is an excellent well-protected anchorage in 4 fathoms water. The land close by the gulf at this part was traversed by Mr. Eyre in 1839. From his report we should consider it a country favourable for land carriage. On the Mount Remarkable range, the prevailing rock is a very white sandstone; on the west a coarse red substance prevails. The governor was of opinion, from the nature of the country, that the range of mountains, as far as Mount Arden, abounds in minerals.—*South Australian*.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

SURGEONS—D. H. White, MD., and G. Duncan, MD.

APPOINTMENTS.

COMMANDERS—W. C. Oldham (1844) to *Vengeance*.

LIBUTENANTS—H. D. Rogers (1837) and A. Hamilton (1842) to *St. Vincent*—J. A. Shens (1840) to *Collingwood*—A. Luckroes (1845) to *Firebrand*—R. T. Bedford (1841) to *Victoria and Albert*—R. C. Whyte (1840) to *Vengeance*—G. B. Jeffys (1841) to *Excellent*.

MASTER—G. Filmer (1838) to command *Kite*.

MATES—F. Moresby (1845), P. Chase (1846), R. B. Oldfield (1846) to *Victoria and Albert*—J. D. D'Aguiar to *Caledonia*.

SECOND MASTER—C. Burney to *Kite*.

MIDSHIPMEN—W. Graham to *Caledonia*—J. F. H. Willesey and A. Neale

to *Excellent*—G. Odin and P. Blakeston to *Howe*.

NAVAL CADETS—G. T. Key and H. J. Hughes to *St. Vincent*—F. P. Mathers to *Howe*—C. H. Bradwell to *Dragon*.

MASTERS' ASSISTANTS—R. D. Connor to *Growler*—J. G. Budd to *Kite*.

SURGEON—H. Jamieson to *San Josef*.

ASSISTANT-SURGEONS—J. Holt to *Odin*—H. Slade to *Caledonia*—D. Carter to *Victory*—H. Crocker to *Seringapatam*—E. Pearce to *Cherokee*—F. Freewin to *Minx*.

CLERKS—H. J. S. Walker to *Avenge*—W. H. Thompson to *Kite*—J. A. Messum to *Acheron*—E. J. Gray to *St. Vincent*—C. A. Plummer to *Excellent*.

COAST GUARD.

APPOINTMENT—Lieut. H. Cox to command of the Elie, Fife District.

REMOVALS—G. Clarke, to Kingsdown Mr. I. Maude to Ballyroneen—Mr. J. C. Harry, to Knockadoor.

MARRIAGES AND DEATHS.

Marriages.

June 8, at Wilmer, Kent, the Rev. W. Athill, to Caroline, daughter of the late Capt. J. Holstead, RN.

June 10, at Wimborne, Minster. Capt. D. Curry, RN., to Elizabeth, daughter of E. Castleman, Esq.

Deaths.

June 5, at Hereford, Capt. M'Gwire, RN., aged 81.

June 6, at Glasgow, Ann, eldest daughter of the late Capt. J. Campbell, RN.

June 25, at Richmond, Admiral Sir Robert Stopford, GCB. and GCMG. Governor of Greenwich Hospital, in his eightieth year.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory,
From the 21st of May, to the 20th of June, 1847.

Month	Day	Week Day	Barometer		Fahrenheit Thermometer				Wind.				Weather.		
			In Inches and Decimals.		In the Shade.				Quarter.		Strength.		A.M.	P.M.	
			9 A.M.	3 P.M.	9 A.	3 P.M.	Min	Max	A.M.	P.M.	A.M.	P.M.			
			In Dec	In Dec											
21	F.		30.14	30.17	56	67	48	68	W	W	3	3	bc	bc	
22	S.		30.09	30.05	59	75	51	76	SW	SW	4	4	b	b	
23	Su.		30.01	29.89	67	81	57	82	SE	S	2	4	b	b	
24	M.		29.93	29.91	66	70	63	71	SW	SW	1	3	o	lcp 4	
25	Tu.		30.15	30.21	57	68	47	69	SW	SW	2	4	bc	bc	
26	W.		30.27	30.21	58	70	46	72	SW	S	3	3	b	b	
27	Th.		30.11	30.07	63	73	48	74	NE	SE	3	4	b	b	
28	F.		29.98	29.96	72	83	54	84	S	S	2	2	b	bc	
29	S.		29.90	30.00	68	71	63	73	SW	SW	2	4	o	bcp 3	
30	Su.		30.40	30.41	58	72	51	73	SW	SW	2	2	b	b	
3	M.		30.51	30.51	64	75	54	76	NE	NE	2	2	b	bc	
1	Tu.		30.53	30.51	62	72	53	73	NE	NE	3	3	b	b	
2	W.		30.48	30.49	64	75	51	75	NE	E	2	2	b	bc	
3	Th.		30.38	30.30	64	74	52	75	SE	N	1	5	bcm	qbcm	
4	F.		30.27	30.27	61	74	53	75	N	N	4	4	b	bc	
5	S.		30.25	30.19	58	64	52	65	N	NE	4	6	bc	qb	
6	Su.		30.10	30.05	58	58	51	61	N	N	5	5	qbc	qbc	
7	M.		30.12	30.10	54	63	45	64	N	N	4	4	bc	bc	
8	Tu.		29.87	29.75	53	59	51	59	SW	NW	4	4	bcp 2	bc	
9	W.		29.85	29.90	52	60	42	60	N	N	5	5	qb	bcp 3	
10	Th.		29.70	29.76	54	57	48	60	NW	NW	5	5	qop 2	qop 4	
11	F.		29.97	30.01	56	63	45	64	NW	NW	4	4	bc	qop 4	
12	S.		30.01	29.97	60	68	47	69	SW	SW	3	4	bc	bc	
13	Su.		29.82	29.77	62	60	54	64	SW	SW	4	6	op 2	qor 3	
14	M.		29.59	29.56	59	63	56	64	S	SW	5	5	qor 2	qbcp 4	
15	Tu.		29.55	29.55	57	57	48	60	SW	SW	5	5	qbcp 3	qbcp 3	
16	W.		29.76	29.68	54	55	47	57	SW	S	3	5	op 2	qor 3	
17	Th.		29.69	29.60	59	64	51	65	S	S	3	3	bc	qor 4	
18	F.		29.64	29.74	52	58	52	60	SW	N	2	2	ort 2	bcp 3	
19	S.		29.91	29.96	57	65	50	66	SW	NW	2	4	o	bc	
20	Su.		29.98	29.94	57	65	52	66	W	SW	3	3	o	bop 4	

May 1847.—Mean height of the Barometer = 29.910 inches; Mean temperature = 57.3 degrees; depth of rain fallen = 1.26 inches.

TO OUR CORRESPONDENTS.

A word about the UNIVERSAL YACHT SIGNALS in our next.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

AUGUST, 1847.

THE HYPOTHESIS OF THE EARTH'S ROTARY MOTION CREATING THE
TRADE WIND, EQUATORIAL CURRENT, &c., CONSIDERED.

THIS subject appears to be one of those abstract theoretical points upon which no light is shed by analogy; and for the support of its stability, we seek in vain direct proof.

We are happily exempt from the prejudices of those who will not believe anything which does not come within the scope of their understanding; who will not "take for granted" those philosophical points that have emanated from great and gifted minds, and which seem to silence the uninformed. But, if we can comprehend a subject, especially one upon which opposite opinions are entertained, we may, without presumption, take the privilege of discussing it; and if our investigation serves no other end than that of affording some small share of amusement to the readers of the *Nautical*, and drawing their attention to an interesting question in physical geography, they, at least, will not perhaps be displeased. Indeed, where, as in this case, a difference of opinion exists, the acquirer of knowledge becomes perplexed, and like the donkey between two bundles of hay, undetermined which to choose, with this difference, however, that the food presented to the *bimana* is intellectual. If we turn to popular works, with the expectation of finding something new to help us to a right conclusion, we are generally disappointed, the writers following, for the most part, some favourite author of note, and so error and truth go side by side, year after year, down the stream to posterity. To reason the matter for ourselves becomes then our only resource.

We have seen little more than the mere assumption that, the earth's diurnal motion affects things external; and we think that, upon a

careful and close examination of the matter, wherever applied for the purpose of elucidating certain phenomena, other more reasonable and complete causes may be found to account for the same; and with this advantage to the latter, cause and effect harmonize; whereas, facts clash with the former, and effects do not agree with the assigned cause: it seems to stand alone as a bare inference, one of great minds truly, and as such entitled to attention, but still without a single operation in nature to prop it up, so that conviction shall follow, and decide it to be a truth not to be denied. Dr. Hare thought it no disrespect when he expressed his opinion that, the most careful examination of electrical phenomena would lead to the conclusion that the supposition of two electric fluids was merely a dream of philosophers. Another of the *savans* has said that, if a theory be once shown to be contradicted, even in one instance, by a fairly interpreted experiment, (and we may add by conditions, which should follow, not being fulfilled,) that theory must be at once abandoned. In the course of this investigation, we shall endeavour to show that whatever may be brought forward for the support of the rotary hypothesis is inconclusive.

It will not be denied that, the human inhabitant of the earth is in no way sensibly affected by the rotation; hence, it may be asked, why it should be imagined that the air, and the water of the ocean are influenced by an action which, although intellectually apparent and certain, is physically unknown to man? Does it not seem reasonable to believe that, if one body feels the impulse, as all are subject to the law of gravitation, all others, whether solid, fluid, or aëriform; whether rational or irrational, should also partake of it? If no sound reason can be assigned for such, can the assumption be maintained? To say that the Creator designed it so, would be a bar to all discussion; a settling point from whence, truly, there could be no appeal; but, as the economy of nature is so ordained that there shall be no jarring, would not the admission of these two exceptions be incompatible with the harmony manifest in all the works of the Almighty Author of the universe? We shall not presume to say the thing is impossible, but we are at liberty to believe that it is highly improbable; and we have arrived at this belief, after a careful revise of the subject in all its bearings, at least, such as presented themselves to our mind: and as we have been searching after the truth, we shall here name such reasons as we have supposed might be advanced in favour of the hypothesis, and, at the same time, add our remarks upon them.

1st. Perhaps it may be contended that, the air and the water of the ocean as *fluids* are, from their mobility, susceptible of the least force, and hence, the rotary motion of the earth, upon which they press, may influence them, whilst every thing else, not similarly constituted, may be free from the impression.

The air and the water being susceptible of very slight force, is a reason for rejecting the hypothesis, because if they felt the motion at all, they must acquire a corresponding velocity, and so be flung away altogether. But even admitting it, there are certain conditions to be fulfilled, and which, as we shall show, not occurring, the force of the reason must drop.

2nd. A ship in circumnavigating the globe, gains a day if she follows one direction, and loses one, if she pursues another; do not these phenomena depend upon the rotary motion?

This at first may appear a subtle question, but it is easily answered. It may be safely admitted that the phenomena named are dependant on the rotation of the earth, but not from any effect by friction upon the air, the water, or the ship. All seamen know that if a vessel goes by a western route, that she will be advancing *against* the direction of the earth's rotation and with the sun, and that she will lose an interval of time, which, when the revolution has been completed, will amount to a day, or one rotation of the earth on its axis less, than if she had been all the while at anchor. The reverse of this will, of course, take place when the ship follows an eastern route; she will gain a day, as she then will have gone *with* the direction of the rotation, and against the apparent course of the sun.

It appears to us pretty evident that, if the air and the water received a velocity from the rotary motion, the ship would also partake of it; those persons who have seen a block machine at work, may have a notion of the sort of whirl which a ship might be supposed to attain were she aided by a velocity of 900 miles an hour!

What is to hinder the air and the water, if feeling the impulse at all, from acquiring the same, or nearly the same degree of velocity as the earth round its axis? We believe there would be nothing to prevent it; but, it may be said, that as the imparted motion is contrary to that of the earth, the velocity acquired will be proportionally lessened—we do not see the force of this—but allow one half only, and we have still a velocity of seven and a half miles in a minute. What will the steamers say to that?

3rd. The moon's attraction is, philosophically considered, drawing up the waters of the earth, yet it does not lift a man off his legs. Is this exception a jar in the harmony of nature?

One thing is pretty certain, it would be very apt to *jar* the *biped* if it did lift him, and afford a practical lesson of the *force* of gravity. This is a very abstruse sort of subject, the smaller planet attracting a larger mass than itself; but, the question, in truth, is not a fair one altogether, inasmuch as the two forces are quite distinct, and further we are treating of things purely terrestrial, and not celestial, and, therefore, the question does not bear. The doctors, however, seem to think that mad people rave at the "full and change," and that the disorders of the body have their crisis at those periods; but as we are no physiologist, we must leave those grave matters in their hands.

The husbandman, the pilot, the fisher, and the seaman, have long held a notion of lunar influence on the weather; for ourselves, we for the present are willing to believe this to be mere coincidence, or, at all events, if her action be insisted upon, that it is indirect only, inasmuch as the tides are connected with that luminary, for they are a cause of changes of weather; but the sun, the glorious sun presides.

Sir John Herschel says, "the sun's rays are the ultimate source of almost every motion which takes place on the surface of the earth. By

its heat are produced all winds, and those disturbances in the electric equilibrium of the atmosphere which give rise to the phenomena of terrestrial magnetism."

If the rotary hypothesis were founded on truth, ought we not to expect a constant N.W. wind in the northern hemisphere, and a S.W. wind in the southern half of the globe, both curving to the eastward as the poles were approached; and at the equatorial line an incessant hurricane, which the action of rarefaction would be quite unequal to divert from the impulsive direction imparted to the fluid by the axial momentum and velocity; and the strength of these general winds found to be proportioned to the diminished velocity of the earth's rotary motion from the equator to the poles?

It is a very old observation that an "undevout astronomer must be mad," and as mechanical action has been applied to certain phenomena of nature, without implying any want of reverence, it is assumed by the advocates of the rotary hypothesis, that the wind in the Torrid Zone should be easterly, and thence to the Poles westerly. But, if this were a consequence of the rotary motion of the earth as a mechanical effect, it should assuredly follow that, the wind of the middle region, where the velocity is greatest, be the strongest; and the westerly winds of the other portions of the earth be the weakest, and not only so, but gradually weaker and weaker until near the poles, where there would be little or no motion to influence the atmosphere. How stand facts as they really exist? The trade winds are the gentlest, and the westerly winds the most impetuous. These incontrovertible facts are directly opposed to the hypothesis.

We cannot separate cause from effect, nor mitigate the latter with an inefficient force, whilst the former is supremely potent. It should, therefore, be borne in mind, that, the tremendous velocity of the rotary motion, uniform and exerted without cessation, must be infinitely more powerful in influencing the air or the water, than any other natural operation, and consequently, all others must be powerless in causing any modification of its effect. Let us again hear that truly great man, Sir John Herschel, he, who despising domestic ease and comfort, braves the dangers of the ocean, and the vicissitudes of foreign climes, purely from the exalted feeling of rendering a service to science. "A free rotation of the earth round its centre, if it exists and be performed in consonance with the same mechanical laws which obtain in the motions of masses of matter under our immediate control, and within our ordinary experience, must be such as to satisfy two essential conditions. It must be invariable in its direction *with respect to the sphere itself*, and uniform in its velocity." "Now, these conditions are in perfect accordance with what we observe, and what recorded observation teaches us, in respect of the diurnal motions of the heavenly bodies."

It being *certain* that the two conditions above mentioned are fulfilled, What would be expected therefrom? It should follow as certain that, any effect produced by the rotation, ought to partake of those conditions. How, then, does it happen that calms, as well as gales of wind, are frequent in all parts of the Torrid Zone; as also winds blowing in a con-

trary direction to the course of the *trades*, (not alone in the vicinity of land, but in the open ocean, both in the Atlantic and Pacific.) as well as transversely?

These irregularities could not possibly happen if the rotary motion of the earth was the cause of, or in any way influenced, the trade wind; and it seems clear from the results of long experience, (upon which all theories must rest for confirmation,) and observation that, the cause, be what it may, must be subject to mutation; for, if so equable a power were to act upon the atmosphere, the latter, as a consequence, would partake of that character; and moreover, the intervention of land could have no influence over its course and regularity, because, as was before observed, the power assumed is *incessant*, neither accelerated nor retarded in the velocity of its revolution, and must be, if its action were at all felt, infinitely more powerful than differences of temperature, which every body seems willing to admit as creating interruptions of the tropical wind, in the vicinity of land.

Let the reader reflect but a moment on the velocity of the earth round its axis, 15 miles in a minute! and then apply that to the general strength of the wind that it is said to cause and control, we will save him this intrusion upon his attention; the trade wind is placed under the head of a *pleasant gale*, which, according to the table in use, has a velocity of from 10 to 15 miles an hour, but we will be prodigal for a season, and allow it 20 miles; and we have no more than the forty-fifth part of the earth's hourly motion round its axis.

What is to modify the consequence and create this great difference? A controlling power of 900 miles an hour, producing an effect only amounting to 20, in a fluid you may move with a feather, and briskly too!

If the air was influenced by the rotary motion, how does it happen that the two, or rather the four, great currents to and from the equator, hold their courses independent of that motion? The rarefied air, instead of streaming to the N.E. and S.E., ought to flow to the west, and the polar currents to the east.

We are told that the polar aerial currents, which proceed from the N.E. and the S.E., would, but for the rotation, be simply *north* and *south* winds. In one sense, this may be safely admitted, because the rotation by shifting the points of greatest rarefaction, and causing the sun's apparent motion to become more and more westerly, the winds in motion are attracted accordingly, and so follow those points; and observation continued from the days of Columbus decides that, the variations of direction from the cardinal point, are governed by the sun's place.

If we imagine for an instant that it were possible for the earth to remain stationary, what would be the result on the atmosphere, admitting the great luminary as the prime mover?

It is reasonable to believe that, as there would be then an equal attraction in the Torrid Zone enlightened by the sun,* supposing him to be in the

* What the condition of the unenlightened parts would be, we are not called upon in the present discussion to consider.

equinoxial, the currents of air would proceed, respectively, directly from the north and from the south, as well as the superior currents towards those points.

But, if the rotary motion alone gave rise to the winds, at its suspension, there would probably be a profound and universal calm, the consequences of which may be easily conceived. If the rotation be admitted in conjunction with the sun, of course the case would stand as if the latter acted alone. But we contend that, a power having so great a velocity, if acting upon the atmosphere, would neutralize any effect, the sun might otherwise exert.

Dr. Halley rejected the hypothesis, and produced a theory really admirable on account of its simplicity and force; resting his conclusions upon facts; and what is of great moment, his theoretical reasoning had the support of his own personal observations.

“ Besides, (says the Dr.) the air being kept to the earth by the principle of gravity, would acquire the same degree of velocity that the earth's surface moves with, as well in respect of the diurnal rotation, as the annual round the sun, which is about thirty times swifter.”

Both reason and common sense bear out this inference, for if the earth communicated its motion to the air, we should experience a wind of the utmost violence, for which we have now, no appropriate name, as the rotary current of the severest hurricane has but one-ninth the hourly velocity of the earth round its axis!

Dr. Halley's theory is well known to all seamen, and, therefore, it would be superfluous to enter into its merits, it being very generally approved of; it stands opposed to an hypothesis which appears like St. Pierre's glacial speculation, a theory of coincidences.

ACCOUNT OF AN EXPLORING EXPEDITION TO THE SOUTH-WEST OF NELSON.

(Concluded from page 343.)

THE principal valley of the Tiraumea is covered with grass for about six miles above the confluence of the three streams which form the river of that name; beyond that distance it becomes wooded, and continues winding between the hills in a direction S.E., towards the Otapawa valley of the Matukituki, with which it probably communicates. The other valleys, which diverge to the E. and N., are inconsiderable in extent, but, uniting as they do at a common point, form a pretty grass flat of capital pasturage ground, of about 4,000 acres, with some good bush land exclusive. The sides of the valley display similar terraces to those in the Motupika and Rotuiti valleys, and which appear to have been formed by the subsidence of former lakes, the waters of which have found an outlet by the gorges of the Matukituki.

16th.—The Tiraumea river, flowing to the westward enters a narrow

wooded valley about two miles below the junction of the minor valleys on the grass flat. Our route lay down the rocky bed of the stream, which had to be crossed every 200 or 300 yards, the depth of the water at the fords being from 2 to 4 feet, with a rapid current. Great quantities of blue ducks, apparently a species of *spoveller*, are to be met with on this stream, and would afford excellent sport to retrieving water-spaniels, as some of the party can testify from practical experience.

In the afternoon passed the "Mai," a very pretty waterfall, formed by a tributary stream from the southward falling into the Tiraumea over two ledges or rock steps from out a beautiful wooded glen. Up this stream the bush natives used to go for the kakapo, now nearly or quite extinct. This bird, of which no *perfect* remains are extant, appears to have been a ground parrot of a larger size than the kaka, and with beautiful green and white plumage. It was formerly to be met with abundantly in this district, as also in other parts of the island, and the natives attribute its extinction to the wild dogs. The European rat, which has spread over the whole of the country, in my opinion is more likely to have been the cause, destroying as it would the eggs and young in the lowly situated nests of the kakapo and kiwi, and, in all probability, of the moa also.

Slept on a sandy beach on the northern bank of the Tiraumea. Distance, six miles.

17th.—Followed the river down in a general westerly course, the stream becoming considerably increased by the accession of tributaries and the fording more difficult. At five miles and a half came upon its junction with the river Buller, which flows down from the lakes, receiving the waters of the Gowan and the river formerly denominated the Fox. About the lower part of the Tiraumea, between the bends of the river and the mountains, are some good flats of forest land, containing each an average of perhaps 50 acres, the soil undoubtedly good, and the timber not what is usually called heavy. It must be included, however, in the Matukituki country, and the valley, with the upper or grass valleys, does not naturally belong to the Nelson district.

The appearance of the river Buller, at the point at which we came upon it, is singular and remarkable. It flows through a wooded valley of about half a mile in width, down the bottom of which it has hollowed its course amid high and uncouthly shapen masses and piles of rock, divided as if by some earthquake agency, and worn smooth by the mighty and ceaseless action of the river. Twenty miles above this spot the rapidity of the current is such that to ford it would be not only impossible, but either man or other animal that might venture within its influence, would be immediately dashed to atoms; while here in its deep channel the river slowly moves along, a dark mass of water 60 feet from the bottom to the surface.

Encamped among the rocks about half a mile below the junction of the Tiraumea, or the Mangles, as we named it, with the Buller; the opening of the Matukituki appearing about a quarter of a mile lower down the course of the river.

18th—Below our encampment, about a quarter of a mile, the gorge

terminated, and the valley of the Matukituki commenced in an expanse of open manuka country, with pine-forests and fern-flats on either side of the Buller; several wooded valleys appeared to join the main opening a mile or two down the plain. The scenery exceedingly picturesque.

The "big river" was now to be crossed: from the wooded terrace above, it appeared but a couple of feet deep, and its fording seemed easily practicable, but from its beach the appearance of a large body of water which rushed down became more formidable, and each instinctively hesitated before advancing into the stream. For about thirty yards from either shore the water glides smoothly along, with a current one might undoubtedly bear up against; but in the centre it rushed with impetuosity in a deep, hollow wave to its greater velocity below the ford, where it became a race, crested with a high and broken ripple.

The native looked at the river, made one of his comical grimaces, and entered the stream, the depth of which now became apparent, and ere he had reached the centre of the river the water was up to his waist. One or two of the party ran down the side of the river, in order to afford assistance should he be carried down; but with once or twice staggering when exposed to the greatest pressure, and a spring downward with the current as he neared the further bank, he reached the opposite side in safety, not forgetting to evince his contempt for the river and exultation at having crossed, in a series of grotesque gesticulations and vehement abuse of the river and all its tributaries.

Mr. Fox now followed into the stream, and attained its centre without much difficulty, but the pole which he used bent under him while bearing against the heaviest rush, and it was a matter of critical uncertainty as to whether he would attain the bank which he was approaching; a few steps more and he would be past the worst of the current, when he appeared for an instant to totter, and the next moment was swept down the race entangled with his load. Fortunately, the river was deep, or the consequences might have been fatal. Recovering a swimming position, he swam to the further shore, and was in a short time across, which, however, were not the remaining two of the party, whose spirits were not at all elevated by the fortune of those who had gone before them. Mr. Brunner determined to follow down the river to a better ford, where the water became more expanded upon the plain, and I swam over above the ford, where the current was less rapid.

During the remainder of the day proceeding down the open valley, crossing the river three times, at long but fair fords, at one of which we were found by Mr. Brunner from the south side. Slept in a totara wood on the left bank.

19th.—Proceeded down the Matukituki, or Aglionby valley, to near the point at which it again narrowed to a gorge, and flowed to the westward among high mountains, from which we had not, fortunately, such a distance from the settlement eastward to traverse, more especially as the worn state of our shoes, from so much river walking, were in a very precarious condition. At this point, I believe we must have been about twenty miles from the west coast, and, from the distance travelled to the south-west, it appears that we must have been even with

the embouchure of the "Rapid River" of Cook, and which is most probably the Buller. The level land reported by Toms, the sealer, is in this latitude, and the river, which he proceeded up for three miles, is perhaps the same as the one we had followed from the lake.

20th.—Returning along the course of the Matukituki, crossing the main river twice.

21st.—Returning up the Tiraumea, and, during the 22nd, by the upper valley of the Tiraumea.

23rd.—Continuing up the bed of the Tiraumea, being our eleventh day of river wading.

24th and 25th.—Between the Tiraumea and the Rotuiti valley nothing of importance occurred, except the finding of half a bottle of whiskey, in good order, at our depôt at the latter place, and drinking the same. The flour and other provisions which we had buried we found in excellent order; and although we had all the time had a plentiful sufficiency of provisions, we now had actually more than we could consume on our way to Nelson.

26th.—Crossed the Rotuiti river.

27th.—Were guided by the native along his old track through the big wood to the Motupika valley, avoiding the Mungatawai valley at the Wairau pass; the new track saving a distance of ten miles in the journey.

28th.—Down the Motupika to Mr. Stafford's sheep station in the Motuka valley, where we were most kindly entertained by Mr. Frazer.

March 1st.—Walked into Nelson.

The Matukituki, or Aglionby district, is formed by the junction of two considerable valleys with that of the Buller, at a point where the gorge of that river terminates, and its waters expand in a fine fern and pine-covered valley, which, in five or six miles, again becomes a gorge, and winds with the river flowing down it to the western coast.

The main opening, or that on the immediate banks of the Buller, is about two miles wide, and consists of fern flats, manuka scrubs, and pine forests, in which the totara and kahikatea seem to predominate. Midway between the two gorges of the Buller, the Otapawa valley joins it from the south-east, and almost opposite is the junction of the Matiri from the north: both wooded valleys of considerable extent.

The Otapawa appears to contain a strip of land of about a mile in width between the hills, and which appears to extend for about twelve miles. The valley, however, at that distance, apparently does not close in, but seems to continue to the foot of a high snowy range some twenty miles off to the S.E. In a like manner, the opposite valley of the Matiri seems, in its lower portion, to average three-quarters of a mile in breadth, with a length of eight miles, but without any hills in its upper portion obscuring a view of the Warepapa range, at the back of the Motuaka.

The close gorges of the Buller, both above and below the Matukituki, afford no view of distant mountains along their course, although the one descends from the Rotuiti plain, and the other, we have good reason to believe, expands upon the coast into a large and level country, reported

to exist by several authorities. The future examination of the two valleys of the Otapawa and Matiri cannot, therefore, be deemed unimportant.

From the irregular shape of the Matukituki, as also from our imperfect exploration, it is difficult to form an estimate of the quantity of available land which it may comprise: without the Tiraumea and gorges, 14,000 acres would not, I believe, be in excess of the quantity, and all that apparently excellent land, neither subject to floods nor in the least too steep for cultivation.

The Aglionby country, or Matukituki, being a wooded and not a pasturage country, is not at present available in any way for settlement. It is situated at too great a distance from the present district of Nelson to allow of its future produce being conveyed with profit to any but harbours on the western coast of the island; but should the country to the southward of Cape Foulweather be of the superior description which is reported, it will undoubtedly become an important and valuable inland district for some settlement which may hereafter be established in that direction, between which and Nelson will exist such a quantity of valuable grazing land as to cause the communication to be highly important, and render the route easily practicable.

CHARLES HEAPHY.

A TRIP TO CHANG-CHAU.

THE *Chinese Repository* noticed some time ago an excursion made in the department of Sou-chau, in the province of Kiang-sou, by M. Isidore Hedde, an *attaché* to the French mission in China. We are happy to be able to give some details of another trip undertaken by this indefatigable traveller, during November, 1845, through the department of Chang-chau, the principal focus of the silk manufacture, in the province of Fukien. The French legation, on coming back from the northern ports, visited Amoy, the *Cleopatre*, frigate, under the command of Rear-Admiral Cecile, anchored opposite the barren and inhospitable island of Kolong-soo. A pernicious fever had caused great havoc, amongst the victims we have to deplore the loss of Mr. Tradescant Lay, British Consul at Amoy. The fever had almost disappeared, when the French Plenipotentiary permitted the commercial delegates to land and explore this interesting part of the Chinese territory. M. Hedde, a special delegate from the silk trade, took up his residence at the house of the American missionaries, from whom he experienced, as elsewhere, the most generous and cordial sympathy, accompanied by the learned physician, Mr. Cumming, who has been a student at the School of Medicine at Paris, and who gives gratis to the sick medical advice, while he administers to them the consolations of religion.

M. Hedde has made several interesting and exploratory trips. Under

the patronage of the Rev. Messrs. Young, Brown, and Lloyd, to whom the Fukien dialect was familiar, he visited the interior scenery of the island of Amoy, the erratic rocks spread on the different summits which overhang the sea, the nine-storied pagoda of Nan-taibou, 1728 feet above the level of the sea, and which is a land-mark for sailors; he examined also the culture of the plant Toe, (*urtica nivea*,) a species of hemp or flax, known under the Chinese name of *Ma*, and the improper English name of *Grass cloth*. The nunnery of *Matsou-po*, remarkable for its porch, carved in the prosperous times of the Ming dynasty, did not escape his notice, nor the celebrated Boudhist temple of *Lampou-tou*, which is seen far from the sea, known by four pavilions, supported by gigantic turtles, and in which the goddess *Kwanyn*, the holy mother of help and mercy, is highly venerated. Not far from thence is the tomb of the famous pirate Koshinga, who, in 1661, expelled the Dutch from Formosa, and to whom the British nation owes its first commercial establishment in China. There is also to be seen the *Girls' Ditch*, where a traveller may be convinced of the reality of a barbarous custom, (infanticide,) an incredible crime among people who pretend to be the most civilized in the world. Above that abyss, upon rocks blackened by the uninterrupted action of a sun 100°, are a thousand earthen jars, containing bones collected by children in memory of their fathers; a singular contrast which is frequent in that part of the world, where customs are so diversified, and so different from those of Europe.

Amoy* is a *tching*, which is a part of the district of Tang-wan, in the department Tsinen-tchou. This town lies in lat. 24° 22' N., and long. 115° 36' E. from Greenwich. It is of the first order, but is neither the capital of a department, nor of a district. It is the seat of a special prefecture and admiralty. It is situate on the eastern coast of the Chinese empire, in the province of Fukien, on an island in an estuary formed by two large rivers. It is composed of two cities; the one small, placed on an eminence, and surrounded by a wall, the population of which amounts to from 15,000 to 22,000 inhabitants; the other extending on the sea shore, the population of which may be calculated at about 200,000 souls.

It is there that maritime commerce is carried on in all its activity. The port of Amoy is one of the most famous in China; 300 merchant junks are employed by the natives; the whole island, which is engaged in the same trade, comprises a total population of more than 400,000 inhabitants. Amoy is the second port open to foreign trade, it is, however, but the third in commercial importance. It is about 1000 *li* (333 miles) N.E. of Canton, and 400 *li* (120 miles) S.W. of *Fou-tchou*, another port just opened to foreign trade, but where it has been hitherto almost nugatory.

The principal trade of Amoy, with the western nations, has been carried on through the intervention of the English agents, connected

* Amoy derives its name from the island on which it is situated; the channel which separates it from the main land is nearly two miles in breadth; the island is about 35 miles in circumference, nearly circular in form.

with the houses established at Hong-kong. Opium is the staple commodity; business is transacted on different neighbouring points, to which the *clippers* or ships laden with this prohibited drug repair. It is said that the sales of it amount to more than 5000 dollars a day. The remainder of the foreign trade consists of woollen and cotton goods, and other articles from the straits, but in less quantity than at Canton and Shanghai. The staple article of export for foreign trade is black tea, which comes from the famous *Bohea* and *Anki* hills.

M. Hedde having examined the culture and indigo manufactories of Ko-long-soo, and finding nothing, as an industrial concern, worthy of serious attention, applied himself to look after the mulberry plantations. He found, indeed, the multicaule, in that richness of vegetation which he had already admired in the climate of the Philippines. He attentively examined this useful tree, in order to recognize the properties which might characterize it upon what he supposes to be its native soil. He then resolved to visit the interior of Fukien, and especially the *Chang-chau-fou*, considered as the principal focus of the silk trade in that province. Not wishing to expose himself to the inconveniences incidental on his journey to *Sou-chau-fou*, he applied directly to the temporary British consul, Mr. Sullivan, who, with Dr. Winchester, was kind enough to furnish him with all the information necessary to secure the success of his undertaking. Nevertheless, as *Chang-chau* was far from the boundaries, mutually agreed on between the Chinese and British governments, it was resolved that a regular permission should be demanded of the Chinese authorities. The *Tao-tao* of Amoy, having been consulted, procured a passport and guides to go to *Chiohbe*, a town situate near the boundaries of the department *Chang-chau*. The journey was performed in a common country boat, with the Rev. Mr. Pohlman, an American missionary, who seized on this two-fold opportunity of diffusing the lights of the gospel, and of rendering service to M. Hedde, whom he looked upon as a brother, a missionary of course of another kind, but who had the same object in view; the interest of mankind, and the diffusion of knowledge. Mr. Pohlman brought, for distribution on his passage, numerous copies of those works which are the fruits of piety and knowledge united; works capable of being understood by the common people, and which diffuse, at the same time, that Christian morality and the knowledge which constitute the civilization of the Western world.

Having set out from Amoy, on the 19th of November, the travellers ascended the river, which bears different names, according to the country through which it runs. The small island of Koua-soo is surmounted by a nine-storied pagoda, which is at the mouth of the river. They passed in front of *Hacting*, the chief place of a district, a walled town of about 10 *li* (3 miles) in circumference, and remarkable for its two-storied temple, and reached *Chiohbe*, the place of their destination.

The river there is about 300 yards broad, its water is fresh at low tide, and may be ascended at high water by junks of from 300 to 400 tons. M. M. Hedde and Pohlman stopped at the Custom-house, and afterwards went on foot through the town to the kotang's, the chief

officer of *Chiohbe*, who was very friendly to them. On being admitted to his house, they saw his servants smoking opium, which caused the Rev. Mr. Pohlman to remonstrate severely with them, and they saw his wives occupied in the arrangements of their toilettes, and of their ornaments in flowers, precious stones, and gold.

The kotang thinking it useless for those gentlemen to stop at *Chiohbe*, as little business was done there in silk, proposed to them a visit to *Chang-chau-fou*. He gave them a new passport, and new guides to accompany them to that city. Nevertheless, M.M. Hedde and Pohlman would not leave *Chiohbe* until they had visited the principal streets and citadel of that place, which is but a borough town. It is said to contain about 300,000 inhabitants. In the vicinity are eighteen villages, whose population are not included in the above number. In one of these villages there is a body of Christians, under the direction of a Spanish priest.

Chiohbe is a great emporium of common china-ware. A number of people are occupied in the culture of land and in the fishery, The women are seen running along the streets; they are generally dressed in long hoods, and bear in their hands long crook-sticks like a bishop's crozier. *Chiohbe* is a part of the district of *Leung-key* remarkable for its extensive cultivation of the mulberry trees, and the rearing of silk-worms. Along the river are various fortifications; they are generally about 5 *li* ($1\frac{1}{2}$ mile) apart. Not far from *Chiohbe* is one erected on a steep rock which commands the river, and communicates with another mountain by a singularly constructed aqueduct.

The country is very picturesque. Fukien being regarded as the Switzerland of China. The banks of the river and the valleys are shaded by majestic fig-trees (*ficus indica*), commonly called pagoda trees; by willows, bamboos, firs, pines, cypress, and delicious *litchi*, generally known by the name of cat's-eye fruit; by plantains, gouava, mulberry-trees, *toung-mou*, (split trees, from which is made that singular kind of paper known in Canton under the name of rice paper,) &c. The soil is granite, and, contrary to what has been asserted, there is no volcanic appearance. The low country is composed of a very deep alluvial soil. The overhanging rocks, blackened by ages, present heaps of a primitive formation; the inside of them is a very fine quartz and mica composition; the staple articles of cultivation are rice, grain, maize, sugar-cane, and tobacco.

The country is very subject to inundations. The last, in 1844, totally destroyed several villages, and the borders of the river present even now marks of great desolation. Three large burying grounds have been established at Amoy, where the bodies of those drowned in the inundations have been deposited.

About the distance of an hour's walk is the site of the city of *Min-ting*; the walls are still standing, and serve to perpetuate the name of the ferocious Koshinga. Our travellers, after exploring the remains of that desolate place, pursued their journey, and arrived the same day at *Chang-chau*, the chief place of a department and the object of their journey, favoured by the most propitious weather, and travelling by water six and a-half hours, performing a distance of 110 *li*, (33 miles.)

Chang-chau is situated in $25^{\circ} 24'$ N. lat., and $116^{\circ} 30'$ E. long. It has been already visited by several American missionaries, among whom was the Rev. Mr. Lowrie, who compared it in extent to New York. His narrative is inserted in the *Missionary Chronicle* of May 1844, vol. xii. At the entrance of *Chang-chau* is a famous bridge, but its beauty is not equal to the accounts given of it. It is formed of twenty-two apertures, formed by pillars on which are placed long granite stones. At the ends of the bridge are several rows of houses; at the west side is an ancient temple, built during the Tang dynasty, and adorned with gigantic idols. Quays border the river, which runs from N.W. to S.E. There are large coal stores from the Hing-hwa-foo mines. This coal is of a bituminous appearance; the Fukien anthracite comes especially from *An-ko*.

Chang-chau is a walled town about 15 li ($4\frac{1}{2}$ miles,) in circumference, with four gates placed as usual at the four cardinal points. These gates are formed of a door for foot passengers, and a canal for boats. The streets are wider than any seen elsewhere, and are embellished with fine and well furnished shops. In many parts are large and well ornamented stone gateways. A number of trees add to the gay prospect. The people are very affable. In the suburbs are large manufactories of tiles for houses, fire places, and other uses, as well as of conical jars of sugar. There are some sugar manufactories in the vicinity; one, in particular, which is very extensive, and has all the appearance of an European building, is seen on the left side of the river. The total population inside and outside this interesting town, is said to amount to 1,000,000.

Our travellers, accompanied by their guides, which had considerably increased in number by persons joining them through curiosity, and by whom they were frequently saluted as they passed by the name of *Nyman-nang*, (foreigners,) afterwards reached the *Tchi-fou*, or Mission house, where they awaited the orders of the magistrates. In the meantime, M. Hedde gathered all the information he could relative to the productions of the country. He visited the soldier's house, took a peep at their arms, examined their spears, bows, and muskets; he saw with surprise guns which were filled with rust and unfit to be fired; their two-handed swords, &c. He made inquiry as to the arrangements of the military service, and found it was performed by men perfectly ignorant of the military art. M. Hedde also made inquiries about the production of silk, and the manufactures of the country, and also about their dyeing establishments. While he was thus employed, the Rev. Mr. Pohlman was engaged in instructing the people, distributing his books, and preparing the inhabitants by his presents, and by his eloquent and kind language, to give a favourable reception to his mission. These well-meaning people were truly astonished to hear a foreigner speaking the *Chang-chau* dialect with remarkable facility; the boys, who were generally the most inquisitive amongst them, asked several questions, which were answered to their general satisfaction; but the oldest amongst them remembered the last American mission to *Chang-chau*, and that remembrance secured to the new travellers a friendly reception. An order having at length arrived from the authorities, our Missionaries

were conducted by a large troop of soldiers and lantern-bearers to a pagoda, where they were plentifully supplied with rice, fish, sweet potatoes, eggs, oranges, litchi, plantains, tea and cakes, spoons and chopsticks, cups and plates, were brought; indeed, nothing was wanting. Numerous servants were in attendance, and they were surrounded by a crowd of talkative people, who seemed much amused by the novelty of the scene.

A sleeping-room was prepared for our travellers, on the door of which was inscribed the character "*foo*," which signifies "happiness." This was considered as a favourable omen of a good bed and a quiet night, but alas! what a bed! what a night! Scorpions and spiders, mice and mosquitos, had possession of the place, and felt in nowise inclined to be dislodged. Instead of a bed a plank was all that was supplied on which to rest their now wearied limbs. Suspicions of intended mischief were now excited. They asked themselves whether they were to be made the victims of a despicable act of treachery? M. Hedde had present to his recollection the facts which occurred during his journey to *Sou-chan-foo*, and the emissaries then sent to seize on him, and the idea naturally suggested itself that he had been now permitted to proceed to *Chang-chau* only to make him bitterly repent of his excursion, and to disgust any other traveller from making a similar attempt. The night appeared, indeed long to the two missionaries; but daylight came at length to put an end to their perplexities. The striking of the gongs and the opening of doors announced the hour of their delivery, and the approach of officers bringing presents, and the arrival of people anxious either to receive instructive books, or to hear an interesting sermon, removed all further feeling of uneasiness.

The pagoda soon resounded with animated conversation, and while engaged at their breakfast, they heard the sounding of the large gong announcing a visit from the chief magistrate of *Chang-chau*. This unexpected arrival caused a great sensation in the pagoda, but the kindness of the *kwan* soon established a degree of intimacy which was advantageous to the mission. The Rev. Mr. Pohlman presented him with some of his best books, which he requested might be explained to him. He approved of the object intended by them, and said they should be used for the instruction of his family, adding that, if China had been always visited by such missionaries as Mr. Pohlman appeared to be, there would have been more Christians in the country,

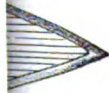
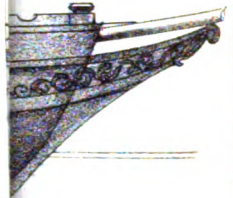
M. Hedde took an opportunity of presenting to the *kwan* a rich specimen of the production of the Jacquard looms of Lyons, which he brought with him for the purpose. The officer was much pleased with the present, which he said should be deposited in the government-house as a token of the friendly feeling of a town, superior in science and arts, to any place in China. M. Hedde availed himself of the friendly disposition evinced by the *kwan* to solicit permission to visit the manufactories of the country, and to examine into its cultivation, which was readily granted, and one of the chiefs of the corporation of silk-weavers was requested to assist the view of the missionaries.

The party was soon formed, and at its head proceeded the same infe-

rior *kwan*, who was designated by the Rev. Mr. Lowrie in his narrative, as "a talkative, fussy, fellow." In advance of the party, were soldiers carrying gongs, whips, ropes, and other signs of their authority; and the rear was brought up by the coolies, carrying chairs for the convenience of the missionaries when fatigued. They first visited the famous pagoda of the Tao sect, situated at the foot of *Kay-ngwan-shan*. It was formerly a celebrated manery, but is now deserted, and, like all the public buildings in China, is in a state of decay. The granite candlesticks which adorned the front were partly destroyed, the gigantic idols removed, and the whole place overgrown with grass and weeds. From the fortification was an extended view over *Chang-chau*, and the surrounding country. The town does not appear very large, though intersected by canals and intermixed with groves and large open spots. Towards the north, outside the walls, are barren hills, covered as usual with tombs. To the south, in the plain, are fields planted with rice and sugar canes. The walls of the town are in a tolerable state of repair; at intervals there are guns mounted on carriages, but in a very un-serviceable state. On the guns are Chinese characters, denoting the name of the emperor. Along the walls, on the west side, runs the river Chang, with its two bridges, and on each bank the luxuriant vegetation strongly contrasts with the high and barren granite mountains which overhang it.

Our travellers examined very attentively the plantation of mulberry trees, which are generally of the multicaule kind, with many white. The wild ones are not rare, and lobated leaves are frequently seen. The silk worms are very meagre, their rearing is very carelessly attended to, and the cocoons are so small, that, in order to obtain an English pound weight of silk, 10,000 of them are sometimes necessary. The reel is very imperfect, the process is the same as that adopted in the silk territory of *Shunte* in *Kwangtung*; earthen furnaces and boilers, a spindle on which the reel is tied, a common reel on which the silk is to be wound, after having passed through the hole of a piece of copper in a common cask are used. This is the simple process employed to reel silk; a silk thread which has only one twist, and which is very irregularly reeled, takes from 10 to 20 cocoons. To the rich culture of *Che-hiang* and *Kiang-soo*, visited by M. Hedde, has succeeded the miserable routine of the southern processes.

Weaving is here better understood, though still inferior to that of the other parts of China. They, however, saw plain stuffs; dressed and undressed taffetas, (*Chang-sae*,) which were neither wanting in suppleness nor brightness; cut and friezed, plain and figured velvets, some of them even with several warps, superior to any other of the same kind manufactured in China. For manufacturing the latter, there are some looms with a frame, including from 8 to 1000 bobbins, or small rolls for the warp. The draw-loom, as throughout all China, is the only process employed, with treadles and beddles to form the figure of the stuff. The only difference between the Chinese draw-loom and that in use in Europe, consists in the workman's drawing the ropes at the top of the loom instead of being beside it.



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The dyeing establishments are very numerous at *Chang-chau*. It is the only town in Fukien famous for the delicacy and variety of its colours. M. Hedde has got in his possession, specimens of all the dyeing materials there used. He particularly remarked, as in Canton and Sou-chou, the *hung-hwa*, a species of *Carthamus*, from which they make excellent pink and scarlet, and four other substances employed with success in obtaining different shades of yellow. There, as throughout all China, the best blue is obtained from dry or wet indigo.

While M. Hedde was engaged in examining every thing connected with the silk trade, the Rev. Mr. Pohlman assembled a numerous auditory around him, whom he instructed, while at the same time he amused them, (*docet ludendo*;) for, though the Chinese are a serious people, they are fond of wit. They would not be amused by the big words of a clown, but are fond of the fine allusions of good society. M. Pohlman, notwithstanding his gravity of demeanor, possesses this talent, and is fully master of the means of exciting the laughter of his auditory. The inhabitants of *Chang-chau* will, therefore, long preserve the recollection of this amiable missionary. They rambled through the town, visited the manufactory of spectacles, which are made of *Chang-fou* rock chrysal; the quicksilver establishments of *Lung-ki* and *Chang-ki*; the great sugar works, and several others.

The town is pretty well built: the streets are wider than those of the other places visited by our travellers; they are from four to five yards broad, and, in some places, there are squares planted with mulberry and longan trees. Some of the portals are worthy of notice to travellers.

The time now arrived for leaving *Chang-chau*, and the departure of the missionaries took place in the midst of an escort, as brilliant as ever attended a foreign envoy. Amidst the benedictions of a whole population, their junk set sail, laden with presents of all kinds from the principal magistrates, and in the midst of the universal acclamations of the whole people. On the following day, two of M. Hedde's colleagues, attached to the Commercial Mission to China, (M. M. E. Renard and M. Rendôt,) arrived at the place, and on the day after, the French Plenipotentiary in person, attended by Rear-Admiral Cecile, and an escort of French sailors. We hope they met with the same welcome as our travellers.

M. Hedde has brought back with him the numerous specimens of the materials in use in the branch of commerce in which he is more particularly interested, as well as plants, seeds, &c., which he will disseminate in his own country.

Hong Kong Register, Jan. 26th, 1817.

THE FUMIFIC IMPELLER.

(Continued from p. 191.)

IN a former communication the "results of certain experiments" were recorded, shewing the impulsive force of the hot blast or blasts from close
NO. 8.—VOL. XVI. 3 G

furnaces, when delivered under water, somewhat in the manner of a rocket, which were successful so far as the experiments went.

The publication of these experiments, and also my previous "Description of the Fumific Impeller,"* have awakened the attention and drawn forth encouraging opinions of men of science, and others skilled in chemistry, gunnery, and dynamics; and many shipowners already begin to see the probable success of the invention.

I have all along said, that little encouragement could be expected, at the dawn of this invention, from engineers and mechanics, and that they were not the proper judges of a *chemical* engine.

A very few of them encourage me to proceed, some of them admit I may be right in theory, but doubt my succeeding in practice; others are too busy to concern themselves about it; unable to appreciate the invention; unwilling to be troubled in the matter; or interested otherwise.

Was not James Watt neglected for years? Murdoch, Winsor, Clegg laughed at for their Gas Lights? Were not the wonders of the Steam Printing Press "poo poo'd"? and did not a Committee of British Admirals, in 1812, after an examination of engineers, declare Ocean Steam Navigation to be impossible?

The encouragement given to me by Sir Thomas Hastings, Professor Baden Powell, Professor Harman Lewis, Colonel Angelo, Mr. Aytoun, Mr. Maugham, and a few other gentlemen of science, led me to make the larger experiments recorded in my former communication, and I now hope to be able to make an experiment similar to what is designed on the accompanying drawing, whereby direct comparison may be had with a steam-engine.

So long ago as the year 1829, Dr. Arnott, in his Elements of Physics said, that "recent investigations have proved, that any given quantity of heat, when used to dilate air, produces about four times the quantity of expansive power, that it does when used to form steam." * * * * *

"Could a durable engine be contrived, its advantages over the steam engine would be very considerable."†

* Published by Dalton, Cockspur Street.

† In my "Description of the Fumific Impeller," I referred to the experiments and opinions of Gay Lussac, Lavoisier, Laplace, Count Rumford, Crawford, Dalton, Ure, Thomson, and Turner, all confirmatory of the fact that air is more economical than water, as the medium for availing of the power of heat, because the specific heat of water being 1. that of an equal weight of air is 0.2669, therefore, that if 1lb. of fuel is required to heat a given weight of water, 1°, the smaller quantity 0.2669 of the same fuel will suffice to heat the same weight of air, 1°.

It is true, that there is a larger space required for a given weight of air, than would be occupied by the same weight of water; 100lb. of water occupying a space of 1.6 cubic foot, whilst the same weight of air occupies 1328 cubic feet; and hence, a great difficulty, felt in all attempts to heat the air by *transmission*.

When it is heated by *chemical union*, as I do, as Mr. Stein did, as Dr. Arnott proposed, and as Sir George Cayley practised to drive a piston-engine, the bulk of air, though great, is easily heated, and the bulk of the apparatus is practically smaller than that of the mere open furnaces and chimney of a steam-engine of the same power.

What we have just seen, that Dr. Arnott has described as a desideratum, has (as already shewn) been often, and only, attempted by an imitation of the steam-engine, but is now on the eve of being effectually accomplished, by no imitation of the steam-engine, but by direct application of the impelling hot-blast, and which is little dependant on machinery. At least, such is thought of my Fumific Impeller by many gentlemen of high scientific attainments. To quote the words of only two among many, Mr. Maugham says, "There cannot be the least doubt, theoretically speaking, of the advantages that will be gained by using the heated products of combustion in the manner you describe; instead of employing steam in the ordinary way:" and Dr. Ure considers that I can make "a powerful, durable, and economical engine, a successful rival to, if not a substitute for, the steam machinery of steam boats."

It has been shewn in my former communication, how one man, blowing cold air, (merely by a common forge bellows,) through a fire in a close furnace, caused the discharge of part of that air heated, and of hot carbonic acid, and hot carbonic oxide, dust, ashes, &c., under water, to do the work of more than two men. We are now about to try the experiment described in the accompanying drawing, with a (90 horse steam engine reduced to) 45 horse steam power, blowing cold air through close furnaces of its own boiler, and we fully expect to obtain an impulsion and rate of navigation equal to that now attained by the older method with 90 horse steam power, and to obtain the great advantages of small snug requisite space for the power, with perfect safety, and without chimney or smoke to disfigure or dirty the ship.

I certainly do hope ultimately to discard the steam engine altogether, and taking back part of the boat's power or motion through the water by means of paddles (or screw) to drive the air pumps, which Mr. Farraday says, "would be a decisive experiment."

It is but fair to state, when referring to the following opinion of "*The Artizan*," that the writer had not had, when he wrote, an opportunity of knowing the "Results" of my experiments: still the review should be replied to, because it refers to an essential feature in my application of the power.

"*The Artizan*" is well known as a publication devoted greatly to the steam-engine in all its varieties. The Editor considers that as the velocity of air rushing into a vacuum is about 1332 feet per second, it will be found that "if only one atmosphere of pressure be used, the locomotive,* in order to obviate loss from slip, would require to move at the rate of 900 miles an hour, and the pressure answerable to the difference between that speed and the speed realized, would be thrown away. The pressure of the effluent air might, it is true, be diminished, whereby the loss by slip would become correspondingly less, but the size of the dis-

* This objection being specially directed against my proposal to obtain land locomotive power, the rule for calculating the impulse may be well stated here. "The effective impulse is as the surface, as the square of the velocity of the wind, as the square of the sign of the angle of incidence, and as the sign of obliquity jointly, which we may express by the symbol $R = S.V.^2 \sin.^2 I. \sin. O.$ "—*Robinson's Mechanical Philosophy, Edited by Sir David Brewster.*

charging orifice and of its inclosing tunnel would, in that case, be required to be increased to most inconvenient dimensions."

Here we find a good *mechanic* confusing himself and his readers on a *chemical* subject, supposing that because the mechanical appliances of paddle-wheels or screws, or locomotive driving-wheels, must be made to avoid the slip that necessarily attends them, the discharge of æriform products presents the same difficulties.

The answers to the objection will be found in "*Robinson's Mechanics*," (*art. Pneumatics*), and may be gathered from the two following quotations therefrom.

"If air be moving twice as fast, its particles will give a double impulse, but, in this case, a double number of particles will exert their impulse in the same time; the impulse will, therefore, be four-fold, and, in general, it will be as the square of the velocity."

"To find the impulse of wind on a square foot, corresponding to any velocity, divide the square of the velocity by 500, and we obtain the impulse in pounds."

But we find from the same authority, that Rouse's experiments gave an amount more than this by about 18 per cent.

With reference to the orifice at B on the annexed drawing, and to the objections of "*The Artizan*," it may be anticipated from the above rules,—and in practice it will, I hope, be demonstrated, that 1 foot of area of discharge pipe will alone give, at such a high velocity of discharge, an impulsive blast equal to 4173 lbs.

Had "*The Artizan*" had the same opportunities as gunnery officers have, or such as through the kindness of the Admiralty, and Sir Thomas Hastings, I have had on board H.M.S. *Excellent*, in watching the recoil of heavy and heavily shotted ordnance, he would not have made so essential an element in calculating the power of the invention (indeed, in any calculation, of pneumatics and gunnery,) an objection to its available power. This hot powerful blast, 4173 lbs. on each square foot of discharge pipe, such as B, cannot condense, and it cannot escape through the water, before giving its impact and impelling the vessel in her course. I hope to make 160 of such discharges in a minute; being 80 per minute from each discharge pipe.

Let us now glance at the great saving of *weight and cost*, and the *greater safety* which must result, if æriform products of combustion, with the necessary furnaces, pumps, and pipes, &c., be used instead of water, and all the costly, heavy machinery of the steam-engine.

In the steam-engine, the heat being transmitted to the water in the boiler, it is found more economical to have large fire and slow combustion. In the Fumific Impeller the more rapid the combustion the greater the economy of heat.

A marine steam-engine of 500 horse-power of the lightest construction weighs not less than 250 tons, with water in the boilers, say 295 tons. Is it too much to expect that a Fumific Impeller may be had of the same power, to weigh two-thirds less, occupy much smaller space, and require less than half the coal room? Is it too much to expect a

saving of the 500°, (*i. e.* half the fuel,) which Mr. Murray,* the chief engineer of Portsmouth dock-yard, assigns as the loss at steam-boat chimney tops?

May we not also expect the saving of part of the other moiety—a part of that saving due to the difference of the specific heat of air and of water?† In any case there is a wide margin to work upon, and there is plenty of power to spare for working the blowers E.E.

A certain amount of fuel is necessary to expand the molecules of water to give it a temperature of 1000° latent heat, and 220° sensible heat, = 1220° at a cost, say, of 20 shillings; whilst only $\frac{260}{1000}$ th of the same heat will raise air to the same temperature of 1220°, *i. e.* at a cost of 5s. and $\frac{38}{100}$ th of a shilling; add the half of this price for the air-blast, *viz.* $2\frac{60}{100}$ th, and the cost will be only 8s. and $\frac{7}{100}$ th of a shilling. So that if a steam-engine could be made to use, and use profitably, all the heat generated in its furnace, that heat, or power, would cost 20s., while the same heat, or power, in the Fumific Impeller would only cost about 8s.: a sufficiently decisive proof of the economy of the power sought to be applied.

The *greater safety* of using the hot products of combustion instead of using water and its steam, is easily demonstrated.

In a steam-engine boiler, the heat imparted by the furnace is given to every molecule of water inclosed in that boiler, much as carbonic acid gas is forced mechanically into soda water. When the boiler is closed at its valves and openings, the water may be at 220° or 250° of sensible heat, or at a lower or at a higher temperature, (suppose the fire removed from under the boiler, the heat is still in the boiler); the water which is possessed of the heat remains tranquil, the steam is colourless—invisible.

So also in a tight bottle of soda water, the water is possessed of the carbonic acid gas; all is quiet, no ebullition, no effervescence. But start the cork, a report is heard, a rush from within takes place, and every particle of the soda water gives off suddenly its carbonic acid from the bottom, the top, the sides, and from innumerable points. In a hot day, and with a warm hand, the bottle may be held upright, and yet empty itself almost entirely. If, instead of allowing the cork to spring out suddenly, we gently allow the carbonic acid to flow out, ebullition is apparent, but report and loss of the soda water is prevented. Now in the case of a steam-engine boiler, open the main steam-pipe, or a safety valve, gently, and steam comes off; but let the steam-pipe be kept close, the engine not going, the safety valve accidentally or designedly kept close; suppose a defective plate or seam in the boiler, the weaker part gives way, not gently, but suddenly, and every molecule of hot water flashes into steam.

* Mr. Murray, in a paper in the Institution of Civil Engineers, recorded his investigations of the combustion in marine steam-engines, and he considers that the mean temperature of the furnace of a steam-boat boiler is 1000°, and that at the top of their chimnies, 500° of heat are lost, and we have seen (page 190.) that 500° constitute an atmosphere of pressure.

† See foot note, p. 410.

A boiler of 100 horse-power, for marine purposes, has, say 9 tons of water charged with heat; when it bursts, this water, which occupied as a liquid, a space in the boiler equal to only 3580 cubic feet, starts out into a bulk of more than 6,086,000 cubic feet. The terrible effects are not limited to the first impact which rends the boiler; there is a rapid succession of impacts, each particle of water giving out its power; and hence it is, that sometimes half a boiler weighing many tons, is projected to a great distance. In the boiler there is an immense reservoir of power.

In the close furnace of the Fumific Impeller, the contained bulk, the products of combustion at a temperature of 500°, is not only much smaller, but (it cannot flash into 1700 times its bulk as water does) it only, when liberated, occupies double its bulk; if the temperature in the Fumific Impeller were even as high as 1020°, it could, when liberated, only occupy about treble its bulk. The bursting of the close furnace, would be a mere flash in the pan; that of a steam-boiler, the explosion of a magazine.

The *durability* of the apparatus is certain. No part of it need be subjected to so great a heat as the steam-engine furnaces, whilst the facilities for protecting my furnaces C.C. from any destructive agency are numerous.

Nothing great was ever done in a timid spirit. Something must always be risked, and the amount of the risk must be in proportion to the value of the object aimed at. My object is no mean one; it is an entire revolution in our marine and inland locomotion. It has already been met with approbation from some whom the public justly regard highly; by doubt from others open to conviction; by opposition from some interested, whom I hope I shall live to convert; and by ridicule from such as find it easier to laugh than to learn.

ALEXANDER GORDON, *M. Inst. C.E.*

22, *Fludyer Street, Whitehall,*
15th July, 1847.

NORTH-WEST COAST OF AUSTRALIA.

WE extract from the "*Inquirer*," a Western Australian Journal, the following interesting narrative.

We promised in our last to give our readers a sketch of the course of the *Bramble*, since the departure of H.M.S. *Fly* for England, when Lieut. Yule was left to complete the survey of the north coast of Australia, which we are enabled to do through the kindness of that gentleman in furnishing us with the notes of his voyage.

The only part of much interest to the general reader is that relating to New Guinea, and we shall, therefore, touch very briefly on the earlier portion of the voyage from Sydney through Torres' Straits by the inner passage, being the line proposed to be adopted by the steamers from Port Essington to New South Wales.

On Sunday, the 21st December, 1845, the *Bramble* set sail from Port Jackson, in company with the *Castlereagh*, tender, commanded by Mr. Aird, touching at Moreton Bay, where Mr. Yule paid a visit to an old acquaintance, Capt. Wickham, now a settler on the Brisbane, and assisted that gentleman in completing the survey of the bay, which had been very imperfectly done before. He describes the Brisbane as reminding him much of the Upper Swan, but as not so much cultivated, nor so thickly settled. From thence the *Bramble* proceeded slowly to the northward, being much delayed by the bad sailing of the tender, (a vessel purchased into the service at Sydney,) her voyage affording nothing worthy of notice till she arrived in Torres' Straits, where we were struck with the commentary which Mr. Yule unconsciously affords upon the *perfect safety* of that passage, now so much vaunted by the advocates of the northern route, While the *Bramble* and *Castlereagh* were lying off Sir Charles Hardy's Island, the latter being deficient in ballast, Mr. Aird was despatched with the boats to look for the *wreck* of the *Maid of Athens* and the *wreck* of the *Martha Ridgway*, with the view of procuring some, and having failed in discovering the former, and, therefore, in procuring a sufficient supply, he was again sent to the *wreck* of the *Sir Archibald Campbell* for the same purpose. So much for Torres' Straits!

Mr. Yule strongly recommends Caincross Island as the best station for obtaining wood and water, for vessels navigating the straits, there being abundance of both easily procurable, and even large timber, if required. On this island they shot four *megapodii*, and observed many of their nests, some of which Mr. Yule describes as being 12 feet high, and upwards of 50 feet in circumference.

On Friday, the 10th April, they made the coast of New Guinea, which presented a low thickly-wooded coast-line, backed by mountains of magnificent height and beauty; the country being apparently very rich, with many villages, embowered in cocoa-nut trees, scattered along the shore. While coasting along, in search of a convenient place to land, they encountered a native vessel of most extraordinary size and character, which we will allow Mr. Yule to describe in his own words:—

“ At daybreak, as the sun was rising, I was very much struck with the grandeur of some very distant mountains, in a south-eastern direction; one in particular, the outline of whose summit was only visible above the intervening clouds; immense ranges of mountains were also distinctly visible this side of it, extending in a N.W. and S.E. direction. It is seldom the rising sun has disclosed to my sight so splendid a view as then presented itself; but in a few minutes, when the sun's disk appeared, the beautiful scene vanished, leaving only inferior cloud-topped mountains visible, together with the rich and undulating foreground. We shortly afterwards saw the strange sail seen last night. Although she was much nearer, she proved more unaccountable than before. As there was not sufficient wind to enable us to weigh, I resolved to send Mr. Pollard in the second gig, to take a nearer view of this extraordinary vessel. I watched the boat until Mr. Pollard must have gone nearly five

miles from us, when the boat's sails appeared a mere speck, when close to the wonderful stranger.

“ On this officer's return, he informed me he had approached within bow-shot of the vessel, which proved to be a gigantic double canoe, which he conceives must have measured 50 or 60 feet long, kept apart and together by a platform, from 15 to 20 feet broad, which extended nearly the whole length of the canoes, the after-end being square with the sterns of the boats; 6 or 8 feet of this was left clear for the three steersmen, who guided the vessel with three long paddles over the stern. With the exception of this part of the platform, the whole was covered by a strong well-built house, made of cane, the roof being flat, and about 5 or 6 feet above the platform. This roof answered the purpose of an upper deck, affording the crew the means of conveniently walking on it. This extraordinary craft was propelled by two large mat sails, each spread between two bamboo masts, the *heels of which were fixed in the same step*. The mastheads being spread (athwartships) *from 20 to 30 feet asunder*, the sail being *triangular between these bamboo masts*, which were supported by diagonal shores fore and aft on either side; besides these two large sails, the canoe had numerous smaller (square) ones suspended from the principal masts; there was also a small square sail forward. The whole of the spars and rigging were ornamented with flags and streamers. Mr. Pollard thinks he saw about 40 or 50 people on the roof, several of whom were in the act of stringing their bows; except this precaution on the part of the strangers, there was no demonstration of hostility. After taking a good view of this most extraordinary canoe, Mr. Pollard returned, and she ultimately was wafted out of sight. Whence she came, or where bound, still remains to me a problem.

“ At noon I obtained the lat., which was $8^{\circ} 3' S$; long. by chronometer, $145^{\circ} 28' E$.

“ In the afternoon the *Castlereagh* was visited by two small canoes, with eight men, who had come off from a village we discovered abreast of us. The natives brought off a few cocoa nuts and some bows and arrows, which were readily bartered for such trifles as were given in exchange.”

The lofty mountain which so much excited Mr. Yule's admiration was named by him Mount Victoria, and between it and the shore were several ranges of inferior altitude, which gave him “ every reason to believe that the lower regions were well watered and fertile.”

Having fixed upon a favourable spot for commencing his triangulation, behind a promontory which served to conceal them from the view of a native village, which they saw at no great distance, Mr. Yule went ashore in the first gig, with five seamen and one marine, accompanied by Mr. Sweetman in the second gig, with three seamen and two marines, all well armed, and proceeded to *hoist the Union Jack and take possession of the place in the name of Her Majesty Queen Victoria*. Having successfully performed this duty, and obtained the observations he required, Mr. Yule thought it high time to return on board; but the surf had in the meantime increased so heavily, that, in the attempt, the second gig was swamped, and every thing in her, including the arms,

lost, except the quintant and chronometer, the boat herself being with difficulty saved by being towed outside the surf by the other gig. The rest of the adventure we shall give in Mr. Yule's own words:—

“At this time I observed the *Castlereagh* about two miles beyond *Cape Possession*, under sail; I therefore made signs to Mr. Wright, in the first gig, to tow the second gig towards the *Castlereagh*, which I concluded would attract Mr. Aird's attention. In this I was not mistaken, as the *Castlereagh* was immediately anchored about $1\frac{1}{2}$ mile off, and her boats sent to the relief of ours. In the interim I determined that every thing that was washed on shore should be collected together; after which we all huddled close under a bush near the beach, whence we could see our boats and be hid from the view of the natives as much as possible.

“The *Castlereagh's* boats having at length closed with the *Bramble's*, the second gig was soon baled out, when all four boats pulled up abreast of us outside of the surf, which had continued to increase; the *Castlereagh* at the same time weighed, which I confess alarmed me much, as I knew very few persons could be left on board after she had dispatched two boats' crews; I concluded we were discovered by the natives beyond *Cape Possession*. I was in a few moments confirmed in my fears by seeing Mr. Andrews prepare to push his boat through the surf, I waved him back, when he energetically pointed towards *Cape Possession*. I fully understood his signs (that natives were coming,) but still waved him off, as I knew his gallant attempt to relieve us would fail, and that he and his boat's crew would be added to those already in distress on shore; he, however, pushed through the surf, when, as I expected, his boat was upset, and all his arms, ammunition, &c., lost. At the same moment we observed crowds of natives coming round *Point Cape Possession*, armed with spears, clubs, and stone axes. Our arms and ammunition had been all lost or destroyed; our situation was therefore most defenceless, and, I may say, our retreat hopeless; those boats at the back being unable to afford us the least relief. I then thought it best to shew no signs of fear or mistrust, but to make friends with the natives, and amuse them, until the next tide should enable a boat to back through the surf. In the interim, Mr. Andrews, with his four men, and assisted by some others, made three attempts to launch his boat, but failed, and she was ultimately dashed in pieces against the rocks. I advanced alone, with playful gestures, waving a branch of green leaves, in token of peace. One man pointed a spear at me, but the others stared at me with more wonder depicted on their countenances than ferocity. I then offered them some bits of tobacco, which they would not approach near enough to take from my hands. This shyness, unfortunately did not continue long, for when the main body came up, amounting to eighty or ninety men, armed, they became troublesome, and laid their hands on every thing they could get hold of that was lying on the beach.

“To these robberies I attempted to put a stop, and made them some presents instead; but the savages must have known our helpless condition, and became every moment more daring and rapacious; and, to add to our tribulation, we observed two large canoes, each containing 30 or 40 men

come round Possession Point, and heave to between the *Castlereagh* and the boats, as if with the intention of cutting off the latter. The *Castlereagh* could not, unfortunately, take advantage of her guns, by firing grape or cannister, as we were completely intermixed with the natives. At this critical stage of our anxiety, the second gig, at all hazards, was veered through the surf, and to our great joy, four or five men were drawn off in safety. A second attempt was made and succeeded. Then came the awful moment for us who waited for the last trip, for only a few moments before I baulked a native taking a deliberate aim at one of our last men who embarked.

"The natives, now seeing our numbers, laid hands on us in the most violent manner. My quintant was first wrested from my coxswain, who, in a tone of grief, made known the circumstance. I immediately turned round and exclaimed, "Oh don't part with that;" but it was too late; and when I endeavoured to recover it, I found a club wielded over my head. In making my escape from this wretch, I was secured by four others, who first took the government micrometer, which was slung round my neck. I then endeavoured to struggle out of their clutches, and escape with the pocket chronometer and note-book, but these, as well as every article of clothing I had about my body, were stripped off; when the second gig was opportunely again backed in, and in this forlorn state, Mr. Pollard, the two marines, and I, waded off, and were dragged into the boat. We then went on board the *Castlereagh*, which was at anchor about a mile from the shore; the canoes slowly made off to the north-westward, after we had embarked. The boats having been hoisted up and secured, we got the anchor up and proceeded out to the *Bramble*, and anchored close to her at 6h. 30m. P.M. I immediately afterwards returned to the *Bramble*, truly thankful for having escaped with our lives. The loss of instruments grieved me exceedingly, particularly as the nature of the coast rendered it next to impossible to effect a safe landing to attempt their recovery.

"From the account I heard of the ferocity of the natives where the *Fly* had been surveying last year on this coast, I confess I fully expected death would be my fate in a few minutes, and thought of the similar position poor Capt. Skying was in when murdered at Cape Roso. If we had been possessed of six or eight muskets and plenty of ammunition, I think the natives might easily have been checked, but being defenceless, my only hope was to dissemble our fears and amuse them, to give us time until we could effect our escape. These people varied in complexion from black to a light copper colour; they appeared well made and active; all of them were ornamented, but some much more so than others; their ear-rings were made of rings of tortoise-shell, a number of them being fastened together, and suspended to the lower parts of the ears, in which are holes stretched so large as to admit a man's thumb passing through them; the cartilage dividing the nostrils is perforated in like manner."

The most extraordinary circumstance connected with this adventure, is the moderation displayed by the natives in allowing the party to get off at all, especially if the generally received notion of their cannibalism be true. It is Mr. Yule's opinion that if the party had not lost their fire-

arms, they would have experienced no difficulty in making good their retreat without loss of any kind; and, after all, the treatment they received was not a whit worse than what many a shipwrecked mariner has met with on the coast of Devon and Cornwall within the last 50 years. Nothing of interest occurred in the further voyage of the *Bramble* till she arrived at Keepang, where she found the *Paul Jones*. It had been Mr. Yule's intention to return to Sydney by Torres' Straits, but finding it impossible to work the *Castlereagh* against the monsoons, he bore up for this course as *the more practicable and safer of the two*.

COM. BECHER'S ARTIFICIAL HORIZON.

Oriental Club, July 13th, 1847.

SIR.—I should not be doing justice to Capt. Becher's admirable invention, and to you as the maker, if I did not make known the results of my observations with his Artificial Horizon. It certainly requires practice to insure accuracy, but my first attempts with it varied only 10' from the truth, although I had to *find the error at sea*, with considerable motion.

I forward you the longitude ascertained by it in N.E. trade, with the ship pitching considerably.

	Artificial Hor.	Sea Hor.	
May 27.	21° 57' W.	21° 58' W.	} Strong breeze, much motion.
28.	23 0	23 3	
29.	23 24	23 17	
31.	23 2	22 57	
June 1.	23 4	23 11	
2.	25 5	25 6	
3.	26 44	26 48	

I had not used the instrument for at least a month before these observations were commenced.

On July 1st, 1847, in the Channel with light southerly breezes and hazy weather, our latitude, by Capt. Becher's horizon, was 49° 52' N., there was no probability then of getting the Sea Horizon, and I should not have hesitated to depend upon that observation. It did afterwards clear up for a moment, just at noon, and gave our latitude 49° 51' N.

I certainly will never sail again without one.

I remain, &c.

ALFRED PARISH,
Commander of the *Stag, E I.*

To Mr. Dennis, Optician, Bishopsgate Street.

[The above affords another instance of the accuracy of the instruments made by Mr. Dennis, combining neatness with strength, and displaying great attention in carrying out the object of the inventor.—ED.]

NORTH AUSTRALIA.

THE following is extracted from the *Australian Journal*.

The public are no doubt anxious to know something about the new Settlement to the north, which, it has been decided, shall be much nearer home than they were led to anticipate.

It was considered, at first, that Port Essington would be the chosen spot; afterwards, when that spot of this vast island-continent was considered unsuitable from its alleged unhealthy character, its inter-tropical position alone being calculated to prove detrimental to European constitutions. Halifax Bay, situate in about 19° S., was next much talked of. It now appears that Port Curtis, into which the Boyne River is supposed to empty itself, has been the locality fixed upon. The exact spot for the seat of government has not yet transpired.

The *Cornubia* steamer, which conveyed Col. Barney, the superintendent, and suite, to Port Curtis, has returned. The harbour, or rather harbours, are described as superior, and fully equal, for every shipping purpose, to Port Jackson, which stands almost unrivalled. Port Curtis is situate in about lat. $23^{\circ} 50'$ S., and long. $151^{\circ} 30'$ E., being nearly 300 miles to the northward of Moreton Bay. There was every indication of water being plentiful in the immediate neighbourhood of the port at certain seasons, but the expedition was unable to procure a supply, and that but of an indifferent quality, at a nearer spot than an inlet about six miles to the southward of the anchorage of the steamer, within Port Curtis Harbour. At this inlet, about twenty blacks were communicated with, who directed the expedition to the water holes, the contents of which were very unpalatable. These blacks were very friendly, and from their manners had evidently seen white men. They asked for flour, appeared frightened at the sight of fire-arms, but did not understand the use of tobacco or the pipe. Capt. Perry, who was landed at Moreton Bay, and started overland in company with Mr. Burnett, the government surveyor, and others, for the purpose of discovering, if possible, whether the Boyne emptied itself into the sea in the vicinity of Port Curtis Harbour, had not been seen by the expedition since; and, therefore, it is impossible to say how far the Captain and his surveying party have succeeded. The country in the immediate neighbourhood of the port is high forest ground, covered principally with stunted iron bark, box, and blood-wood. — *Hong Kong Register*, Feb. 16th, 1847.

NAUTICAL NOTICES.

Trinity House, July 8th, 1847.

PLYMOUTH SOUND.—The Beacon upon the east-end of the Breakwater, and the Red and White Beacon upon Plymouth Hoe, presenting more distinct objects than those which have been heretofore used, as the leading marks for the eastern Channel into the Sound.

Notice is hereby given, that on the 31st December next, the sea marks on the Citadel Wall will be obliterated, and the following used as the leading mark up to the Breakwater, viz. :—

The Beacon on the east-end of Plymouth Breakwater, on with the Red and White Beacon upon Plymouth Hoe.

By order,

J. HERBERT, *Secretary.*

“ BEAR HAVEN LIGHTHOUSE, SOUTH-WEST COAST OF IRELAND.—The Corporation for preserving and improving the Port of Dublin, hereby give notice that a light-house has been erected on Roanacarrig Island, Bantry Bay, county Cork, from which a light will be exhibited on the evening of the 1st of August, 1847, and which will thereafter be lighted every night from sun-set to sun-rise ”

“ Specification given of the position and appearance of the light by Mr. Halpin, Inspector of light-houses :—

" The light-house built on Roancarrig Isle, at the eastern entrance to Bear Haven, is in lat. $51^{\circ} 39' 10''$ N., and long. $9^{\circ} 44' 43''$ W., and bears—

" From North Point of Whiddy Island—

" Just open of Mehal Point, W.b.N., distant $10\frac{1}{4}$ sea miles.

" Ducallia, (Half-tide Rock,) W.b.N. $\frac{1}{2}$ N., distant half a sea mile.

" Gerane West Rock, (off S.W. point of Whiddy Island,) W.b.N. $\frac{3}{4}$ N., distant $7\frac{1}{2}$ sea miles.

" Sheep's Head, N.E.b.E. $\frac{1}{2}$ E., distant $7\frac{1}{2}$ sea miles.

" Carrigavadra, (or Dog Rocks,) E., distant 1 sea mile.

" Lonchort Point, (Bear Island,) E.b.S. $\frac{1}{2}$ S., distant $1\frac{1}{4}$ sea miles.

" Illaunnakeragh, E.S.E., distant $5\frac{1}{2}$ sea miles.

" Sea Point, E.S.E. $\frac{1}{2}$ S., distant 4 sea miles.

" The light will be a fixed bright light, showed to seaward and to haven from E.b.S. to W.N.W. $\frac{1}{2}$ W., and at an elevation of 55 feet over the level of high water spring tides.

" The tower is circular, coloured white, and having under the projecting gallery a belt of red colour.

" A building of oblong form is attached to the tower.

" The bearings stated are magnetic, variation $28^{\circ} 30'$ W.

" *Ballast Office, Dublin, 29th April, 1847.*

48, Windsor Street, 4th July, 1847.

CAUTION TO MARINERS.—Sir,—On my passage from Matanzas to Liverpool, in the Gulf of Florida, in the ship *Joshua Waddington*, of Liverpool, on the 13th of May, I discovered a very dangerous shoal, with only three fathoms of water on it, apparently sand and clay; when first seen, about three to four times the length of the ship from us, immediately the helm was put down, but the ship missed stays; I was obliged to wear, and in the act of wearing the ship touched aft and stirred up the sand and clay; she did not stop her way; we stood off an hour but backed again and went all clear. This place was not larger than three or four times the ship; the bottom was distinctly seen and the shock felt by all hands. I fancy this must be a detached part of Matinala shoal; no land was in sight at the time from the deck.

If you think it worth while publishing in your much esteemed publication, you are at liberty to do so.

I remain, &c.

J. WATKIN, *Commander of the said Ship.*

To the Editor.

MOULMAIN RIVER.—*Sands off Amherst.*—Considerable changes having taken place in the Sands off Amherst since the 7th of January, 1846, it is hereby notified, that the directions for entering the Moulmain River in bad weather, dated 7th of January, 1846, are cancelled.

Commanders of vessels that are obliged to run into the river for safety, must be guided by the colour of the buoys, taking care to keep those painted black on the right hand. It is not advisable that a vessel should run in beyond a mile from the reef buoy, as the inner buoys are a greater distance apart than those near the reef.

The directions for making the Port of Moulmain, and for anchoring off Green Island to wait for a pilot, may still be acted on.

(Signed,) D. TAPLEY, *Master Attendant.*

Moulmain, 30th Oct. 1846.

By order of the Officiating Superintendent of Marine.

JAS. SUTHERLAND, *Secretary.*

Fort William, 10th November, 1846.

MOOTAPILLY SHOAL.—Lieut. Fell, of the Indian Navy, employed in surveying part of the Coromandel Coast, has discovered an error in the position assigned in Horsburgh's Directory, 5th ed. vol. 1st, p. 99, to the shoalest part of the Mootapilly Bank, on which there is $2\frac{1}{2}$ fathoms. This Shoal patch is therein stated to be in lat. $15^{\circ} 25' \frac{1}{2}''$ N., and only five miles distant from the shore, whereas, according to Lieut. Fell, it is ten miles off the coast, and in lat. $15^{\circ} 23' 15''$ N. The difference so pointed out may be of importance to ships of considerable draught approaching the position of the shoal patch described.

By order of the Officiating Superintendent of Marine.

JAS. SUTHERLAND, *Secretary.*

Fort William, 31st October, 1846.

LIGHT AT CALICUT.—The following notification respecting a light at Calicut, is published for general information, as directed by Government.

By order of the Officiating Superintendent of Marine.

JAS. SUTHERLAND, *Secretary.*

Fort William, 29th March, 1847.

Calicut, 1st February, 1847.

Notice is hereby given, that a fixed single light will be exhibited at Calicut from the 15th inst., on a column of masonry, 105 feet above the level of the sea.

The column, which is white, may be seen from the deck of a ship, at a distance of about 14 or 15 miles during the day time, and the light, which is a small one, may be distinguished at a distance of about 9 or 10 miles during the night.

The Calicut Shoal bears from the light-house, N.N.E. distance about $1\frac{1}{2}$ miles.

The best anchorage for shipping is in 5 fathoms, with the light-house, bearing from E. to E.N.E.

There is $3\frac{1}{2}$ fathoms near the Western edge of the Calicut Shoal, but vessels passing the Port, either by day or night, should not come under 5 fathoms, this depth will carry them well clear of the shoal.

The light will not be exhibited from the 20th of May to the 10th of August of each year.

(Signed,) H. V. CONOLLY, *Collector.*

*Fort William, Marine Superintendent's Office,
29th March, 1847.*

(True copy.)

JAS. SUTHERLAND, *Secretary.*

BOTTLE PAPER.

8th February, 1847.

" BARK PATNA, from China towards Liverpool.

" Long, $14^{\circ} 27'$ W.—Wind N.b.E.

" Lat. $48^{\circ} 56'$ N.

HENRY PONSONBY, *Commander."*

" *To the Editor of the Nautical Magazine, London.*"

[By the above, Capt. Ponsonby will see that his bottle paper has arrived safely, we add our hopes that he has followed its example, and with our thanks to him as well as to Mr. T. Hitchens, we acknowledge the receipt of it.—*Ed. N.M.*]

LAW

Admiralty Court.—THE CHASE.—This suit was instituted by the smacks *Favorite* and *Starbuck*, to recover remuneration for salvage services rendered to this vessel, when a derelict, on 27th January last. A tender of £287. 12s. was made but rejected. The Court confirmed the tender, but without costs.

THE EDWARD BARNETT.—This was a salvage suit, instituted by the *Morgiana* to recover compensation for services rendered to the *Edward Barnett*, off Cape St. Vincent. The Court awarded £800.

THE ENDEAVOUR.—The yawls, *Welcome Home* and *Happy Return*, brought this action to obtain salvage remuneration for services rendered to the *Endeavour* on Newcome Sand. A tender of £100 was refused. The Court upheld the tender, and condemned the salvors in £15 costs, *nomine expensarum*.

Before Dr. Lushington.—THE JOHN BUDDELL.—Collision.—In this case the learned Judge was assisted by Capts. Rees and Gordon from the Trinity House, the main point at issue having reference to questions of nautical skill. The vessel proceeded against, and the *Eliza Ann*, (the owners of which are claimants,) are both colliers, and on the night of the 3rd of November were on opposite courses about four miles off Flamborough Head. The *Eliza Ann* was on the starboard tack close hauled. The *John Buddell* was on the port tack. The night was dark and the wind strong. The *John Buddell* was alleged to have been in an unmanageable state. She ran into the *Eliza Ann*, carrying away bowsprit, and doing other considerable damage.

Dr. Hoggart and Dr. Twiss were heard for the owners of the *John Buddell*; Drs. Addams and Bayford were for the owners of the *Eliza Ann*.

The Trinity Masters decided that the collision was the result of inevitable accident.

The learned Judge concurred in this opinion, and dismissed both parties, (a cross motion having been entered) without costs.

THE GUIANA SEIZURE.—This foreign ship, engaged in the slave trade, was captured off the coast of Africa about seven years ago, with slaves and a rich cargo on board, by one of the Government ships on the station. On motion the Court was asked to decree that the proceeds of the cargo in the registry, £2,511. 8s. 8d., be paid over to those interested. Her Majesty's advocate did not offer any opposition, but the consent of the Crown ought to be first had, as it was interested.

The Court directed the case to stand over.

CAUTION TO CAPTAINS.—Mr. John Brown, master of the barque *Wolga* was ordered to pay his crew £1 each, for putting them on short allowance on the homeward passage from Monte Video to Falmouth.—*Liverpool Courier*.

CAUTION.—In consequence of information we have received, we think it right to call the attention of owners and masters of ships to some of the provisions of the "Merchant Seamen's Act," recently passed; especially those clauses which prescribe a fixed supply of medicines, juices, sugar, &c., which we have reason to think are, in many instances, not complied with. The penalties incurred by non-compliance with the act, are heavy fines and detention of the ship.—*Shipping Gazette*, 20th May.

ILLUSTRATED GEOGRAPHY AND HYDROGRAPHY.

In former numbers of our Journal, we have had occasion to notice this arduous undertaking by Capt. James Mangles, R.N. The labour and pains that have been bestowed on it, reflect the highest praise on its indefatigable author.

The distinctness with which each town and village is laid down, while it strikes the enquirer with the excessive minuteness that has been employed, cannot fail to give the fullest satisfaction to his researches.

As before observed, the work is to be divided into three parts, to be published at three different and convenient periods; thus, the "Tabular Dictionary" will first appear, to be succeeded by the "Atlas," and lastly, the "Descriptive Gazetteer." Each part will be complete in itself, for though inseparably connected with the other, yet it will form a ready and universal reference; the first portion containing a key to the contents of the second, or "Atlas," wherein is laid down with the most scrupulous precision, every known place; and to perfect this gigantic undertaking, Capt. Mangles has arranged a "Descriptive Dictionary" of about 60,000 places, *aiming more at condensed information regarding many places, than tedious detail respecting a few*; thus, completing this combination of universal "Geography and Hydrography."

The price of this complete work will be £6 to Subscribers, which can be paid at the three different periods as the work appears, and we can but hope that the unceasing exertions of Capt. Mangles, may meet with the reward they so justly deserve, by knowing that his "*Trio juncta in uno*" has gone forth to the world, giving satisfaction to all who seek for knowledge in these branches of science; and while we recommend the work to that class of society, who know well how to appreciate the labours of an ingenious mind, we would strongly urge it on the notice of those, whose occupations consist in the instruction of the rising generation, as a work as simple in its principle as it is elaborate in its design.

Subscribers names will be received by John Shillinglaw, late librarian to the Geographical Society, 4, Newman Street, Oxford Street.

PROPOSED NEW ARMAMENT FOR THE ENGLISH STEAM NAVY.

Name of the Vessel.	Horse-power	Tons.	Armament, &c.
STEAM GUARD SHIPS.			
Blenhiem -	450	1747	Main deck—22 32-pounders, 42 cwt. 8 ft. Lower deck, 26 42-pdrs., 66 cwt. 9 ft. 6 inches. Quarter deck—2 56-pdrs., 87 cwt. 10 ft. on pivot, slides, and carriages; 4 10-inch guns, 85 cwt, 9 ft. 4 inches, on slides and carriages. Fore-castle—2 56-pdrs., 87 cwt. 10 ft. on pivot, slides, and carriage. Total, 56.
La Hogue -	450	1750	Same as Blenheim.
Ajax -	450	1761	Ditto.
Edinburgh -	450	1772	Ditto.
Forth -	350	1228	Main deck—20 42-pdrs., 66 cwt. 9 ft. 6 inches, on common carriages. Quarter deck—1 56-pdr., 87 cwt. 10 ft., on pivot, slides, and carriage; 2 8-inch guns, 65 cwt. 9 ft. (or 2 10-inch guns of 85 cwt. 9 ft. 4 in.) on slides and carriages. Fore-castle—1 56 pdr., 87 cwt. 10 ft. on pivot, slide, and carriage. Total, 24.

Names of the Vessels.	Horse power.	Tons.	Armament, &c.
Sea Horse - -	350	1212	Same as Forth.
Eurotas - -	350	1168	Ditto.
Horatio - -	350	1090	Ditto.
STEAM FRIGATES,			
1st Class			
Terrible - -	800	1850	Main deck—4 56-pdrs., 97 cwt. 11 ft. on pivot, slides, and carriages; 4 8-inch, 65 cwt. 9 feet. Quarter deck and Forecastle—4 56-pdrs., 97 cwt. 11 ft. on pivot, slides, and carriages; 4 10-inch, 85 cwt. 9 ft. 4 inches. Total, 16.
Retribution - -	800	1641	Quarter deck and Forecastle—2 68-pdrs., 95 cwt. 10 ft., on pivot, slides, and carriage; 4 10-in., 85 cwt. 9 ft. 4 in., on pivot, slides, and carriages. <i>Note.</i> —All steam-ships that do not carry guns on the main deck, if possible, carry 4 32-pdrs. 56 cwt., for head and stern firing.
Penelope - -	650	1616	Main deck—8 8-inch guns, 65 cwt. 9 ft., slide and carriage; 2 68-pdrs., 36 cwt. 5 ft. 4 inches, on Hardy's compressed carriages. Quarter deck and Forecastle—2 68-pdrs., 95 cwt. 10 ft. pivot, slides, and carriages; 4 8-inch guns, 65 cwt. 9 ft., on slide and carriage. Total, 16.
Amphion (screw)	300	1474	Main deck—14 32-pdrs., 56 cwt. 9 ft. 6 in. 6 8-inch, 65 cwt. 9 ft. Quarter deck and Forecastle—1 68-pdr., 90 cwt. 10 ft., on pivot, slide, and carriage; 8 32-pdrs., 25 cwt. 6 ft., compress slides; 1 68-pdr., 90 cwt. 10 ft., on pivot, slides, and carriage. Total, 30.
Arrogant do. - -	300	1826	Main deck—22 32-pdrs., 56 cwt. 9 ft. 6 in., and 6 8-inch guns, 65 cwt. 9 ft. on common carriages. Quarter deck—1 68-pdr., 90 or 95 cwt. 10 ft., on pivot, slide, and carriage; 16 32-pdrs. 32 cwt. 6 ft. 6 in., on Hardy's carriages. Forecastle—1 68-pdr., 90 cwt. 10 ft., on pivot, slide, and carriage. Total, 46.
Simoon do. - -	780	1953	Main deck—12 32-pdrs., 56 cwt. 9 ft. 6 inches, on slides and carriages. Upper deck—2 68-pdrs., 95 cwt. 10 ft., on pivot, slides, and carriages; 4 10-inch, 85 cwt. 9 ft. 4 in., on slides and carriages. Total, 18—Iron.
Termagant do. - -	620	1556	Main deck—18 32-pdrs., 56 cwt. 9 ft. 6 inches on common carriages. Upper deck—2 68-pdrs. 95 cwt. 10 ft. on pivot, slides, and carriages; 4 10-inch, 85 cwt. 9 ft. 4 inches, on slides and carriages. Total, 24—Building.
Euphrates do. - -	550	1556	Same as Termagant—building.
Dauntless do. - -	580	1453	Ditto. ditto.
Vigilant do. - -	550	1453	Ditto. ditto.
Vulcan do. - -	700	1747	Main deck—8 32-pdrs., 56 cwt. 9 ft. 6 inches, on slides and carriages. Upper deck, 2 68-pdrs., 95 cwt. 10 ft. on pivot, slides, and carriages; 4 8-inch guns, 65 cwt. 9 ft., on slides and carriages. Total, 14—Iron, building.
Fervent do. - -	...	1842	Not determined—building.
Avenger - -	650	1444	Upper deck—2 68-pdrs., 95 cwt. 10 ft. on slides and carriages to pivot; 4 10-inch guns, 85 cwt. 9 ft. 4 in., on slides and carriages. Total, 6.
Birkenhead - -	556	1400	Same as Avenger.—Iron.

Names of the Vessels.	Horse-power.	Tons.	Armament, &c.
STEAM FRIGATES,			
2nd Class.			
Megara (screw)	556	1391	Main deck—4 32-pdrs. 56 cwt. 9 ft. 6 in. on slides and carriages. Upper deck—2 68-pdrs., 95 cwt. 10 ft. on pivot, slides, and carriages; 4 8-inch guns, 65 cwt. 9 feet. on slides and carriages. Total 10—Iron, building.
Pegasus (called)	510	1391	Same as Megara—building.
Greenock screw }			
Sidon -	560	1329	Main deck—6 32-pdrs., 56 cwt. 9 ft. 6 inches, on common carriages. Upper deck—2 68-pdrs., 95 cwt. 10 ft., on pivot, slides, and carriages; 4 10-inch guns, 85 cwt. 9 ft. 4 in. on slides and carriages. Total, 12.
Odin - - -	560	1326	Same as Sidon.
Leopard - -	560	1326	Ditto.—building.
Samson - - -	450	1299	Upper deck, 2 68-pdrs., 95 cwt. 10 ft., on pivots, slides, and carriages; 4 10-inch guns, 85 cwt. 9 ft. 4 inches, on slides and carriages. Total, 6.
Centaur - - -	540	1270	Same as Samson.
Dragon - - -	560	1270	Ditto.
Gladiator - -	430	1210	Ditto.
Firebrand - -	410	1190	Ditto.
Cyclops - - -	320	1195	Ditto.
Vulture - - -	470	1191	Ditto.
STEAM SLOOPS,			
1st Class.			
Gorgon - - -	320	1112	Upper deck—1 68-pdr., 90 cwt. 1 10-inch gun, 85 cwt on pivot, slides, and carriages; 4 32-pdrs., 42 cwt. (new guns C.), on Hardy's slides and carriages. Main deck—1 32-pdr., 56 cwt.
Bulldog - - -	500	1124	Same as Gorgon.
Fury - - - -	515	1124	Ditto
Inflexible - -	378	1122	Ditto
Sphinx - - - -	500	1056	Ditto
Devastation -	400	1058	Ditto
Cormorant - -	300	1705	Ditto
Thunderbolt -	300	1055	Ditto—Since wrecked in Algoa Bay.
Virago - - - -	300	1059	Ditto
Rosamond - - -	287	1039	Ditto
Driver - - - -	280	1056	Ditto
Geyser - - - -	280	1054	Ditto
Styx - - - - -	280	1057	Ditto
Vixen - - - - -	280	1054	Ditto
Spiteful - - -	280	1054	Ditto
Vesuvius - - -	280	970	Ditto
Stromboli - - -	280	967	Ditto
Scourge - - - -	420	1124	Bomb steamer. Upper deck—2 68-pdrs., 95 cwt. 18 feet, slide and carriage, pivot; 1 13-inch mortar.
Growler - - - -	280	1059	Fitted for transport of free blacks, from America to West Indies.
STEAM SLOOPS,			
1st Class, (screw vessels.)			
Basilisk - - -	400	998	Upper deck—1 68-pdr., 95 cwt. 10 ft., 1 10-inch gun, 85 cwt. 9 ft. 4 inches, both on pivots, slides, and carriages; 6 8-inch guns, 65 cwt. 9 ft., on slides and carriages. Total, 8—building.

Names of the Vessels.	Horse-power.	Tons.	Armament, &c.
Conflict -	400	992	Same as Basilisk
Desperate -	400	992	Ditto—building.
Enchantress -	...	992	Ditto ditto
Falcon -	...	992	Ditto
Niger -	400	928	Ditto—building
Florentia -	...	998	Ditto ditto
Encounter -	360	895	Upper deck 1 68-pdr. 95 cwt. 10 ft., and 1 10-in. gun, 85 cwt. 9 ft. 4 in., both on pivots, slides, and carriages; 4 8-inch guns, 65 cwt. 9 ft., on slides and carriages. Total, 6.
Harrier -	...	825	Ditto—building.
Rattler -	200	888	1 8-inch gun, 65 cwt. 9 ft.; 1 32-pdr. 56 cwt. 9 ft. 6 in.; 4 32-pdrs., 25 cwt. 6 ft. on pivots, slides, and carriages, or otherwise, if necessary. Total, 6.
Phoenix -	260	809	Ditto
STEAM SLOOPS, 2nd Class.			
Medea -	350	835	Upper deck—2 10-inch guns, 85 cwt. 9 ft. 4 in., on pivots, slides, and carriages; 4 32-pdrs., 25 cwt. 6 ft., on Hardy's compressor carriages. Total, 6.
Salamander -	220	818	Ditto
Hydra -	220	818	Ditto
Hecate -	240	817	Ditto
Hecla -	240	817	Ditto
Hermes -	220	830	Ditto
Trident -	350	850	Ditto—Iron
Rhadamanthus -	220	813	Troop-ship, 4 32-pounders.
Dee -	200	704	Ditto 4 32-pounders.
Janus -	220	763	2 10-inch guns of 85 cwt. 9 ft. 4 in. on pivots, slides, and carriages.
STEAM SLOOPS, 3rd Class built as Packets,			
Ardent -	200	801	Upper deck—3 32-pdrs., 45 cwt. 8 ft. 6 in., on pivots, slides, and carriages. Total, 3.
Alceto -	200	830	Ditto
Polyphemus -	200	801	Ditto
Prometheus -	200	796	Ditto
Acheron -	170	722	2 32-pdrs., 56 cwt. 9 ft. 6 in. on slides and carriages to pivot; 2 32 pdrs., 25 cwt. 6 ft., on compressor slides and carriages. Total, 4.
Volcano -	140	720	Ditto
Oberon -	260	650	Ditto—Iron—building
Triton -	260	650	Ditto ditto
Antelope -	260	650	Ditto
STEAM GUN VESSELS. 1st Class.			
Grappler -	220	559	Same as Antelope.
Columbia -	100	361	Surveying-vessel ditto
Firefly -	220	550	Upper deck—1 32-pdr., 42 cwt. 8 ft., on slide and carriage to pivot; 2 32-pdr. carronades, 17 cwt. on Hardy's carriages.
Flamer -	120	496	Ditto
Blazer -	120	527	Ditto
Tartarus -	136	523	Ditto

Names of the Vessels.	Horse-power.	Tons.	Armament, &c.
Spitfire - -	140	432	1 18-pdr. of 20 cwt. 7 ft., on slides and carriage to pivot; 2 18-pdr. carronades, 10 cwt. 7 ft., on Hardy's compressor carriages. Total, 3.
Lucifer - -	180	387	Ditto
Avon - -	170	343	Ditto
Pluto - -	100	365	Ditto
Alban - -	100	405	Tender, 4 32-pounders.
Porcupine - -	132	382	Surveying-vessel, 2 6-pdrs, brass.
Shearwater - -	160	343	Ditto ditto
Kite - -	170	300	Not determined.
Comet - -	80	238	
Gleaner - -	130	351	
Lightning - -	100	296	
Meteor - -	100	296	
STEAM			
GUN VESSELS,			
2nd Class.			
Locust - -	100	284	1 18-pdr. gun of 22 cwt. 7 ft., on pivot, slides, and carriages, and 2 18-pdr. carronades, 10 cwt. 7 ft., on Hardy's carriages.
Harpy - -	200	345	Ditto Iron
Torch - -	150	345	Ditto ditto
Jackall - -	150	345	Ditto ditto
Lizard - -	150	345	Ditto ditto
Bloodhound - -	150	378	Ditto ditto
Myrmidon - -	150	370	Ditto ditto
STEAM			
GUN VESSELS,			
1st Class, (screw)			
Rifleman - -	202	483	1 68-pdr., 95 cwt. 10 ft., and 1 10-inch gun, 85 cwt. 9 ft. 4 in., on pivot, slides, and carriages, 2 32-pdrs. of 25 cwt. 6 ft. on Hardy's carriages. Total, 4.
Sharpshooter - -	202	483	Ditto—Iron.
Archer - -	202	483	Ditto—building.
Parthian - -	202	483	Ditto ditto
Sepoy - -	202	483	Ditto ditto
Cossack - -	202	483	Ditto ditto
STEAM GUN			
BOATS, (screw.)			
Teazer - -	100	301	1 8-inch gun, 65 cwt. 9 ft. on pivot, slides, and carriage; 1 brass 6-pdr. Total, 2.
Minx - -	100	301	Ditto—Iron
Boxer - -	100	301	Ditto—building
Biter - -	100	301	Ditto ditto
STEAM YACHTS.			
Victoria & Albert - -	430	1833	
Black Eagle - -	260	540	
Undine - -	100	284	Iron
Fairy (ten.) screw	120	312	Ditto
PACKETS.			
Adder - -	100	341	
Advice - -	80	197	
Asp - -	50	112	Building
Banshee - -	350	656	Ditto
Caradoc - -	300	650	Ditto
Doterel - -	130	237	
Dover - -	-	224	

Name of the Vessels.	Horse power.	Tons.	Armament, &c.
Jasper - - -	100	233	
Llewellyn - - -	350	650	
Medina - - -	300	889	
M dusa - - -	300	889	
Onyx - - -	120	300	
Otter - - -	121	237	
Pigmy - - -	80	227	
Pike - - -	50	111	Building.
Princess Alice - - -	120	270	
Prospero - - -	160	249	
St. Columbo - - -	350	650	
Sprightly - - -	100	234	
Vivid - - -	...	...	Iron.
Violet - - -	120	300	
Widgeon - - -	90	...	
Zephyr - - -	100	237	
TENDERS.			
Dasher - - -	100	260	Surveying-vessel, 2 6-pdrs., brass, 6 cwt.
Wildfire - - -	75	186	Same as Dasher.
Cuckoo - - -	100	...	
Fearless - - -	76	165	
Dwarf - - -	90	164	Iron—Screw.
Myrtle - - -	50	116	
Swallow - - -	70	133	
Monkey - - -	80	212	
STEAM TUGS.			
African - - -	90	294	2 32-pdrs., 56 cwt. 9 ft. 6 in., pivot, slides, and carriages.
Albert - - -	70	156	
Ariel - - -	70	149	
Bee - - -	20	70	
Charon - - -	60	125	
Confiance - - -	100	295	Same as African.
Echo - - -	140	294	Ditto
Rocket - - -	20	70	
Swallow - - -	70	133	
DISCOVERY SHIPS.			
Erebus - - -	20	372	
Terror - - -	20	362	
STEAM-VESSELS.			
Vivid - - -	...	...	Building.
Cherokee - - -	200	750	

Nautical Standard, 8th May, 1847.

NAVAL ENGINEERS.

THE importance of the royal steam navy to this country, and the great responsibility devolving on the engineers of that branch of Her Majesty's service, have rendered it advisable to hold out greater inducements than have hitherto been offered, to insure talented and fully competent engineers remaining in the royal navy, when great advantages and high pay were offered by private companies, and high rank and pay by foreign governments, the following rules and regulations have been made for the benefit of the engineers of the royal steam navy of Great Britain :—

“ *Admiralty, May 31; 1847.*”

“ Her Majesty having been pleased, by her order in council, of the 27th of February, to sanction a new classification for engineers in the royal navy, with certain alterations as to the appointment, rank, and pay, of these officers, I am commanded by the Lords Commissioners of the Admiralty to transmit to you the accompanying copies of the rules and regulations respecting the examination, rank, pay, and appointment of engineers under the new establishment. But, at the same time, I am to acquaint you that all engineers at present in the service are to be continued at their present scale of pay and allowances, rank, and denomination, until they shall be promoted into the new establishment, when they are to be furnished with pay documents up to that date, and their names are to be removed on the ship's books from the fourth list, ‘warrant officers,’ to the second list, ‘commission officers,’ civil branch.

“ Those engineers who draw bills for their pay as warrant officers, may include the residue of that pay in the first quarterly bill they may draw on the new establishment, great care being taken that the period of service and the amount of pay on each list be clearly distinguished on the bill; but those who have not drawn bills, having allotment in force, are to draw their quarterly bills from the date of promotion only; and the captain or commanding officer is to notify, without loss of time, by letter, to the secretary of the Admiralty, the date of promotion, in order that the allotments may be stopped.

“ By command of their Lordships,

“ H. G. WARD.”

Rules and Regulations respecting the Appointment, Rank, Examination, and Pay of Engineers, under Her Majesty's Order in Council of the 27th of February, 1847.

Appointment and Rank—Engineers in Her Majesty's naval service are to be classed in three divisions, and to be thus denominated:—

Inspectors of machinery afloat.

Chief Engineers.

Assistant-Engineers.

The two latter divisions are to be divided severally into three classes, namely:—

Chief Engineers of the first, second, and third class.

Assistant-Engineers of the first, second, and third class.

Engineers will be considered, as at present, to belong to the civil branch of the Naval Service, and they will be appointed and rank as under-mentioned:—

Inspectors of machinery afloat will be appointed by commission, and rank with, but after, Masters of the fleet.

Chief Engineers will be appointed by commission, and rank with, but after, Masters.

Assistant-Engineers will be appointed by order, and rank with, but after, Second Masters.

Examinations and Qualifications—Inspectors of machinery afloat will be appointed by their Lordships for the responsible duties of superintending generally the machinery of steam vessels attached to each station or squadron; and the candidates for such appointments must be men of experience and acknowledged ability, in whose judgment, integrity, and talent, implicit reliance can be placed.

Chief Engineer.—No person will be considered qualified to hold the commission of a Chief Engineer who is not able to keep accounts, make notes in

the log of every particular of the working of the engines and boilers, draw rough sketches of any part of the machinery with figured dimensions fit to work from, be able and willing to exert himself practically as a workman when occasion requires, either in driving the engines, or packing, repairing, or adjusting, the various working parts of the machinery, and making good the defects of boilers. He must, therefore, possess a thorough knowledge of the construction and working of marine engines and boilers in all their parts, coupled with skill and experience as a practical mechanic.

He must be so far acquainted with the elements of theoretical mechanics, as to comprehend the general principles on which the machine works. He must understand how to apply the indicator, and draw the necessary conclusions from the diagrams.

He must be acquainted with the principle of expansion, and able to prove, or at least to illustrate, the advantages to be derived from the use of expansive gear.

The particular class, to which a chief engineer will be appointed, will depend not only on the result of his examination, but on his character, services, &c.

Chief engineers will be examined at the steam department at Somerset House, by the chief engineer, and inspector of the machinery of the navy, in presence of the comptroller of steam machinery.

Assistant-Engineer.—He must be able to keep accounts, and make rough working sketches of engines and boilers.

He must produce certificates of servitude in a factory, or other proof of his acquaintance with the engine work, and of his practical abilities as a mechanic, as well as testimonials of good conduct and character.

He must understand the general principle of the engine, and be acquainted with the names of the various parts and their uses. The Second-Class Assistant-engineer, in addition to the foregoing general acquirements, must have served at sea at least one year, and produce proof of his capability to work engines, &c.

The First Class Assistant-Engineer, in addition to the foregoing general acquirements, must have served at sea at least two years as an engineer, and be competent to take charge of the engines when required to do so. He must be well acquainted with the principle on which the machine works in all its parts, be able to adjust the various working parts, and set right defects which may arise in the engines and boilers.

According to his acquirements in these points, his proficiency as a workman, and his general character and servitude, will depend his promotion to the higher rank of chief engineer. But he will not be considered eligible for promotion to this latter rank until he shall have served three years in the capacity of First Class Assistant, or as "First Class Engineer," on the old establishment.

Assistant-Engineers will be examined by the Chief Engineers and Inspectors of machinery of the Government factories, in the presence of the Superintendent of the dockyard, or such other officer as may be nominated for the purpose.

In the event, however, of the exigencies of the Service requiring the entry of engineers who may not have served at sea the full periods herein stated, but in other respects may produce proof of their qualifications, a deviation from these regulations will be allowed by the special authority, in each instance, of the Board of Admiralty, a notation to such effect being made on the passing certificates with a statement of the circumstances of the case.

All Engineers at present in the service are to be continued at their present rank and denomination until they shall have been examined and found eligible for promotion into the new establishment.

Pay—The pay of Engineers on the new establishment will be regulated under the articles in the "Queen's Regulations" and "Admiralty Instructions" applicable to commission officers, except as regards the termination of their harbour-service pay, and commencement of sea pay, which will be regulated as directed in the case of warrant officers, under chap. 10, art. 8, page 93, of the "Queen's Regulations."

Rank.	Class.	Sea pay per month.			Harbour service pay per month.		
		£	s.	d.	£	s.	d.
Inspectors of machinery afloat		25	0	0	13	15	0
Chief Engineers,	First	20	0	0	11	0	0
	Second	16	0	0	8	16	0
	Third	14	0	0	7	14	0
Assistant-Engineers,	First	12	0	0	6	12	0
	Second	9	10	0	5	4	0
	Third	8	0	0	4	4	0

N.B.—They are not to receive any additional pay for service within the tropics, nor any compensation in lieu of the allowance for the instruction of boys.

When Engineers borne for harbour-duty may have charge of steam machinery, they are to receive sea pay. When Engineers are appointed from harbour-service pay to sea-going ships, they will be entitled to receive three months' advance of pay. When Engineers are employed to execute any work not for their own ship, they will be allowed extra pay (granted under the "Queen's Regulations," chap. 10, sec. 4, art. 1, page 104,) according to their rank.

THE LILY COURTS'-MARTIAL.

A Court Martial assembled on Thursday morning, at nine o'clock, on board the *Victory*, 104, flag ship at Portsmouth, for the purpose of trying Mr. John Wilmot Young, acting master of the *Lily*, on charges preferred against him by the commander of that sloop, Charles J. F. Newton. The Court was composed of nine officers—Rear-Adm. of the White, Hyde Parker, C.B., Superintendent of the Dock Yard and acting Com.-in-Chief, president; Rear-Adm. of the Blue, Sir Charles Napier, K.C.B., &c, Capt. Pasco, of the *Victory*, Capt. Sir James Stirling, of the *Howe*, Capt. Chads, C.B., of the *Excellent*, Capt. Lushington, of the *Vengeance*, Capt. Milne, of the *St. Vincent*, Capt. the Hon. D. Pelham, of the *Ödin*, and Capt. S. C. Dacres, of the *Avenger*.

Mr. Hoskins, solicitor, assisted the prisoner.

1st Charge. That the said John Wilmot Young, acting master of the *Lily*, and serving on board her at the island of Ascension, on the 21st April, 1847, was on the evening of that day in a state of drunkenness.

2nd Charge. That he, the said John Wilmot Young, did on the 21st of April, behave towards his Commander, the said Charles J. F. Newton, with great disrespect.

3rd Charge. That he, the said John Wilmot Young, being in charge of

the watch on board the *Lily* at sea, on the 1st of June, 1847, did sleep on his watch.

Commander Newton, the prosecutor, was first sworn. He stated that the *Lily* arrived at Ascension on the evening of the 21st of April last, when he collected the quarterly returns of the *Lily*, to take to the senior officer, at the island. At half-past nine at night he sent for Mr. Young, the master, to get the quarterly track chart, which should have been made up to the 31st of March, and although Mr. Young had previously informed him, (Com. Newton,) that the chart was finished, it was found not to be so, and he told Mr. Young he would report the circumstance to the senior officer in command, to which Mr. Young replied he might do so, and take his (Mr. Young's) commission with him, Mr. Young leaving the cabin at the same time and slamming the door. The commander went on deck with the first-lieutenant, Mr. Williams, and some further altercation took place, he sent Mr. Young below under arrest. The commander's evidence went to prove that, on this occasion, Mr. Young was both drunk and disrespectful.

On the third charge, the commander gave evidence of his having come up on deck at half-past eleven, in the first watch, on the 1st of June last, the *Lily* being at sea, on her way home, under all plain sail to royals, and with the fore-topmast studding-sail set, the vessel going at the rate of nine knots through the water, when he found Mr. Young, (then officer of the watch,) fast asleep on the after grating, rolled up in a blanket.

Mr. George B. Williams, the senior-lieutenant, corroborated, in every particular, Com. Newton's evidence, both as to Mr. Young's being drunk and disrespectful on the 21st of April, and also to Mr. Young's being found asleep on his watch, on the 1st of June.

Mr. Tallis, the clerk of the ship, was present on the 21st of April, when the occurrence took place. To the best of his judgment Mr. Young was sober at the time, and that he was disrespectful to Com. Newton, but not highly so.

Mr. Devonshire, gunner of the *Lily*, proved that Mr. Young was disrespectful to his commander, but said he was sober at the time. He also proved to having roused up Mr. Young when asleep on the after grating, in his first watch, on the 1st of June.

With this closed the evidence for the prosecution, Mr. Young asked an hour to prepare his defence, which was granted, at the expiration of that time the court was re-opened, when the following defence was read by Mr. James Hoskins.

" Mr. President and gentlemen of this hon. Court,—It is with feelings of painful emotion that I stand before this hon. tribunal to answer to the charges preferred against me by the Com. of H.M. sloop in which I have had the honour to serve, a situation in which I feel I have been placed by having the misfortune to be one of the several officers belonging to that sloop, who, for some cause unexplained to ourselves, have incurred the displeasure and animosity of her commander, and certainly, no more cruel method of displaying that animosity towards myself could have been devised, than that of charging me with drunkenness, a charge which I indignantly deny, and which, I hope, I shall be able satisfactorily to disprove. I will briefly relate to the court the circumstances which occurred on the 21st of April, 1847, the day laid in the first charge, and out of which, the accusation of my being in a state of drunkenness arises. On the afternoon of that day, in the discharge of my duty as acting-master, I took H.M. sloop, *Lily*, into Ascension roads, and anchored her about half past 7 P.M.; soon after which, I went on board the *Tortoise* to see if there were any letters from England, and whilst on board that ship, I took one glass of brandy and water with the officers, which was the only stimulant I drank. After having remained on board the *Tor-*

toise little more than half an hour, I returned on board the *Lily* about half-past 8 o'clock, in one of the boats belonging to that ship, which was then alongside the *Tortoise*, in charge of Mr. Batten, now midshipman, but then naval cadet, whom I shall call before this hon. court, and who will prove that I was perfectly sober when I accompanied him back to the *Lily*.

"On getting on board that sloop, I reported myself to the first-lieutenant, although he does not recollect the circumstance, and after chatting a few minutes with the lieutenant of the *Tortoise*, who was in our gun-room, I retired to rest about 9 o'clock, it being my usual practice to do so, and even before that hour, in consequence of the arduous duties I had to discharge. About half-past 10, the commander's steward called me, and said the captain wanted me; on hearing which, I immediately arose, dressed myself, and proceeded to the captain's cabin. On my entering the cabin, Com. Newton asked me, in a very peremptory tone, if the track chart was ready. I told him it was not quite ready, as it wanted shading, but if he would allow me a little time I would complete it. The commander put himself into a great passion, and demanded to know why it was not done. I explained to him that I had the duty of lieutenant as well as master to do, but that if he would give me a little time, I would finish the chart. The commander then with an oath, and with great violence of manner, declared that he would report me. I confess that my feelings were much wounded by his overbearing manner towards me, and I left the cabin. He then sent for me again into the cabin, and said I was not sober; that I should go into my cabin under arrest for being drunk. Goaded as I then was by a sense of the injustice which I felt to have been done towards me, I regret to admit that I was tempted to say, that rather than be treated in that manner I would resign my commission. I accordingly went to my cabin, upon which the commander sent for me on the quarter-deck, and told me that in consequence of my not being in a state of sobriety I must go below and consider myself suspended from duty. Being convinced that I was most unjustly accused of an offence of which I was not guilty, having taken no stimulant during the day to occasion my being in any other state than that of perfect sobriety, I requested the officer of the watch, Mr. Devonshire, the gunner, as also Mr. Tallis, the clerk in charge, to observe my conduct, and say if I were sober. They both replied, that I was sober; I then went below and proceeded to the cabin of Lieut. Branch, and asked him if I were drunk. He replied, 'Certainly not.' Having done this, I went into the gun-room, and asked the same question of Mr. Spain, an officer who was a passenger with us, and who replied that I was sober. The gun-room steward, Isaac Hoyle, having been present in the gun-room, when I asked this question of Mr. Spain, made this observation, 'If Mr. Young is drunk, he has had nothing here to make him so, at all events.' I shall call these several persons as witnesses on my behalf, except Mr. Spain, whose attendance I am unable to procure, and Mr. Devonshire, who has already given his evidence, and I trust that their concurrent testimony will prove, to the entire satisfaction of this hon. court, that I was perfectly sober at the time mentioned in the first charge, and will convince even Com. Newton himself, that he has inflicted upon me a great injustice, by a public accusation against me, at once so serious and unfounded. The *animus* of Com. Newton towards me will, I think, be apparent by the fact, that not content with bringing against me the serious charge of drunkenness on the 21st of April last, he has multiplied into two distinct offences, the occurrences of that day, and accused me, in the second charge, of having been highly disrespectful to him as my commanding officer. I can assure this hon. court, that I am not conscious of having offered any disrespect to Com. Newton on that day, or at any other time, except what I stated as to resigning my commission, and it was very far from my intention to have done

so, and I shall exceedingly regret if any part of my conduct should have borne that construction. I know too well what is due from a subordinate to a superior officer, to have been willingly guilty of that offence; my manner may have been excited from the causes I have stated, but I shall deeply lament if it should be proved that, even under that excitement, I was betrayed into disrespectful behaviour towards my commander, except in the instant to which I have alluded, and which I exceedingly regret.

"With respect to the third charge, of having been found asleep on my watch, on the 1st day of June, 1847, I feel it necessary to offer a candid explanation to this hon. court. From the time of our sailing from Sierra Leone, I had been doing the duty of two officers, namely, lieutenant and master, having two watches of four hours each to keep during the day, having also to work up the ship, and being ordered to be called on deck whenever the hands were turned up. Oppressed by the weight of this double duty, I was worn down by fatigue, and was suffering from indisposition, having been unable for several days to take my meals. In this condition, although from mental and bodily exhaustion I was inadequate to the effort, it was my anxious desire, if possible, to discharge all the duties assigned to me. Whilst, however, I was keeping the first watch, from 8 to 12 o'clock in the evening of the 1st of June, finding great pains in my limbs, and feeling exceedingly unwell, I sat down and sent for a blanket, which I placed over my legs, and in that state was unfortunately overpowered by sleep, a circumstance which I exceedingly deplore, but which I trust will, in the minds of this hon. court, be found to possess some extenuating features. I have thus, sir and gentlemen, humbly ventured to offer a few brief remarks upon the three several charges preferred against me. I stand before you as a young officer, whose fate is in your hands. Having been engaged for several years in the merchant service as mate, I entered the Royal Navy in December, 1843, and have served successively as master's assistant, acting second master, and acting master on board H.M.S. *Satellite*, *Tortoise*, *Larne*, *Penelope*, and *Lily*. I shall lay before the court, my certificates of service, and two or three officers, with whom I have served, will do me the honour to give their testimony to my good character and conduct. I feel the serious nature of the charges against me, and am especially anxious to rescue my character, on which my future prospects in life entirely depend, from the unjust charge of drunkenness brought against me, and I trust that when the testimony of my witnesses has been given, this honourable court will, by its sentence, relieve me from the stain which has thus been attempted to be fixed upon my reputation. I hope that whatever anguish of mind I may have endured in consequence of the harsh and severe manner of Com. Newton towards me, and the unfounded accusation brought against me, I shall not be deemed guilty of having been wilfully highly disrespectful to my commanding officer, as imputed to me in the second charge; and with respect to the third charge, when the exhausted powers of nature were overtaken by slumber, and when indisposition of body rendered me incapable of performing the duties which I was zealously striving to discharge, I can only cast myself on the indulgent and merciful consideration of this most honourable court."

After the certificates mentioned above were put in from the various officers (the late Commodore Jones, Coms. Morrel, Rowley, Morris, Fiulayson, &c.) under whom the prisoner had served since his entry into the service, all of which were highly creditable to him as an officer and a gentleman. Capt. Brisbane, of the *Larne*, Lieut. Branch, and Mr. Batten, midshipman of the *Lily*, and the gun-room steward of that sloop, gave the prisoner an excellent character, and denied his inebriety.

The Court, however, after deliberation, declared the first charge not proved;

but the second and third fully proved, and adjudged the prisoner to be dismissed from Her Majesty's service.

The court was then cleared and presently re-opened, and the trial of Lieut. Branch was commenced.

Lieut. John Powell Branch, the Sec-Lieut. of the *Lily*, on the following charges preferred against him by Com. C. J. F. Newton:—

1st. That he, the said John Powell Branch, while serving on board the *Lily*, between the 9th October 1845, and the 11th May, 1846, was on several occasions highly disrespectful and insubordinate to his commander, Charles James Franclin Newton.

2nd. That, on the 15th June, 1846, he was highly disrespectful to his Com. officer, C. J. F. Newton.

The first part of the first charge had reference to what occurred upwards of eighteen months back, in Oct. 1845, and arose out of not signing an order issued by Capt. Newton respecting the uniform and clothes of the officers and crew of the brig, which order Lieut. Branch did not at first understand, but on its being explained to him, he sent for Mr. Tallis, the clerk of the *Lily*, in an hour and a-half after his first receiving it, to say he would sign it, and as soon as the order was presented to him he did so.

The next matter was relative to the first charge, which occurred when the *Lily* was at Ascension in Dec. 1845, on which occasion Com. Brisbane, of *Larne*, was ordered by Commodore Jones of *Penelope*, to go on board the *Lily* to inquire about a complaint that had been made about the sloop's bread lockers, when, as the first lieut. was absent, and the second lieut., Mr. Branch, addressing Com. Brisbane to explain the reason of his absence from the sloop, it was construed into disrespect to his Commander, Newton, and, in consequence, the circumstance was reported to Commodore Jones, and he desired Com. Brisbane to admonish Lieut. Branch for his conduct. Com. Brisbane, (now Capt.) gave evidence for the prosecution on this matter, and acknowledged that both Commodore Jones and himself considered the admonition, adequate to the offence.

Another charge was brought about the removal of some yams from the gun-room, about which Lieut. Branch, although under arrest, considered he had a right to speak, which was construed into disrespect by the Commander, and by the First Lieut. Mr. Williams. There was also another which formed part of the second charge respecting duty carried on when the hands were turned up, and Mr. Branch was doing duty on the fore-castle (which we would make nothing of). For the prosecution, Com. Newton called Captain Brisbane, on the part of the first charge, and Lieut. G. B. Williams. The evidence of the latter went to show various instances of disrespect from Lieut. Branch towards Com. Newton; and although the Commander's list of witnessses was numerous, no other person than Lieut. Williams was called for the prosecution. The court sat till six o'clock on Thursday evening, when it adjourned until nine o'clock the next morning. On Com. Newton declining to call further evidence, the court allowed Lieut. Branch until one o'clock to prepare his defence. Mr. Hoskins, (solicitor of Gosport) read the defence, which strongly commented on the harsh and oppressive conduct of Com. Newton towards the prisoner, who had been under arrest for a space between 15 and 16 months, and who had not set his foot on shore for nearly two years, and who had never in a single instance treated his commander with disrespect. Lieut. Branch next called on Lieut. F. O'Reilly, Mr. J. Stiell, surgeon, Mr. Tallis, clerk, and Mr. Van Stover, boatswain of the *Lily*. From above evidence, it appears that Lieut. Branch had always and on every occasion paid to his commander, Newton, the most perfect respect; that on the

occasion of his addressing a report to Com. Brisbane, instead of to his own commander, was an error in judgment, for which he had been admonished; and that throughout his services in the *Lily* he had committed no one instance of insubordination or disrespect; and all agreed in giving him the character of a gentleman and zealous officer. Com. Wilmot was also called, who having served with him as first lieutenant of the *Lily*, for the space of eight months, on the coast of Africa, spoke of his zeal as an officer, and of his quiet and gentlemanly conduct on all occasions. Certificates from many distinguished officers, under whom Lieut. Branch had served, were read to the court, showing that Lieut. Branch had, during his long services, acquired their respect and esteem.

Sentence—The Court, after duly weighing the evidence for the prosecution and defence, declared the charges not proved, and found them frivolous and vexatious, and, therefore, did fully acquit Lieut. John Powell Branch, and he is hereby fully acquitted accordingly.

On Admiral Hyde Parker delivering to Lieut. Branch his sword, he addressed him in these words:—"Lieut. Branch, I am most happy in returning you your sword, of which you have been deprived most unjustly for so long a time."

STATIONS OF HER MAJESTY'S SHIPS IN COMMISSION.

With the years when built, and the dates of Commission of the Officers in Command.

Acheron, st.v 2 (1831) Lt. Com. A. R. Dunlap, 1842, Woolwich—*Acorn*, 16 (1838) Com. J. E. Bingham, 1841, East Indies—*Actæon*, 26 (1831) Capt. G. Mansel 1840, Coast of Africa—*Adder*, 1 st.v Mast-Com. J. Hammond, act. Pembroke—*Advice*, 1, st.tg. Lieut. Com. C. A. Petch, 1828, Pembroke—*Æolus*, dep.sh (1825) Mast-Com. J. Thomas, 1826, part. serv—*Agincourt*, 72 (1817) Rear Ad. Sir T. J. Cochrane, cb. kt., Capt. W. J. Hope Johnstone, 1823, China—*Alarm*, 26 (1845) Capt. G. G. Loch, 1841, North America and West Indies—*Alban*, 1 st.v (1826) Mast-Com. M. Bradshaw, 1842, part. serv—*Albatross*, 16 (1841) Com. A. Farquhar, 1844, Coast of Africa—*Albion*, 90 (1842) Capt. C. H. Freemantle, 1825, Mediterranean—*Alecto*, st.v (1839) Com. V. A. Massingberd, 1842, South-east coast of America—*Alligator*, 26 (1821) hospital ship, China—*Amazon*, 42 (1821) Capt. James J. Stopford, 1841, Coast of Portugal—*America*, 50 (1809) Capt. Sir T. Maitland, cb. kt. 1837, Coast of Portugal—*Amphion*, Capt. W. J. Williams, 1841, Sheerness—*Andromache* (1832) store-sh. Mast-Com. T. Johnson, 1803, part. serv—*Andromeda* (1829) store-sh. Com. E. W. Gilbert, 1822, part. serv—*Apollo*, 8, tr-sh (1805) Com. W. Radcliffe, 1830, part. serv—*Ardent*, st.v (1841) Lt-Com. J. R. Baker, 1828, Mediterranean—*Asp*, 1 st.v Lt-Com. W. W. Oke, 1825, Portpatrick—*Astrea*, 16 st.v Mast-Com. W. Yeames, 1810, Falmouth—*Atholl*, 2 tr.sh (1820) Mast-Com. E. J. P. Pearn, 1827, part. serv—*Avenger*, st.v (1845) Capt. S. C. Dacres, 1840, Portsmouth—*Avon*, st.v (1825) Com. H. C. Otter, 1831, part. serv.

Belleisle, 72 (1819) Capt. John Kingcome, 1838, Devonport—*Belvidera*, dep-sh Capt. H. Layton, 1825, part. serv—*Birkenhead*, st.v (1845) Com. A. H. Ingram, 1841, part. serv—*Bittern* 16 (1840) Com. T. Hope, 1841, coast of Africa—*Black Eagle*, st.v (1831) Mast-Com. S. B. Cook, 1838, Woolwich *Blaxer*, 3 st.v (1834) Capt. J. Washington, 1842, part. serv—*Bloodhound*, st.v

(1845) Lt-Com. R. Phillippo (1830) east coast of Scotland—*Bonetta*, 3 (1836) Com. T. S. Brock, 1842, Mediterranean—*Bramble*, 10 (1822) Lt. C. B. Yule, 1842, tender to *Rattlesnake*, East Indies—*Brilliant*, 22 (1814) Capt. Watson, cb. 1842, Cape of Good Hope—*Bull Dog*, st.v (1845) Com. A. C. Key, 1845, coast of Portugal.

Caledonia, 120 (1808) Capt. M. H. Dixon, 1811, Devonport—*Calliope*, 26 (1837) Capt. E. Stanley, 1838, East Indies—*Calypso*, 20 (1845) Capt. H. J. Worth, 1840, Pacific—*Canopus*, 84 (1794) Capt. F. Moresby, cb. 1814, coast of Portugal—*Carysfort*, 26 (1836) Capt. G. H. Seymour, 1844, Pacific—*Castor*, 36 (1832) Capt. C. Graham, 1830, East Indies—*Cerus*, tender, Sec-Mast. T. Fogden, act. Sheerness—*Ceylon*, 2 (1810) rec.sh Rear-Adm. Sir L. Curtis, Bt, Lt. C. B. Kennedy, 1846, Flag-Lt. Mal'a—*Cherokee*, st.v Com. W. N. Fowell, 1839, Lakes of Canada—*Childers*, 16 (1827) Com. J. C. Pitman, 1842, China—*Collingwood*, 80 (1841) Rear-Adm. Sir George Seymour, gcn., Capt, R. Smart, kh. 1827, Pacific—*Columbia*, st.sur.v (1829) Capt. W. F. Owen, 1811, North America—*Columbine* 18 (1826) Com. C. C. Grey, 1842, East Indies—*Comet*, st.v (1822) Lt-Com. C. E. Johnson, 1840, part. serv—*Comus*, 18 (1828) Com. E. C. T. D'Eyncourt, 1842, south-east coast of America—*Constance*, st.v Sec-Mast. J. Jagoe, act. Devonport—*Constance*, 50 (1846) Capt. Sir B. W. Walker, 1838, Pacific—*Contest*, 12 (1846) Com. A. McMurdo, 1843, coast of Africa—*Conway*, 26, 1832, Capt. W. Kelly, 1844, on passage home from Cape—*Cormorant*, 6 st.v (1842) Com. F. P. B. Seymour, 1847, Pacific—*Crescent*, 42 rec.sh (1810) Lt-Com. T. C. Meheux, 1838, Rio de Janeiro—*Crocodile*, rec.sh (1827) Rear Ad. Sir H. Pigot, Lt-Com. S. R. Protheroe, 1826, Cork—*Cruizer*, 16 (1828) Com. E. Peirse, 1842, East Indies—*Cuckoo*, st.v Lt-Com. A. Parks, 1815, Sheerness—*Curacoa*, 24 (1809) Capt. W. Broughton, 1831, south-east coast of America.

Dædalus, 16 (1828) Capt. P. McQuhae, 1835, China—*Daring*, 12 (1844) Com. W. Peel, 1846, North America and West Indies—*Dart*, 3 Lt-Com. E. A. Glynn, 1840, coast of Africa—*Dasher*, st.v (1837) Com. W. L. Sheringham, 1843, part. serv—*Dee*, st.v 2 (1832) Mast-Com. T. Driver, 1809, part. serv—*Devastation*, st.v (1841) Com. E. Crouch, 1846, coast of Africa—*Dido*, 20 (1836) Capt. J. B. Maxwell, 1837, East Indies—*Doterel*, st.packet (1826) Mast-Com. J. Grey, act. Holyhead—*Dover*, st.packet, Lt-Com. G. Raymond, 1815, Dover—*Dragon*, st.v (1845) Capt. W. H. Hall, 1844, Woolwich.

Eagle, 50, (1804) Capt. G. B. Martin, cb. 1828, Mediterranean—*Electra*, 18 (1837) Com. F. W. P. Bouverie, 1842, act. North America and West Indies—*Endymion*, 44 (1797) Capt. G. W. C. Courtenay, 1828, North America and West Indies—*Erebus*, bomb v. (1827) Capt. Sir J. Franklin, 1822, Arctic Expedition—*Espiegle*, 12 (1844) Com. T. P. Thompson, 1841, China—*Eurydice*, 26 (1843) Capt. T. V. Anson, 1841, Cape of Good Hope—*Excellent*, (1810) Rear-Adm. Sir Hyde Parker, cb., Capt. H. D. Chads, cb. 1825, Portsmouth.

Fairy, yt (1845) tender to *Victoria and Albert*, Portsmouth—*Fantome*, 16 (1839) Com. T. P. Le Hardy, 1837, Mediterranean—*Favorite*, 18 (1829) Com. A. Murray, 1840, coast of Africa—*Ferret*, 10 (1840) Com. G. Sprigg, 1844, coast of Africa—*Firebrand*, st.v (1843) Capt. J. Hope, cb. 1838, south-east coast of America—*Firefly*, 2 st.sur.v (1832) Capt. F. W. Beechey, 1827, Irish Channel—*Fisgard*, 42 (1819) Capt. J. A. Duntze, 1829, Pacific—*Flamer*, st.v (1831) Lt-Com. G. Lavie, Mediterranean—*Flying Fish*, 12 (1844) Com. P. H. Dyke, 1844, coast of Africa—*Fox*, 42 (1829) Commodore Sir H. Blackwood, 1837, East Indies.

Garland, st.v Mast-Com. L. Smithett, act. Dover—*Geysler*, st.v (1841) Com. F. T. Brown, 1840, coast of Portugal—*Gladiator*, st.v (1790) Capt. J. Robb, 1841, coast of Portugal—*Grampus*, 50 (1784) Capt. H. B. Martin, cb. 1828,

Pacific—*Grappler*, st.v (1846) Lt. T. H. Lysaght, 1841, coast of Africa—*Grecian*, 16 (1838) Com. L. S. Tindal, 1831, south-east coast of America—*Griffon*, 6 (1832) Lt. Com. J. P. Thurburn, 1841, south-east coast of America—*Growler*, st.v (1841) Com. J. M. Potbury, 1844, coast of Africa.

Harlequin 16 (1836) Com. J. Moore, 1843, Mediterranean—*Harpy*, st.v (1845) Lt-Com. J. W. Tomlinson, 1826, south-east coast of America—*Hecla*, st.v (1839) Com. C. Starmer, 1842, Mediterranean—*Helena*, 16 (1843) Com. Sir C. Ricketts, (Capt.) Cape of Good Hope—*Herald*, 26 (1823) surv. Capt. H. Kellett, cb. 1842, Pacific—*Hermes*, 2 st.v (1835) Com. Carr, 1821, North America and West Indies—*Heroine*, 6 (1841) Com. C. Edmunds, 1841, coast of Africa—*Hibernia*, 120 (1804) Vice-Adm. Sir W. Parker, Bt. adm., Capt. P. Richards, cb. 1828, coast of Portugal—*Hound*, 10 (1846) Com. G. H. Wood, 1846, coast of Africa—*Howe*, 120 (1815) Rear-Adm. Sir C. Napier, kcb., Capt. Sir J. Stirling, 1818, Portsmouth.

Imaum, (1825) rec.sh Commodore Lambert, Jamaica—*Inflexible*, st.v (1844) Com. J. C. Hoseason, East Indies—*Iris*, 26 (1840) Capt. G. R. Mundy, 1837, China.

Jackal, st.v (1845) Lt-Com. G. Western, 1837, coast of Portugal—*Jasper*, st.v Mast-Com. E. Rose, 1823, Pembroke—*Juno*, 26 (1845) Capt. P. I. Blake, 1841, Pacific.

Keşrel, brig, Lt-Com. H. Baker, 1846, Rio Janeiro—*Kingsfisher*, 12 (1845) Com. F. W. Horton, 1846, coast of Africa—*Kite*, st.v Mast-Com. G. Filmer, 1838, Portsmouth.

Lark, 4 sur.v (1830) Lt-Com. G. B. Lawrence, 1843, North America and West Indies—*Lightning*, 2 st.v (1823) Mast-Com. Petley, 1844, Scotland—*Lily*, 16 (1837) Com. C. J. F. Newton, 1838, Portsmouth—*Lizard*, st.v Lieut-Com. W. A. R. Pearce, act. south-east coast of America—*Locust*, 3 st.v (1840) Lt-Com. E. R. Power, 1839, Mediterranean—*Lucifer*, st.sur.v (1825) Com. G. A. Fraser, 1841, Ireland.

Madagascar, 44 Mast-Com. W. J. W. Burney, 1841, part. serv—*Mariner*, 16 Com. C. M. Mathison, 1843, coast of Africa—*Mastiff*, sur.v Com. A. B. Becher, 1841, Orkney Islands—*Medea*, st.v Com. T. H. Mason, 1841, Cape of Good Hope—*Medina*, 2 st.v (1840) Mast-Com. W. Smithett, act. Liverpool—*Medusa*, 2 st.v (1839) Lt-Com. J. G. Raymond, 1828, Liverpool—*Melampus*, 42 Capt. J. N. Campbell, cb. 1827, East Indies—*Mercury*, cutter, Lt-Com. John Corbett, 1846, off Brighton—*Merlin*, 2 (1839) st.v Lt-Com. A. T. Mann, 1827, Liverpool—*Meteor*, 2 st.v (1824) Lt-Com. G. Butler, 1811, Mediterranean—*Minden*, 20 store-sh Mast. J. Mitchell, 1827, China—*Minos*, st.v Lt-Com. J. Harper, act. 1845, Lake Erie—*Modeste*, (1837) Pacific—*Mohawk*, Lt-Com. John Tyssen, 1832, Lake Huron—*Monkey*, st.v Sec-Mast. W. Bryant, Woolwich—*Mutine*, 12 Com. R. Tyron, 1841, Mediterranean—*Myrmidon*, st.v Lt-Com. E. F. Roberts, 1841, part. service.

Naiad, store-sh Mast-Com. W. L. Browne, 1831, Valparaiso—*Nautilus*, 10 (1830) Lt-Com. W. T. Rivers, 1841, coast of Portugal—*Nereus*, store-dep. Mast-Com. F. W. Bateman, 1837, Valparaiso—*Nimrod*, 82, Com. J. R. Dacres, 1841, coast of Africa.

Ocean, 80 (1805) Vice-Adm. Sur E. D. King, kcb., Capt. Sup. D. Price, 1815, Sheerness—*Odin*, st-v (1846) Capt. Hon. F. T. Belham, 1840, Portsmouth—*Onyx*, st-v (1843) Lt-Com. R. Mudge, 1815, Dover—*Otter*, st-pkt. Lt-Com. E. Wyld, 1814, Holyhead.

Pandora, 6 (1833) Lt-Com. Jas. Wood, a (1841) Pacific—*Pantaloön*, 10 (1831) Com. H. J. Douglas, 1845, act. North America and West Indies—*Penelope*, st-v (1829) Commodore Sir Charles Hotham, kcb., Capt. H. W. Giffard, 1841, coast of Africa—*Perseus*, rec.sh (1812) Lt-Com. Greet, 1840, off the Tower—*Persian*, 16 (1839) Com. H. Coryton, 1841, North America and West Indies—*Phulmel*, 6 (1812) Com. W. C. Wood, 1841, coast of

Africa—*Phœnix*, st-v (1832) Com. J. S. A. Dennis, 1840, coast of Portugal—*Pickle*, 2 (1827) Lt.-Com. H. Bernard, 1841, North America and West Indies—*Pigmy*, 1 st-pkt (1827) Lt.-Com. A. Darby, 1828, Pembroke—*Pike*, 1 st-v Lt.-Com. A. Boyter, 1815, Portpatrick—*Pilot*, 16 (1838) Com. G. K. Wilson, 1840, East Indies—*Pluto*, 2 (1831) Lt.-Com. F. Lowe, 1837, part. serv—*Poictiers*, 72 (1809) Capt.-Sup. Sir T. Bouchier, ксв. 1827, Chatham—*Polyphe-mus*, 1 st-v (1839) Com. McCleverty, 1842, coast of Portugal—*Porcupine*, st-v (1844) Capt. F. Bullock, 1838, part. serv—*President*, 50 (1830) Rear-Adm. Dacres, Capt. W. P. Stanley, 1838, Cape of Good Hope—*Princess Alice*, (1844) Lt.-Com. T. S. Scriven, 1842, Dover—*Prometheus*, st-sloop (1839) Com. J. Hay, 1841, coast of Africa—*Prospero*, 1 st-v (1829) Sec.-Mast. W. J. Rain-bolt, 1846, steam-packet, Pembroke.

Queen, 110 (1839) Adm. Sir John West, Capt. Sir Henry Leeke, кн. 1826, Devonport.

Racehorse, 18 (1830) Com. E. S. Southeby, 1841, East Indies—*Racer*, 16 (1833) Com. A. Reed, 1837, south-east coast of America—*Raleigh*, 50 (1845) Commodore Sir T. Herbert, 1822, south-east coast of America—*Ranger*, 6 (1835) Com. James Anderson, 1841, coast of Africa—*Rapid*, 10 (1840) Com. Dixon, 1841, coast of Africa—*Rattler*, 6 st-v Com. R. Moorman, 1845, part. serv—*Rattlesnake*, 2 sur-v (1822) Capt. O. Stanley, 1844, East Indies—*Recruit*, 12 (1846) Com. A. Slade, 1841, coast of Portugal—*Redwing*, st-v (1834) Com. T. Bevis, 1829, Liverpool—*Research*, tender, Mediterranean—*Resistance*, (1805) tr-sh Com. G. Lowe, 1840, part. serv—*Rhadamanthus*, 2 st (1832) Mast-Com. J. Aylen, 1812, part. serv—*Ringdove*, 16 (1833) Com. W. J. C. Clifford, 1842, China—*Rodney*, 92 (1833) Capt. E. Collier, св. 1844, Mediter-ranean—*Rolla*, 10 (1829) Com. H. M. Ellicombe, 1841, coast of Africa—*Rosamond*, st-v (1844) Com. J. Foote, 1845, Cape of Good Hope—*Royalist*, Lt.-Com. D. McD. Gordon, act. 1845, China—*Royal Sovereign*, yt. (1804) Capt. Sup. G. T. Falcon, 1813, Pembroke.

St. Vincent, 120 (1815) Capt. A. Milne, 1839, Portsmouth—*Samarang*, 22 Sec.-Mast. G. A. Stabb, Gibraltar—*Samson*, st-frigate (1844) Capt. T. Hen-derson, 1840, Pacific—*San Josef*, 110. Ordinary guard-ship, Rear-Adm. Sir J. Louis, Bt., Com. C. Hall, 1841, Devonport—*Satellite*, 18 (1826) Com. Rowley, 1842, south-east coast of America—*Scourge*, steam-sloop, (1844) Com. J. C. Caffin, 1842, Portsmouth—*Scout*, (1832) Com. W. Loring, 1841, China—*Seaflower*, 6 ct (1830) Com. H. Dumaresq, 1842, part. serv—*Sealark*, (1843) Lt.-Com. R. D. White, 1840, coast of Africa—*Seringapatam*, store-ship, Mast-Com. D. McCreight, Sheerness—*Shearwater*, 2 st.v (1835) Capt. C. G. Robin-son, coast of Scotland—*Sidon*, st-fr (1846) Capt. W. H. Henderson, 1838, coast of Portugal—*Siren*, 16 (1841) Com. Chaloner, 1845, coast of Africa—*Snake*, 16, (1832) Com. T. B. Brown, 1841, Cape of Good Hope—*Spartan*, 26 (1841) Capt. T. M. C. Symonds, 1841, Mediterranean—*Spiteful*, st-v 6 (1842) Com. Sir W. Hoste, Bt., 1843, East Indies—*Spitfire*, st-v (1845) Lt.-Com. J. A. Macdonald, 1827, Mediterranean—*Sprightly*, 1 st-pkt (1823) Mast-Com. J. P. Moon, act. Holyhead—*Spy*, 3 (1841) Lt.-Com. S. O. Woolridge, 1837, Pacific—*Stromboli*, 6 (1839) Com. T. Fisher, 1841, part. service—*Styz*, 6 st-v (1841) Com. H. Chads, 1835, coast of Africa—*Superb*, (1835) Capt. A. L. Corry, 1821, coast of Portugal.

Terrible, st-v (1845) Capt. W. Ramsay, 1843, coast of Portugal—*Terror*, 7 (1813) Capt. F. R. M. Crozier, 1841, Arctic Expedition—*Thetis*, 36 (1846) Capt. H. J. Codrington, св. 1835, coast of Portugal—*Thunder*, 6, sur-v (1828) Capt. E. Barnet, 1846, North America and West Indies—*Torch*, st-v Lt.-Com. George Morris, 1823, coast of Scotland—*Tortoise*, 12, guard-ship, Capt. F. Hutton, 1844, Ascension—*Trafalgar*, 120, (1841) Capt. J. N. Nott, 1842, coast of Portugal—*Trident*, st-v (1846) Lt.-Com. C. G. Rigge, 1838, Woolwich.

Urgent, 2 st-pkt Lt.-Com. A. S. Symes, 1816, Liverpool.

Vanguard, 80 (1836) Capt. G. W. Willes, 1814, Mediterranean—*Vengeance*, 84 (1824) Capt. S. Lushington, 1829, Portsmouth—*Vernon*, 50 (1832) Rear Adm. Inglefield, CB., Capt. J. C. Fitzgerald, 1841, East Indies—*Vestal*, 26 (1833) Capt. C. Talbot, 1830, Portsmouth—*Vesuvius*, 6 st.v (1840) Com. H. G. Austen, 1846, North America and West Indies—*Victoria and Albert*, yt. (1843) Capt. Lord A. Fitzclarence, GCH., 1821, Portsmouth—*Victory*, 104 (1765) Admiral Sir C. Ogle, Bart., Capt. J. Pasco, 1811, Portsmouth—*Vindictive*, 50 (1813) Vice-Adm. Sir F. Austen, Capt. M. Seymour, 1826, North America and West Indies—*Viper*, 6 (1831) Lt-Com. E. G. Hore, 1846, North America and West Indies—*Virago*, 6, st v (1843) Com. John Lunn, 1844, Mediterranean—*Vixen*, st.v (1840) Com. A. P. Ryder, 1846, Woolwich—*Vlaga*, 26 (1825) Mediterranean—*Volcano*, 2 st.v (1836) Lt-Com. J. H. Crang, 1840, Mediterranean—*Vulture*, st.v (1843) Capt. J. M'Dougall, b 1836, China.

Wanderer, 16 (1835) Com. F. B. Montresor, 1842, Coast of Africa—*Waterwitch*, 10 (1832) Com. T. F. Birch, 1840, coast of Africa—*Widgeon*, 1 st.v Lt-Com. T. S. Scriven, 1822, Dover—*Wildfire*, 1 st.v Sec. Mast. G. Brockman, Sheerness—*William and Mary*, yt. (1807) Capt. Sir J. Bremer, KCB., and KCH., 1814, Woolwich—*Wolfe*, 18 (1826) Com. N. Vansittart, 1847, China—*Woodlark*, tender to *Mastiff*—*Zephyr*, 1 st.v (1827) Lt-Com. C. P. Ladd, 1815, Holyhead.

NEW BOOKS

UNIVERSAL YACHT SIGNALS.—By *George Holland Ackers, Esq., of the R. Y. S., Cowes.*—Hunt, 3, New Church Street, Edgware Road.

AMONGST the national amusements of our country, that of yachting appears second to none. Our yacht navy stands unrivalled, and we have but to refer to the various clubs and the number of yachts enrolled in each for the fact, that a maritime life is almost the birthright of an Englishman.

It is obviously much to be desired that instead of each club having its own signals, a universal code should be adopted, by means of which a ready communication may be established throughout the entire yacht squadron.

The code of signals by Mr. Ackers possesses strong claims for general adoption, and has been arranged with great care. The principal portion of the work requires only the ten numeral flags for upwards of 9000 well-selected words, sentences, questions, &c., which may be increased by the use of the affirmative flag over the numerals at the main or fore-royal mast-head. At the end of the vocabulary we find, "Night Signals,"—"Distant Signals,"—"Fog Signals,"—"Semaphoric Signals and Explanations,"—"Instructions for Evolutions,"—"Remarks on the Line of Bearing,"—"Royal Naval and Yacht Club Salutes,"—and last, though not least, it concludes with "Directions for the recovery of the apparently Drowned."

These signals will very soon become familiar, for Mr. Ackers has wisely adopted the well-known flags of Capt. Marryatt, with only one in addition, which he has called the "Cypher or Church Pendant;" and although the signals of Capt. Marryatt do not indicate the same numbers or sections as the present code, yet, the full, but simple directions which Mr. Ackers has laid down, cannot fail to make them very readily understood.

We think the work reflects great credit on the author, and we heartily commend it to the attention of that interesting naval community to whom it is specially addressed.

AUTO-BIOGRAPHICAL MEMOIR OF SIR JOHN BARROW, late Secretary of the Admiralty.—MURRAY.—Third and concluding Notice.

WE now approach that period of Sir John Barrow's public life which connects so intimately with Naval affairs, and their great national consequences. To

wield the pen for forty years, in one, and that the most important branch of the public service, under *thirteen* different administrations of its concerns, is the lot of but few Secretaries, and at once implies not only remarkable aptitude for the discharge of official duties, but, what is of nearly equal consequence, a power of making that fitness *felt* and appreciated by every successive premier of the Establishment, whatever his political bias or individual feelings and abilities.

Whoever reads with an unprejudiced mind the narrative of Sir John Barrow's personal history up to that important era of his career, his appointment to the Secretaryship of the Admiralty, will be prepared to acknowledge that he purchased it by an unwearied application of all his talents to the performance of whatever task was allotted him. His details of his residence at the Cape, his just and enlightened views of the character of the Kaffir and Hottentot tribes, and above all, the sentiments of true humanity, and Statesman-like wisdom which pervade this portion of the work, command admiration and respect.

It is not, therefore, without sincere satisfaction, that the reader finds Mr. Barrow, after his return to England, installed at the Admiralty, as the recompence of unceasing assiduity in previous situations of great responsibility. Situations in which decision, principle, intelligence, tact, and industry were constantly called for, and as constantly displayed.

It is true, the narrator is an egotist, but he is so of necessity, and the egotism being thus incidental to the history, diminishes nothing of its worth, and will, to many minds, increase its interest.

The bold sketches of the individuals who successively filled the office of first Lord, and occupied other important positions at the Admiralty, will be duly appreciated by those who cannot be favoured with a near view of the originals. Such outlines may be filled up at pleasure from other records, and the colouring of character thus made out, will, in all probability, be witness of the truthfulness of these fearless delineations.

Most gratifying then must it be to the mind of Sir John Barrow, while reviewing the diversity of Political Associations and events through the ordeal of which he has been called to pass in the performance of daily and arduous duty, to be able to say, "I have reason to believe, that I have given satisfaction to all and every one of these Naval Administrations, and I am happy in the reflection, that I have experienced kindness and attention from all."

Besides biographical anecdotes of our late Sovereign of a kind to increase greatly our veneration for his memory; of "the immortal Nelson," of whom it is clear the auto-biographer entertains the true BRITISH estimate, and of other distinguished naval officers, will be found in these pages, notices of all the remarkable men of our own times. Canning receives at his hands the "*tribute due*," and a most striking and affecting account of a son of that distinguished Minister, Captain Canning, R.N., a young officer of considerable promise, who perished prematurely at Madeira, is introduced amongst the many interesting episodes which distinguish this truly remarkable work. But few of these episodes will, we think, be read with a deeper attention than the beautiful letter of Admiral Beaufort, the present hydrographer, detailing the circumstances of an accidental submersion, which had nearly proved fatal to him in Portsmouth Harbour, and with this, possessing, as it does, peculiar and highly original claims to perusal, we shall close our notice, of a work full of instruction and entertainment, for all readers.

"Copy of a letter to Dr. W. Hyde Wollaston, written, I think, in 1825, and returned to me, by his executor, in 1829." "F. B."

"DEAR DR. WOLLASTON,—The following circumstances which attended

my being drowned have been drawn up at your desire, they had not struck me as being so curious as you consider them, because, from two or three persons who, like myself, had been recovered from a similar state, I have heard a detail of their feelings, which resembled mine as nearly as was consistent with our different constitutions and dispositions.

"Many years ago, when I was a youngster on board one of His Majesty's ships in Portsmouth harbour; after sculling about in a very small boat, I was endeavouring to fasten her alongside the ship to one of the scuttle rings. In foolish eagerness, I stepped upon the gunwale, the boat of course upset, and I fell into the water, and not knowing how to swim, all my efforts to lay hold either of the boat or the floating sculls were fruitless. The transaction had not been observed by the sentinel on the gangway, and, therefore, it was not until the tide drifted me to some distance astern of the ship, that a man in the foretop saw me splashing in the water, and gave the alarm. The first Lieut. instantly and gallantly jumped overboard, the carpenter followed his example, and the gunner hastened into a boat and pulled after them.

"With the violent, but vain attempts to make myself heard, I had swallowed much water; I was soon exhausted by my struggles, and before any relief reached me, I had sank below the surface, all hope had fled, all exertion ceased, and I felt that I was drowning.

"So far, these facts were either partially remembered after my recovery, or supplied by those who had latterly witnessed the scene; for, during an interval of such agitation, a drowning person is too much occupied in catching at every passing straw, or too much absorbed by alternate hope and despair, to mark the succession of events very accurately. Not so, however, with the facts which immediately ensued, my mind had then undergone the sudden revolution, which appeared to you so remarkable, and all the circumstances of which, are now as vividly fresh in memory as if they had occurred but yesterday.

"From the moment that all exertion ceased, which I imagine was the immediate consequence of complete suffocation, a calm feeling of the most perfect tranquillity superseded the previous tumultuous sensations; it might be called apathy, certainly not resignation, for drowning no longer appeared to be an evil. I no longer thought of being rescued, nor was I in any bodily pain, on the contrary, my sensations were now of rather a pleasurable cast, partaking of that dull, but contented sort of feeling, which precedes the sleep produced by fatigue. Though the senses were thus deadened, not so the mind; its activity seemed to be invigorated in a ratio which defies all description; for thought rose after thought with a rapidity of succession, that is not only indescribable, but probably inconceivable by any one who has not himself been in a similar situation.

"The course of these thoughts, I can even now, in a great measure retrace; the event which had just taken place, the awkwardness that produced it; the bustle it must have occasioned, (for I had observed two persons jump from the chains;) the effect it would have on a most affectionate father; the manner in which he would disclose it to the rest of the family; and a thousand other circumstances minutely associated with *home*, were the first series of reflections that occurred. They took then a wider range; our last cruise; a former voyage and shipwreck; my school, the progress I had made there, and the time I had mis-spent; and even all my boyish pursuits and adventures. Thus, travelling backwards, every past incident of my life seemed to glance across my recollection in retrograde succession; not, however, in mere outline, as here stated, but the future filled up with every minute and collateral feature; in short, the whole period of my existence seemed to be placed before me in a kind of panoramic review, and each act of it seemed to be accompanied by a consciousness of right or

wrong, or by some reflection on its course or its consequences; indeed, many trifling events, which had been long forgotten, then crowded into my imagination, and with the character of recent familiarity.

"May not all this be some indication of the almost infinite power of memory, with which we may awaken in another world, and thus be compelled to contemplate our past lives? Or, might it not warrant the inference that death is only a change or modification of our existence, in which there is no real pause or interruption? But, however this may be, one circumstance was highly remarkable, that the innumerable ideas, which flashed into my mind, were all retrospective, yet I had been religiously brought up, my hopes and fears of the next world had lost nothing of their early strength, and at any period, intense interest and awful anxiety would have been excited by the mere probability that I was floating on the threshold of eternity. Yet, at that inexplicable moment, when I had a full conviction that I had already crossed that threshold, not a single thought wandered into the future. I was wrapt entirely in the past.

"The length of time that was occupied by this deluge of ideas, or rather into which they condensed, I cannot now state with precision, yet, certainly, two minutes could not have elapsed from the moment of suffocation to that of my being hauled up.

"The strength of the flood tide made it expedient to pull the boat at once to another ship, where I underwent the usual vulgar process of emptying the water, by letting my head hang downwards; then bleeding, chafing, and even administering gin; but my submersion had been really so brief, that according to the lookers on, I was very quickly restored to animation.

"My feelings, while life was returning, were the reverse of those which have been described above. One single, but confused idea, a miserable belief that I was drowning dwelt upon mind, instead of the multitude of clear and definite ideas which had recently run through it; a helpless anxiety, a kind of continuous night-mare seemed to press heavily on every sense, and to prevent the formation of any one distinct thought, and it was with difficulty that I became convinced that I was really alive. Again, instead of being free from all bodily pain, as in my drowning state, I was now tortured by pain all over me; and though I have often submitted to severe surgical discipline, yet my sufferings were at that time, far greater, at least in general distress. On one occasion I was shot in the lungs, and after lying on the deck at night for some hours, bleeding from other wounds, I at length fainted. Now, as I felt sure that the wound in the lungs was mortal, it will appear obvious that the overwhelming sensation which accompanies fainting, must have produced a perfect conviction that I was then in the act of dying. Yet, nothing in the least resembling the operations of my mind when drowning, then took place, and when I began to recover, I returned to a clear conception of my real state.

"If these *involuntary* experiments on the operation of death, afford any satisfaction or interest to you, they will not have been suffered quite in vain, by

"Yours, very truly,

"F. BEAUFORT."

It is but justice to add, that for the appearance of this singularly lucid and admirable description of an intensely-interesting psychological phenomenon, the reflecting world are indebted to the late Lady Spenser, whose letter on the subject to Sir John Barrow, forms an exceeding graceful page of these memoirs.

PROMOTIONS AND APPOINTMENTS.

The Queen has been pleased to direct letters patent to be passed under the Great Seal, constituting and appointing the Right Hon. George Earl of Auckland, GCB., Rear-Adm. J. W. D. Dundas, Rear-Adm. H. Prescott, Capt. M. F. F. Berkeley, Capt J. Hay, (commonly called Lord J. Hay), CB., and the Hon. W. F. Cowper, Her Majesty's Commissioners for executing the office of High Admiral of the United Kingdom of Great Britain and Ireland, and the dominions, islands, and territories thereunto belonging.

APPOINTMENTS.

CAPTAIN.—R. L. Warren (1829), to command *Trincomalee*.

LIEUTENANTS—J. H. Furneaux (1845) and W. Strickland (1847) to *Amphitrite*—R. A. E. Scott (1842) to *Vixen*—P. W. Darnell (1846) to *Hibernia*—J. Corbet (1846) to *Vengeance*—H. D. Selby (1847) to *Britomart*—E. R. J. Balfour (1841) to *Brilliant*—G. Napier (1842) to *Rosamond*—J. B. Kinsman (1846) and H. Griffiths (1842) to *Tortoise* and *Kingfisher* respectively—C. R. Johnson to *Fire King*—R. Wilcox (1842) to *Fury*.

MASTERS—R. Fulton to *Poitiers*—J. Huntley to *Resistance*—V. G. Roberts to *Amphitrite*—B. H. Warren to *Britomart*.

SECOND MASTERS—A. O. West to *Resistance*—Thomsett and Cave to *Styx* and *Heroine* respectively—Hains to *Kingfisher*—S. Braddon, to *Fire King*.

MIDSHIPMEN—W. B. Alexander to *Ocean*—G. V. Phillips to *Amphitrite*—J. W. Parrott to *Queen*—T. B. Lethbridge, E. E. Standish, E. H. Buck, and J. Burgess, to *Victory*—J. R. Lawrence to *St. Vincent*.

MASTERS' ASSISTANTS—W. F. Harrison to *Vixen*—C. W. Stevenson to *Ocean*—S. Creak to *Amphitrite*—W. Baitlet to *Britomart*—C. Williams to *Crane*—D. Grant to *Caledonia*—J. G. Whitehouse to *Victory*.

SURGEONS—H. Jameson to *Victory*—D. Geddes to *Caledonia*, for service in the ordinary.

ASSISTANT-SURGEONS—W. B. Dalby to *Howe*—H. Mathias to *Caledonia*—A. W. W. Babbington to *Fire King*—R. Butler to *Caledonia*—J. W. Pollard, (act.) to *Resistance*.

PAYMASTERS AND PURSERS—E. J. Bennett (act.) to *Britomart*—W. G. Parmeter to *Amphitrite*.

CLERKS—Maudy to *Ocean*—W. E. L. Vitale to *San Josef*—J. A. Hooper to *Britomart*—F. Leina and J. G. Creasy (assist.) to *Vernon*—J. Macdowall (in charge,) to *Fire King*—C. S. Saunders to *Victory*.

COAST GUARD.

APPOINTMENT—W. H. Emes, RN., to command a station.

REMOVALS—Lieut. H. R. Rave, from Durang-point to Greencastle, as Inspecting-Lieutenant.

BIRTHS, MARRIAGES AND DEATHS.

Births.

July 17, at Batheaston, the wife of Capt. S. C. S. Dacres, RN., of a son.

July 18, at Chiefswood, Roxburghshire, the wife of Capt. Robert Craigie, of a daughter.

Marriage.

July 20, at Lambeth, P. P. Cotter, Esq., RN., to Harriett Emma, second daughter of the late J. Haile, Esq., RN.,

Death.

Died on the 18th June, aged 82 years at Queen's Mill House, Portsmouth. Retired Commander Henry Cradock, many years Assistant to the Master-Attendant of that dockyard. He was an officer of the *Queen Charlotte* in Howe's action of the 1st June, 1794. Master of the *Glory* (Adm. Stirling's flag-ship, second in command,) in Sir Robert Calder's action, 1805, and was actively employed for a period of upwards 37 years; was considered a most valuable war-officer, and died universally respected.

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stubbington, near Fareham,
Hants.— June, 1847.

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22																																
23	10	10	5	10	10	15	15	10	15	15	16	13	14	12	10	11	12	10	10	10	10	10	10									
24	5	10	13	14	13	12	10	11	12	13	14	15	11	10	10	10	10	10	10	10	10	10	10									
25																																
26																																

27	...	...	...	12	10	15	15	15	15	15	15	12	11	...	...	...	...	...	...
28	...	...	...	10	12	15	14	13	13	12	10	12	15	11	...	...	...	...	...
29	...	...	...	...	...	...	...	...	...	...	...	...	15	15	12	12	...	...	...
30	...	10	10	10	5	5	5	11	5	11	11	11	11	11	...	...	...	...	...

TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—JUNE, 1847.

A.M.	1	2	3	4	5	6	7	8	9	10	11	12			
10	.0172	.0258	.0430	.0344	.	.	.	.	.	.	.	.
13	.	.	.	.0086	.	.	.	.	.	.	.	.
14	.	.0258	.0172	.	.	.0258	.0258	.	.0172	.0516	.	.			
17	.0172	.0172	.0172	.0086	.	.	.	.	.	.	.	.
Total	.0344	.0688	.0774	.0516	.	.0258	.0258	.	.0172	.0516	.	.			
P.M.	12	14	17	18	Total	12	14	17	18	Total	12	14	17	18	Total
12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
14	.	.	.	.	.	.0344	.0344	.0344	.0172	.0172	.0086	.	.	.	.0172
17	.	.	.	.	.	.	.	.0258	.0258	.0258	.0172	.0258	.0344	.	.
18	.	.0258	.0258	.0344	.0344	.0258	.0258	.	.	.	.	.	.	.	.
Total	.	.0258	.0258	.0344	.0688	.0602	.086	.0430	.0430	.0258	.0258	.0516	.	.	.

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—JUNE, 1847.

Miles	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	5	1258	.	.	.	.	.	126	.	1859	675	.	795	98	77	113
No. of hours } pr hr. }	1	.86	.	.	.	.	.	7	.	158	30	.	53	11	6	17
Velo. } pr hr. }	5	.14	.	.	.	.	.	18	.	11	22	.	15	9	13	7
Amt. } Rain, }	.	.172	.	.	.	.	.	.	.	.335	.215	.	.	.	.	.

Considering from 6 A.M to 6 P.M. day, and from 6 P.M. to 6 A.M. night we have 3378 miles the amount of wind during the day, and 1454 during the night, .275 inches the amount of rain during the day, and .525 during the night. Total wind 4832 miles, rain .8 inches. The greatest amount of rain was from S.S.W. The number of hours during which the rain fell was 30; and the number of hours during which the amount of wind is recorded is 369 during 351 hours it was calm.

NEW CHARTS.

(Published by the Admiralty, in July, 1847, and sold by R. B. Bate, 21, Poultry.)

- IRISH CHANNEL. Sounded by Capt. F. W. Beechey, F.R.S., 1846. Price 2s.
- SARAWAK RIVER, BORNEO. Mr. Hiram Williams, Mineral Surveyor, 1846. Price 2s. 6d.
- ANDROS ISLAND, Archipelago. Capt. Graves, 1844. Price 2s.
- VERA CRUZ. Mexico, corrected to 1841. Price 2s.

Commander Sheringham has discovered a small, rocky shoal hitherto unknown, with only 23ft. water on it at low water, it is situated abreast of Hampstead Point in the Solent, and lies in Mid-channel with 9 fathoms water all round it.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory,
From the 21st of June, to the 20th of July, 1847.

Month Day.	Week Day	Barometer In Inches and Decimals.		Fahrenheit Thermometer In the Shade.				Wind.				Weather.	
		9 A.M.	3 P. M.	9 A.	3 P.	Min	Max	Quarter.		Strength.		A.M.	P.M.
								A.M.	P.M.	A.M.	P.M.		
21	M.	In Dec	In Dec	60	63	56	64	SW	SW	3	6	o	qbc
22	Tu.	29 83	29 79	59	63	52	64	SW	SW	3	5	bc	qbc p 3
23	W.	29 72	29 67	58	57	46	60	SW	W	4	3	bc	betp 3
24	Th.	29 67	29 62	56	65	50	66	SW	SW	5	5	qbc p 3	qbc
25	F.	29 61	29 72	60	66	53	67	SW	SW	6	5	qop 2	qbc p 3
26	S.	29 70	30 15	59	66	51	68	W	W	3	3	o	bc
27	Su.	30 05	30 29	64	70	53	71	W	W	3	4	o	bc
28	M.	30 27	30 31	65	71	58	74	N	NE	2	3	o	bc
29	Tu.	30 33	30 30	64	67	56	72	NE	NE	5	5	qbc	qo
30	W.	30 30	30 29	60	69	53	70	NE	NE	5	5	qbc	qbc
1	Th.	30 31	30 33	59	68	53	69	N	N	5	5	qo	qbc
2	F.	30 30	30 28	55	61	52	62	NE	NE	4	4	og	o
3	S.	30 18	30 14	57	67	51	71	NE	NE	3	3	o	bc
4	Su.	30 05	30 00	62	74	54	75	SE	S	2	2	bc	bc
5	M.	29 99	29 97	64	77	52	79	SW	N	2	2	bm	bcm
6	Tu.	29 95	29 93	67	81	56	82	SW	SW	1	1	b	bcl
7	W.	29 92	29 90	72	70	60	72	S	SW	2	4	otlr 1	o
8	Th.	29 92	29 93	61	71	57	72	SW	SW	2	3	betp 3	bc
9	F.	30 06	30 14	65	73	57	74	SW	SW	3	5	bc	qbc
10	S.	30 21	30 22	67	79	60	80	SW	SW	1	3	o	bc
11	Su.	30 32	30 22	73	77	62	78	SW	SW	1	2	o	bc
12	M.	30 25	30 25	74	86	65	87	SW	SW	1	2	bc	bc
13	Tu.	30 28	30 26	74	84	63	85	NW	W	2	2	bcm	bcm
14	W.	30 26	30 22	73	83	62	84	NW	N	1	1	bm	bcm
15	Th.	30 18	30 16	71	79	63	81	NE	NE	2	4	bcm	bm
16	F.	30 10	30 05	68	80	61	81	NE	NE	2	3	bcm	bm
17	S.	30 04	30 01	61	67	58	70	NE	NE	4	4	otlr 1 2	o
18	Su.	30 10	30 12	63	69	58	70	NE	E	2	3	o	o
19	M.	30 00	29 98	63	65	51	69	E	NE	2	2	o	op 3
20	Tu.	29 92	29 96	65	71	56	73	N	N	2	2	o	bcm

June 1847.—Mean height of the Barometer = 29.968 inches; Mean temperature = 58.4 degrees; depth of rain fallen = 1.44 inches.

TO OUR CORRESPONDENTS.

"A Constant Reader" at Portsmouth will perceive that we have complied with his request, it is, however, contrary to our general practice.

"A Subscriber" at Upper Walmer has, we trust, seen that his communication could not appear in these pages; we directed him to the proper quarter.

We have received Mr. Fiddington's Letters.

Hunt, Printer, 3, New Church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

SEPTEMBER, 1847.

SAMANA, ST. DOMINGO. *Communicated by Lieut. J. Evans, R.N.*

ON approaching the land Cape Samana appears high and of a dark hue, bluff at the extreme, with a "shoulder" which sufficiently distinguishes it from Cape Cabron, the extremity of which is "up and down" or vertical. On a nearer approach, at a bearing of S.b.E., the profile of the former cape makes in *steps*, and ends at the base in a short point; a small reef runs from it.

The entrance to the sound lies between Point Graplin on the star-board, and Banister Cays on the port.

In running in from the offing, as there is no danger lying in a ship's course for three miles and a-half, a vessel may keep in mid-channel, steering about W.b.N. $\frac{1}{2}$ N., until hauling up to take her berth where most convenient. The soundings are very irregular, varying from 13 to 10, 7, 13, 5, 14, and no bottom at times, with the hand lead.

The anchorages are various:—1st. Within Point Graplin. 2nd. In Cocoa-nut Bay, (under the second point,) which is preferable to the first. 3rd. Abreast of the eastern entrance to the Carenage. 4th. Off Point Vaisseau. 5th. In the outer anchorage of Samana harbour; and, lastly, in the inner harbour, or Port Napoleon.

Men-of-war which design to make but a short stay to remedy defects, &c., prefer Cocoa-nut bay in 11 fathoms. Others which come in for water and other supplies, anchor off Point Vaisseau in from 13 to 16 fathoms water. In one of our visits we anchored the frigate in the outer harbour opposite to the opening between Corsair Cay and the Carenage isle, (which is high,) in 6 fathoms. The bottom appears generally to be hard, and hempen cables are liable to be chafed.

NO. 9.—VOL. XVI.

3 M

The Carenage surlying between Point Campedry and Point Vaisseau, is visible, and may therefore be avoided. South of its west end, about the fourth of a mile, there is a rocky patch, which lies in the fair way; the least water we found on it was 20 feet. The channel between it and the reef is clear.

Off Point Gorda there is a shoal which, in going into the harbour, must be avoided; also another stretching transversely across the harbour from the head on which the fort is erected, and which forms it into two anchorages.

The watering rivulet is situated in Claræ Bay, at the first plantation eastward of the port; it may be known by several ranges of cocoa-nut trees close to the sea margin; the water is good.

On the northern extremity of the hook of the Great Bank, are four or five cays, which collectively have obtained from the English, the name of "Banister." The largest is called Forban Isle; on this several of our crew were buried.

The harbour of Samana, (otherwise "Port Napoleon,") is small but snug; it is formed by a sweep in the land, and three islets which are connected by a shoal stretching east and west; the shoal from the port, spoken of above, divides it into two anchorages.

The sea breeze generally sets in strong, and with it an easterly swell; ships, therefore, ride with a good scope of cable. The land winds are irregular, and the tidal current often sets out strong; we found, however, on one occasion, whilst at the entrance of the sound, with light easterly winds and intervening calms, in the early morn, that the ship drifted or drew inwards, contrary to expectation. It is probable that whilst the sea breeze lasts, there is an indraught from the water of the swell being compressed between the land and the bank to the southward, and the superfluous water finds an outlet along the southern shore of the St. Domingo side of the sound, where a *cul de sac* is narrow; this operation takes place beneath the surface, as I experienced at *Matanzas* in Cuba.

The head of the sound is shoaly; the *Pert* and *Reindeer* brigs of war, however, ran a long way up after some French privateers when we took Samana, under the orders of Sir C. Dashwood. On inquiring of some of the town's people, I was assured that there existed a channel for small vessels between Samana and the main land; but this is disputed by Mr. Walton, (in his Spanish colonies,) who says, "Samana is a Peninsula, and not an entirely detached island, as has generally been thought; a low swamp filled with reeds, with fordable intervenes, but might be easily cut. The isthmus, according to the survey of a late engineer, is wider than generally laid down, and in this instance, as well as in many others, Lopez's late map, with which we are not generally acquainted, is more correct than that of Solano."

Pascal bank lies N. $\frac{1}{4}$ E. from the largest of Banister Cays; within that, or to the W. $\frac{1}{4}$ N., is Morris bank, with 30 feet of water; and north of that is the Carenage shoal. These notices are imperfect. I think, however, that Morris bank is the one on which we found 20 feet to 36 feet as stated before. I have no recollection of the other.

We found provisions, fruits, and vegetables not scarce when sought for; but the place was in a sad disorganized state during our visits. Wood is abundant, the water good, and not difficult to be obtained. The plantations, for want of care, were in a ruinous condition; under favourable circumstances, however, they must be productive, for the soil is rich and the vegetation must luxuriant. Things have, by this time, no doubt, greatly improved, as far as the necessaries of life are concerned. I should, therefore, consider that it would prove an excellent temporary place of refreshment for steamers employed in the conveyance of the mails.

With respect to its approach there can be no objection—there is nothing to apprehend, nothing to retard an ingress at all seasons; and the egress is as free from objection. Fogs are sometimes prevalent, but are confined principally to the night and early morn; a sailing vessel may beat out without fear, taking care not to stretch southerly of the Great Bank until well without. From the sudden transit of a hurricane, there would indeed be no retreat, but the same applies equally to other parts throughout the Caribbean Seas.

The point of intercourse with the main land is the town of Savanamar, on the southern shore of the sound, by means of boats, the distance being a few miles only. From that town there are roads to the city of San Domingo, and, probably, to other places. The climate is represented as salubrious, on account of the position of the land with reference to the tropic wind, which, indeed, here blows free and fresh enough to dissipate malaria. The sun, however, has his wonted power here in spite of the day gale, and showers are frequent, yet we heard of no account of sickness on shore. The case, however, was very different on board our ship, as we lost several of the men from yellow fever; but it had been prevalent some time before, so that with deaths and invalidings, we nearly changed the whole crew. The rapidity with which the men sunk under this fatal disease was surprising and appalling; a man in perfect apparent health in the morning would be buried on the cay by noon.

A remarkable instance occurred with a marine, who, at daylight, when the boats were departing on the watering service, handed a pair of trousers to the cockswain of one of the boats, requesting him to dip them in the river and lay them to bleach on the grass. At noon the cockswain returned just as a boat was departing to the cay in order to land the corpses of the poor fellows who had died during his absence. On entering the ship, he hove the trousers to a messmate of the man who had given them to him, requesting that they might be given to the owner. "Why, he's just gone over the side," was the reply—the man was dead. My belief is, however, that this does not prove Samana to be a particularly unhealthy place; there is no exemption from this fever in any spot, the same rapidity of change I have witnessed at other places. As far as the climate, abstractedly considered, is concerned, I believe it to be much the same throughout the whole range of islands. That the atmosphere of the town may be improved, I think there is no doubt. There

is a good deal of wood which it would be well to thin, to admit a freer circulation, and swamps which ought to be drained.

In the hands of Englishmen it would probably be soon made a delightful place; and it is not improbable that the Haytians might be induced to dispose of the Peninsula (or island) to our Government, if the possession of it were desired, and, perhaps, not on unreasonable terms. It would be a great acquisition as a steam-packet station.

THE HYPOTHESIS OF THE EARTH'S ROTARY MOTION CREATING THE TRADE WIND, EQUATORIAL CURRENT, &c., CONSIDERED.

(Concluded from page 398.)

The Direction of the Trade Wind.—The same observations, already offered, hold good with respect to the rotary motion of the earth, causing merely the direction of the wind.

What, it may be asked, is to prevent the power assumed as the regulator of the direction of the wind, from being the cause of the wind also?

We cannot see why, or how the movement and the direction can be separated in this instance; for, if the earth's rotary motion gives direction to the wind, it must also impart to it, at the same time, an impulse, as it must be the velocity of that motion, if it has influence at all, that acts upon the air, and not the direction of the motion alone; these cannot, we conceive, act separately.

Besides, if the opinion were correct, there ought not to be any variation in the direction of the wind, as there is no deviation, or fluctuation of the earth's rotary motion, and, as it is powerful, it must surpass (if acting) other principles in nature, which are considered as affecting the air. We presume that the conical action of the rotary motion can have no such effect as the advocates contemplate.

The reasons which have been philosophically assigned for the origin and directions of the trade winds, are so conclusive with respect to the cause and governing power, the sun, that we are really at a loss to divine why writers should persist in urging an additional power to assist in accounting for phenomena, which need not any further aid for the establishment of their cause on a sufficient and sure basis.

If the two motions, (*i.e.* the motion of the polar airs, and that of the earth's rotation,) were equal to the production of a third; the S.W. direction of the N.E. trade, and the N.W. course of the S.E. trade, to those points these winds ought to be confined, without the slightest variation, for, as there is none in the rotary motion of the earth, and its velocity round its axis is more powerful than any external cause producing effects on the atmosphere, there could be none in the winds which are said to be governed in their oblique direction by it.

The remarkable variations which take place in the Great Ocean and the Atlantic within the tropics are sufficient, we should imagine, to have prevented any person from adopting so insufficient an hypothesis; and the reasoning that would point to the small difference in the earth's velocity within ten degrees of the equator as the cause of the calms often experienced there, appears to us inconclusive and unnecessary for the solution of such a phenomenon. It is inconclusive for this reason:—that, as the motion of the diurnal rotation is greatest then, and uniform, the current of air induced ought also to be greatest and without diminution in its velocity. And it is unnecessary because the phenomenon can be accounted for satisfactorily from the action of the winds themselves, combined with the maximum heat of the region, and the great activity of rarefaction; it is a well-established fact which every intelligent seaman knows, that, opposite, and oblique currents of air, of equal, or nearly equal temperature and strength, create, intermediately, light baffling airs, cats-paws, and calms. This may be verified anywhere, especially in the entrance to the English Channel; and has been noticed within the Atlantic circle, and, therefore, nearly independent of the earth's motion. We may take the following explanation as a clearer view of the case:—as the N.E. and S.E. *trades* pursue their oblique directions toward the divisional line of the earth, they gradually increase in temperature, because they are approaching the region of greatest uniform heat, which will have the effect of lessening, at every degree of their course, their action, until arrived within the circle of maximum warmth, their power of fluency becomes, then, inert, and at length, (according to the season,) altogether *effete* for certain periods. The surplus, however, from the north and south being still in advance, this want of action will be regulated by the seasonal variations of the temperature of the streams, consequent on the sun's place; the westerly winds and lateral gales, require investigation, little, if any thing, is known of their probable causes; those experienced in the vicinity of Africa and South America, are probably occasioned by purely local causes; one is a sort of constant sea breeze, and the other a monsoon.

The variations which take place in the inclination or oblique direction of the trade winds clearly demonstrate that, the sun is the regulator as well as the cause of these winds; whereas, if the rotary motion gave the oblique directions to the polar currents, there could be no variations.

To peruse the subject further appears unnecessary, the foregoing hypothesis may be likened to those flashes of poetic imagery that attract and dazzle for a moment, but which have no reality in nature. What analogy is there that we may look to by way of confirmation of these opinions? There is none within the sphere of our experience that can approach near to that assumed, nor indeed, in our comprehension, except the similar revolution of the other planets, and this can afford no clue to the solution, however, it may confirm, (if it needed it,) the axial rotation.

The Equatorial Current.—We may apply much the same reasoning

to the hypothesis of the rotation causing the equatorial current that has been given with reference to the trade wind.

It should follow, if the opinion were true, that the whole body of water within the equatorial regions, moves in the opposite direction of the earth's motion; and one of the consequences should be, a surf of extraordinary force upon the eastern shores of the Torrid Zone, for, as the water of the ocean lies upon the bed of the earth, if influenced by the motion, it would acquire an equal degree of velocity with the latter, a pretty current truly, 15 miles a minute! at which rate, a vessel departing from the Cape Verd Islands, unaided by the wind, would reach the Caribbees in about two hours and a half. What does experience prove? That the equatorial current has a mean rate of $2\frac{1}{2}$ miles an hour, or 54 miles in 24 hours; and the westerly *set* of the waters between the 10th and 20th degrees north, in the Atlantic is, from 4 to 18 miles in the 24 hours; so that the daily rate of the former is, no more than the 400th part of the earth's velocity round its axis!

We do not altogether see the help which suppositions of things as *they are not*, can give to argument, it is, however, *fashionable* in describing physical effects; thus, it is supposed that if no land intervened, the equatorial current would continue to flow round and round the globe; there can be no certainty of this being at all likely from aught we know of the influential causes of permanent currents, or of these even, which are occasional only. Confining our present remark to the Atlantic, we find the direction assigned to the equatorial current to be from the Cape of Good Hope to the satient angle of America abreast of the Island of Trinidad, or about N.W. transversely of the earth's rotary motion: if we admit its continuity from the Indian Ocean, and that it was deflected by the eastern coast of South Africa, and so thrown considerably to the southward without the influence of the trade wind, ought it not, by the rotary theory, to acquire a direction contrary to the one it pursues, as it had dropped into the temperate Zone, where the winds and waters are said to acquire a direction from west to east? Further, it is well known to navigators who cross the *line*, that very great irregularities in the direction of the currents take place, not only near the land, where they may be influenced by tidal operation, but in the mid ocean in the Atlantic and Pacific. In the former, the general current has been known to cease or be suspended for a certain time; (which would not possibly happen if dependent on the rotary impulse;) and at other times, a current has been found running in a directly contrary direction to that followed by the equatorial stream, and in its place, and a tendency of the whole mass of waters from 5° N. to 12° S., and again, from 2° N. to 7° S., to move with it! And between 10° N. and 21° N., a N.E. current of $21\frac{1}{2}$ miles in 24 hours has been experienced in July. It must be borne in mind likewise that, the Atlantic equatorial current has a course obliquely to the earth's rotation; now, if that had any influence upon the moving water, would it not, powerful as it is, turn its course directly to the west when advanced within Capricorn? The answer seems to us decisive of the question, as there is no external power equal to the mitigation of the effect that should follow if acted.

In the Pacific, currents from the west towards the east have been experienced by navigators; and the natives of the Carolinas have been drifted in their canoes 1500 miles to the eastward, against the ford and direction of the trade wind.* Yet the steady determined whirl of the globe went on without the slightest deviation or relaxation all the while, proving demonstratively that the ocean is uninfluenced by the earth's rotation, and that, be the cause what it may, of the equatorial current, that cause is not sufficiently powerful, (which it assuredly would be if it were the rotary motion of the earth,) and immutable to continue the stream unceasingly and in one unvaried direction, but that it is counteracted occasionally by some unknown cause, which, for the time it acts, is greatly superior to the former.

We may presume to think that there are not any persons who consider the orbital motion of the earth as at all influencing the atmosphere on the ocean; because such influence would be impossible. The meteor-like *dash* of the globe, at the rate of 19 miles in a second of time through an *unresisting medium*† must be, and is, we are both physically and intellectually assured, smooth, easy, and unfelt; if it were otherwise, we should have a wind that would brush the surface of the earth as bare as a well-swept court, and there would be billows literally and truly, running *mountains* high, that would cover all but the most elevated peaks of the highest islands of the Torrid Zone, creating a magnificent surf on the table land of Mexico, and other inter-tropical parts exposed to its impetuous course!

To conclude, Mr. Editor, we may say in our own language of the ocean, figuratively applied, that, when in chase of an object, the old tar likes to carry a press of sail, but this eagerness is tempered with caution, lest he should carry away his spars; we have "cracked on" in our present pursuit of truth, but whether we have obtained her as a prize or not, must rest for the adjudication of your readers. The decision after all is of no great importance, seeing that the trade wind and the equinoctial current will flow on whether we choose to consider their cause as proceeding from the sun, the axial rotation, or any other unknown or unsought action; but we have one satisfaction at any rate, which, to the mind that prefers serenity to strife, is an incomparable advantage—in carrying on these discussions, we are happily exempt from those unaimable and unbecoming passions which are engendered, and but too often displayed, in the advocacy and resistance of political questions.

A BLUE JACKET.

CHINA.—*An Ordinance for the prevention of Piracy.*

IN order to prevent acts of piracy on the coast of China, His Excellency

* The reader may consult Capt. Kotzebue's *First Voyage of Discovery* on this point.

† Comparatively with our *atmosphere*.

the Governor of Hongkong and its Dependencies has thought proper to issue the following Ordinance, viz:—

Whereas it has become necessary to adopt further steps for the prevention of Piracies; and whereas His Excellency the Chinese Imperial Commissioner has disavowed the right of private vessels belonging to the people of his Nation to carry fire-arms, and at the same time assented to any necessary measures on the part of the Government of Hongkong for putting down piracy:—

I. Be it therefore enacted and ordained, That from and after the passing of this Ordinance, the Captain or Officers of every British ship of war or other vessel duly authorized by the Government of this Colony, or every Magistrate or officer of Police, Harbour-Master or officer of the Harbour-Master's Department, are hereby authorized to board and enter every Chinese Vessel or Junk reasonably suspected of being a piratical vessel, and search the same.

II. And be it further enacted and ordained, That the possession, by any Chinese Vessel whatever, (not being a Government Vessel) of the offensive weapons, called fire-pots, or stink-pots, shall be held and deemed to be proof of a piratical Vessel.

III. And be it further enacted and ordained, That the possession by any Chinese Vessel whatever (not being a Government Vessel) of any offensive arms or weapons shall be held and deemed to be a proof of a piratical Vessel, and such Vessel with its contents shall be forfeited; unless it shall appear that such Chinese Vessel was duly licensed to carry such arms or weapons as hereinafter mentioned.

IV. And be it further enacted and ordained, That all trading Junks, Lorchas, large Fast-boats, and other Vessels belonging to Hongkong, being duly registered and licensed by the Registrar-General, under and by virtue of the provisions of Ordinance No. 7 of 1846, intituled "An Ordinance to repeal Ordinance No. 18 of 1844, and to establish a more effectual Registry of the Chinese Inhabitants, and a census of the population of the Island of Hongkong," shall and may carry the same flag as other British Merchant Vessels, with the numbers of their Register inscribed in large white figures in the centre of the said flag, so as to be distinguishable at a distance. And the Registrar-General is hereby authorized to grant such flag as aforesaid: And every trading Junk, Lorcha, large Fast-boat, or other vessel belonging as aforesaid which shall use the aforesaid flag without being duly registered and licensed as aforesaid, shall be forfeited, and the owner or master of such trading Junk, Lorcha, or large Fast-boat, or other vessel shall in addition pay a fine not exceeding Fifty Dollars.

V. And be it further enacted and ordained, That all trading Junks, Lorchas, large Fast-boats, and other Vessels belonging to Hongkong not duly registered and licensed to carry arms, and all trading Junks, Lorchas, large Fast-boats, and other Vessels duly registered and licensed as before mentioned, having on board other arms, or a larger quantity of arms, than are specified in their Register shall be held and deemed to be the property of pirates, and as such liable to forfeiture by process in the Court of Vice-Admiralty. And the master or owner of every trading

Junk, Lorch, or large Fast-boat, or other Vessel already registered and licensed as aforesaid, (or hereafter to be registered and licensed,) is hereby required to cause the number, quality, and description of the arms on board of such trading Junk, Lorch, large Fast-boat, or other Vessel, to be inserted or endorsed on the Register of the said Vessel, and every such master or owner is hereby required to produce such Register to the Registrar-General, (who shall make such insertions or endorsement as aforesaid,) under a penalty not exceeding Fifty Dollars.

VI. And be it further enacted and ordained, That the Master or Commander of all trading Junks, Lorchs, large Fast-boats, and other Vessels duly registered and licensed as before mentioned, and trading or plying between Hongkong and any part of the dominions of the Emperor of China, shall whenever they shall come in sight of any European Ship or other vessel, hoist their flag in some conspicuous part of their said Vessel under a penalty not exceeding Fifty Dollars. And the Masters and officers of every British or other Vessel who shall meet or fall in with any trading Junk, Lorch, large Fast-boat, or other Vessel bearing or carrying the flag aforesaid, is or are hereby required to note the number of the said flag in their Log Book, and also the time and place when and where such meeting shall occur, and to report the same to the Harbour-Master or Consul at the port of their destination.

VII. And be it further enacted and ordained, That the penalties mentioned in the three preceding sections of this Ordinance shall be recoverable in the same manner as penalties are made recoverable by Ordinance No. 10 of 1844, entitled "An Ordinance to regulate summary proceedings before Justices of the Peace, and to protect Justices in the execution of their duty.

J. F. DAVIS, *Governor, &c.*

11th March, 1847.

Passed the Legislative Council of Hongkong, this 25th day of March, 1847.
L. D'ALMADA E CASTRO, *Clerk of the Councils.*

MIRAGE AT RAMSGATE.

THIS phenomenon having been described in several papers, it might be useful to repeat a caution to mariners in your widely circulated periodical, as to the deceptive character of mirage with regard to compass bearings. On a former occasion, I sent you a paper on this subject, detailing the false appearance of Calais light, as seen from our locality, and the consequent accident to an American ship, the captain of which had taken his departure from the Scheldt with a fair wind, and ran on shore upon the Goodwin Sands, in consequence of false bearings and distances taken during the mirage.

Although this phenomenon is not of unfrequent occurrence, yet it is a subject that requires serious attention, since the most important results may arise, and which cannot be too cautiously guarded against by

seamen. On one occasion, I was myself surprised by the appearance of the north-east end of the Island of St. Michael's, in the Azores, an hour before sunset, in a bearing, and at an apparent distance, which entirely *falsified my reckoning*. The mirage was as beautifully distinct as the island itself could possibly have been, but as it faded away in the twilight, and I had excellent observations to correct my dead reckoning, I fortunately paid no attention to it, and on closing in with the island, results proved that the mirage would have *led me aside* from a correct course, and my reckoning was accurately carried out.

In the late instance on the 6th July, the shifting character of this phenomenon, both by refraction and reflexion, was of a very marked kind. During the heat of the day, objects were occasionally elongated horizontally till the reflected separated itself to a considerable distance from the reality, exhibiting two towns, castles, light-houses, or vessels. A light shifting breeze would then alter the column of air, and the objects uniting became *vertically elongated*, and agreeably with the illustration (in the *London News*, July 17th.) taken by a clever artist, towered up in the atmosphere above their natural position till they also became inverted, double, and in one beautiful instance the refracted, seated as it were on the top of the reflected ship. All this is deeply interesting to philosophic investigation; these mirrors produced by heat and rarefaction may amuse, but proceed we to things of greater consequence, their influences on the navigation of dangerous straits and channels. The evening of the 6th of July became dead calm at sunset, and as the chalk cliffs faded from our view, the light at Cape Grinez appeared with such brilliancy, that each returning flash, as it revolved, appeared to be much nearer to Ramsgate, in apparent distance, than the South Sand Head light of the Goodwin Sand, which is close upon our coast; but, as seen from the pier, Cape Grinez, was evidently to the eastward of its true bearings, in consequence of the nature of the mirage. While Capt. Montague Stopford, R.N., and myself were contemplating the appearance of the light generally, an alarm was given, and our attention was called to what the boatmen considered signal lights upon the Goodwin North Sand Head. The luggers were leaving the harbour to go to the assistance of this ship or vessel, when the said light became *perfectly distinct*, and proved to be, (as in a former instance communicated to you,) *Calais Light*, and in a position $2\frac{3}{4}$ points from its real bearing. It was this deviation which induced the men to man the luggers, for, said they, "*It can't be Calais Light, Calais Light*, when seen, is close to the Gule Light in a line, but this is right over the middle of the North Sand." They were right, it was not Calais Light, but its reflected image, this they did not understand till they put to sea, and satisfied themselves of the fact, and that there was no prize for them, but a blank on the Goodwin Sand. How deceptive then is mirage, and it was noticed by the ancients.

The pilot of Ulysses was deceived, as Ithaca melted into mist, and our mariners in this age of nautical skill, are too apt too disregard the ever varying aspect of sea and sky. In such a navigation as ours among varying winds and tides, and ceaseless atmospheric changes, what a safe-

guard is the lead. The cross bearings of the two French lights would have placed Ramsgate miles out of its proper position; the effect would have been similar to a ship at sea, but the more approximate lights of the Goodwin would have shown the deception, and one east of the lead would have *proved the fact*. Let this urge the young mariner to emulate the watchful conduct of his predecessors who, in the olden time, were said—

“ By practised skill, o'er bar and shelf to sound,
With dext'rous arm, sagacious of the ground.”

K. B. MARTIN, *Harbour-Master,
Royal Harbour, Ramsgate.*

N.B.—It is a curious fact connected with the general state of the atmosphere this season, that we have been visited by swarms of the small red beetle (ladybug) descending like a shower from a low misty cloud. These are welcome to the hop and potato plantations, as they devour the *aphides* of every kind with great avidity. I have counted as many as 12 to 20 in the nucleus of the leaves of the Jerusalem artichoke for days together, without any trace of injury to the plant; and I suspect from the manner in which they cluster around the egg of the caterpillar on brocoli and cabbage plants, they feed upon them; also, before they depart, which is early in the autumn.

[We return our best thanks to Capt. Martin for the above very interesting narrative, which he so readily sent at our special request. Such phenomena are indeed worthy graver attention than is generally bestowed upon them; we are too apt to indulge in the consideration that these facts are more subjects which gratify the senses, than those which require a searching investigation into their cause, and the effects likely to be produced by the delusion. With his concluding remarks we cordially agree; too much dependence is frequently placed on the sight, and too little on the lead, which latter, especially round our own coast, is the surer guide.—ED. N.M.]

REMARKS ON THE COAST OF NEW ZEALAND.—By Com. C. O. Hayes,
of H.M.S. Driver.

Jan. 18th. Moderate southerly wind. Saw the Three Kings at daylight, (islands off the north cape of New Zealand,) and the land of New Zealand shortly after. This evening hove to, twenty miles to the northward of the Bay of Islands to allow for southerly current.

19th. At midnight found ourselves at the entrance of the Bay of Islands and stood in. On the right hand is a small conspicuous pointed rock, called the Nine Pin, about 40 feet high, and on the left is Cape Brett, easily known, as close off which, is a perforated rock, the hole large enough for boats to pass through. Anchored of Kororarika, a few straggling houses on a shingle beach; as we only stayed here an hour I cannot say much about it. Excellent water is easily procured at several

places close to; also spars of any size for any purpose; stock scarce and dear. As the *Driver* is the first steamer that has ever visited New Zealand, one would have supposed that the astonishment of the natives would have been great; not so, they seemed to take it as a matter of course, and looked upon her as if they had been accustomed to steamers all their lives. Several came on board, among them Tomiti Walker, the chief of our native allies; he was dressed in naval captain's uniform; a thick set, heavy looking man, of about fifty years of age, and about five feet seven inches in height, much tattooed, and dark even for a New Zealander. Many of the natives measured the length and breadth of the *Driver*, by laying down on the deck, with their legs and arms stretched out, and so on from one end to the other. Walker said our guns were very large, but of no use here, as we could not take them into the bush. Left Kororarika at 9 A.M., with a light N.W. wind, which in the evening changed to a fresh breeze from southward. There is a rock two miles off the south-east end of Shoaroantoa Island, another three-quarters of a mile south-east side of Tiri-tiri Statanghi, and another two miles S.b.W. $\frac{1}{2}$ W. of Tiki-tiki Island, at the entrance of the Bay of Islands.

20th. Fine, with moderate southerly wind. Anchored at Auckland at 8 A.M. The harbour-master came out and took us in; though there is no danger to fear, there is a rock nearly in mid-channel just before you come to the North Head, with a red buoy on it, after passing which, you may haul up for the North Head, passing it at a moderate distance to avoid a reef which lies at the South Head, with a buoy and beacon on it. About half a mile inside the North Head, a sand spit runs out with a white buoy on it, after which the lead will give warning of danger till you arrive at the anchorage abreast the town. The land all about Auckland is clear and tolerably level; and, at a little distance, looking like fine grass downs; but it is covered with fern and tea trees; the latter a small shrub which attains the height of about 14 feet, and very good for making brooms, but of no use for any other purpose, it being too small for firewood.

The landing places here are detestable, even at half ebb you are obliged to be carried in and out of the boat, and, at low water boats cannot even approach the thing, called a jetty, within a hundred yards, owing to the soft mud which surrounds Auckland, and which runs out very flat and far. On my calling at the Governor's (Grey) I found him in the midst of a deputation of chiefs, come to ask his advice in a dispute they had had with another tribe about some land. There were about a dozen of them dressed as European gentlemen, and a quieter, better behaved set of men I never saw, they never interrupted each other or any one else in their replies and answers, they certainly made a most favourable impression on me. Three of the missionaries attended as interpreters.

21st. As this is the Antipodes of England, of course, this is the height of summer, (January); they say it is a very wet one, and very unusual weather for the season. Showery, with fresh southerly breezes. Walked into Auckland, first impressions are everything they say, and it certainly struck me as being the most wretched and dirty place I had seen for

some time; to be sure it is just beginning to recover from the late panic. There are only two streets, one running down rather a steep little hill, and the other at the foot running off to the left at right angles: a number of small lanes turn off from these two streets. There are a number of tolerable little shops, and a vast number of pot shops. I never saw so many drunken men collected together, at one time, in such a small place before. As I previously said, the street is built on rather a steep hill, Heaven knows who planned or executed it; but to obviate this, they have cut away from the top and added to the bottom of the hill, so the houses at the top require ladders to reach them, and those at or near the bottom are half buried in the earth.

Almost any thing relating to shipping may be got in small quantities; and stock, vegetables, and meat plentiful for the force now here; pork may be had in any quantity; spars excellent for masts and yards, and plank in any quantity. There is also a rope walk, and a moderate supply of rope made from the flax of the country, but it is inferior to Manila rope, and sells at 42s. per cwt. At the rope establishment the jack is not sufficiently powerful to lay up any thing beyond a 4-inch rope. The watering place is at the landing place, at the stone jetty, and runs in a small stream about as thick as your thumb; but owing to the mud there is great difficulty in getting it, and then not beyond 5 tons a day, it is clear and good, but keeps indifferently.

23rd. The climate is certainly delightful, and every thing reminds one of Old England more than any thing we have seen since leaving home. Auckland flagstaff, lat. $36^{\circ} 51' 30''$ S., and long. $174^{\circ} 45'$ E. Tides moderate, rise and fall about 9 feet.

24th. Went to church, which is an unsightly red building near the Governor's house, and on the hill just above the landing place; it is now more like a fortification than a church, as the windows are all barricaded and loopholed all round. A proclamation came out last night prohibiting the importation of arms and gunpowder.

26th. The present prices of ship stores are, rope, 60s. per cwt., canvas, 45s. per bolt, shovels, 5s. each, and small spars, from 6 to 8 inches, 6d. per foot. Calms generally prevail during the night at Auckland.

27th. Very light and warm, with light variable winds all day; there is no amusement of any kind beyond walking about. Game is not to be found in the island, (North Island,) but in the Middle Island there are plenty of quails; the land in the neighbourhood is fine, and about Epsom, which is about three miles off, there are some patches of excellent ground chiefly in cultivation by market gardeners. By what I can see and hear, farming is not a very lucrative trade, and I think, unless a man has money he does not know what to do with, he should not attempt anything of the kind.

31st. Fine with moderate S.W. wind. The *Calliope* sailed to-day for Wai-heki, about twelve miles from this, to water; it being such a long process here; there is an excellent stream there, and water is easily procured.

Feb. 3rd. Squally from S.W. all day. Went to see the bishop's new college, building at the Tamaki, about seven miles from Auckland; it is

of Gothic architecture, and built of lava, of which there is vast quantities in the neighbourhood of Mount Eden close to it, sufficient for all building purposes for centuries to come. There were about 150 people collected together at a ball given by the inhabitants this evening, but not above thirty ladies, and they, with few exceptions, exceedingly plain.

5th. Fine, with moderate westerly breeze. Left Auckland at 11 A.M. for Wellington, under sail, being ordered not to use steam. At 8 o'clock, passed between Passage Island and Cape Colville; the former is a small conical rock or island, steep close to; there is a reef of rocks runs off the latter. This evening damp and foggy.

6th. Fine, with fresh S.W. breeze. Saw White Island at 11 o'clock very indistinctly; this island is in perpetual ignition and smoke always coming from it. No current.

8th. Very fine, with moderate S.E. wind, which, towards evening, veered to the northward, and fell nearly calm. No current.

11th. Fine, with light breeze from E. and N.E. Saw Cape Palliser at 5h. bearing W. $\frac{1}{2}$ S. 30'. Several albatross about the ship.

12th. Nearly calm all day. Steamed into Wellington, took a pilot on board outside the heads. Strangers coming to Wellington in blowing weather, would be rather alarmed at the entrance, as the rocks appear to run right across, but there is no danger near these rocks except what shows above water, taking care to leave them all on the left hand side as you go in. The entrance to Wellington cannot be mistaken, if the weather is clear enough to see the land about the heads, as there is a small beacon on each of them; in thick weather ships should keep the starboard shore on board in running in about one and a-half miles off, so as not to pass the entrance to Wellington, some ships have done so, and have been wrecked in Lyall's Bay, two or three miles to the left of the entrance. Having entered the harbour, avoid Jerningham Point, which is the Point immediately opposite Col. Wakefield's house, as there is a rock off it with 6 feet water on it. Difference of time, by chronometer, from Auckland here, 8s.4.

Wellington harbour is very commodious, and perfectly land-locked, and I think superior in every way to Auckland. The land all round is exceedingly hilly and covered with wood, except at the entrance of the harbour, which is clear and barren. The hills rise very abruptly and very close together, leaving deep ravines between them. The town is straggling along the beach a mile in extent, the houses small and built chiefly of wood; there are several small streams of excellent water, which is much more easily procured than at Auckland. Spars of any size may be cut at the Hutt at the head of the harbour, or at Karori, about three miles off; there are also many excellent and handsome woods adapted for almost any purpose, and also the *mai*, which is excellent for boat building; the cowrie trees are not found except in the northern part of the northern island of New Zealand. The meat, stock, and almost every thing eatable, is far superior to that of Auckland, the people having cows here direct from England; they are also very superior to those of Auckland. There is also a very nice little society, and no bickering or jealousies amongst them; they are particularly hospitable and kind,

and I have not spent such a pleasant time since leaving England as I have here. Ships' stores of almost any kind may be had in small quantities. Wellington contains about 4000 inhabitants.

13th. Fine, with N.W. wind till noon, when it rained all the rest of the day. Every thing appears very dear, meat being 8d. per lb., and fowls 4s. a couple.

14th. Fine, with light variable winds. They sport a small theatre here, but, like the one at Auckland, a very disreputable affair.

15th. Fine, with light southerly wind. There is little or no tide in the harbour, the rise and fall about 5 feet.

16th. Went to Karori, a small village, about $3\frac{1}{2}$ miles off; there is a good, but very narrow road leading to it, which winds round hills covered with a dense forest. At Karori the ground is more level, the village consists of about 40 houses from fifty to two or three hundred yards apart, all a thick forest, except immediately round the houses. Here lives the Judge (Chapman), he is cultivating some land, heaven knows what for: the land, about here is cleared by contract, and ploughed ready for wheat at £5 per acre, leaving the stumps of the trees. At Auckland the same is done for £1. 10s.,—the land here is decidedly better.

17th. There is a very good inn, very superior to that of Auckland.

19th. Heavy squalls all day from N.W., a ball this evening 146 people there, about one-third of them ladies; very far superior to the Auckland ones.

20th. Rain from noon till 3 P.M., when the wind suddenly shifted from N.W. to S.E., and cleared up.

22nd. Fine and squally from N.W., went to Church, a wooden building capable of holding about 300 people.

24th. Went to the Hutt; the land about it is level and very good; but the greater part covered with timber; however, they have cleared some few hundred acres, which are in cultivation. A small river winds through the level land and overflows its banks two or three times a year, from the melting of the snow on the Tanorua Mountains, and from heavy rains; but cause little or no damage.

27th. Fine and squally from N.W., this evening blowing hard in squalls, all the ships let go a second anchor; the *Castor* parted her cables; it blew in heavy squalls till daylight.

28th. At daylight the wind suddenly shifted to the southward with rain, and fell light, then fine all day.

March 1st. Families were coming in from the Hutt to-day, alarmed at the threatening appearance of the natives.

3rd. Fine and squally from N.W., anchored off the beach at the Hutt in $3\frac{1}{2}$ fathoms, thunder and lightning to the S.E.

4th. Blowing hard with strong squalls from southward, let go a second anchor, and struck masts and yards: showery. It is worthy of remark that there are no wild beasts or venomous reptiles of any kind in New Zealand. People say, that since the natives have adopted the European mode of living or dress, numbers of them have been carried off by consumption, some think it is caused by the blanket in which they wrap themselves, and get in a great heat and then catch cold, but I hardly

think this can be the cause, the blanket being generally considered a very healthy article of dress.

5th. Showery with strong breeze and hard squalls from the southward. The climate here is delightful, something like England, only much milder; and if I were inclined to leave England and settle anywhere, New Zealand should be the place.

7th. Cloudy; the wind came round to N.W, this morning. New Zealand abounds in fish, some of excellent quality, the *kani* and *arbucka* are first-rate fish, the former like a very luscious mullet, and the latter in shape and taste much like a first rate cod, they weigh from 50 to 100 pounds, and I should think a good thing might be made by salting them down, as they are very numerous in the season.

8th. Very rainy; returned to Wellington; fresh S.E. winds all the forenoon, fine and calm in the afternoon.

9th. Fine; with moderate S.E. winds, left Wellington at 5 this evening and anchored at Porirua, about 45 miles from Wellington by sea, a little after 10. Porirua is only 15 miles from Wellington by land, from Wellington to Porirua there are no dangers except a rock off Karori near the Seal rock, the bearings are, from the Seal rock S.E.b.S., by compass, $\frac{3}{4}$ mile, and about $2\frac{1}{2}$ miles from the main land, and is nearly level with the water at spring tides; and a reef off Sinclair Head. Passed inside Mana Island, and anchored about half a mile outside two reefs, which always show above water at the entrance of Porirua. A ledge of rocks extend from Mana to the main; the least water we had was $3\frac{1}{2}$ fathoms in crossing. The harbour is formed by a branch of the sea like a T, at the entrance is a bar with 10 feet which breaks with N.W. winds, and is then dangerous for boats to cross. The coast between this and Wellington is very steep. At Porirua lives a farmer by the name of Cooper, who supplies the troops, &c., with meat and vegetables, I believe he merely grazes cattle. Ships may ride safely here with all winds that have no westing in them, but under Mana which is close to they may lay, with any wind.

10th. Left this at 4 P.M. for Wellington, and anchored here at 10 to-night.

14th. Went out five miles on the Porirua road to where Mr. Clifford has a little farm. The whole way was thickly wooded except for about a hundred acres near Mr. Clifford's, which is being brought into cultivation. It is worthy of remark, that nearly all married people have children in New Zealand, even those who have had none for years, have them when they come here. This is the climate of all climates, neither too hot in summer, or too cold in winter, and sickness unknown.

15th. Fine, and squally from N.W. The winds in Cook Straits are almost always N.W. or S.E., but, in Wellington harbour, I have found them more generally N.b.W. and S.b.E., changed by the land.

23rd. Blowing hard all day, with heavy squalls from N.b.W.

April 4th. A man named Gillespie and his son were murdered at the Hutt last night by the natives.

6th. Hard rain, with squalls from the S.E. till 6 A.M. Left Wellington at 7h. 30m., and anchored at Porirua shortly after noon. Rauperaha,

one of the principal chiefs in New Zealand, came on board to see the governor. He is a shrewd, cunning-looking man, of about seventy years of age. He was dressed in trousers and shirt, with a New Zealand coat thrown over the shoulder, and two feathers stuck in his hair, standing out at right angles to his face, these feathers were about 10 inches long, nearly black, tipped with white. Dressed in this manner Rauperaha looks a fine commanding figure, but when I saw him afterwards in European clothes, he looked a wretched decrepid old man of about 5 feet 6 inches in height; the native dress is far more becoming than the European. Rauperaha is the only native I have seen with defective teeth, all others being regular, very white, sound and strong, by this one would suppose that smoking tobacco has no effect on them, as they smoke continually. The mat which is nearly square is always worn with the open part to the right arm, leaving that member free for attack or defence. Fell nearly calm at noon, and this evening a light breeze from N.W. with drizzle, and then veered to S.E.

7th. Variable winds, and in the afternoon, fresh breeze at N.W., left Porirua at 3 P.M., and anchored at Wellington at 7h. 30m., strong squalls from N.W.

8th. It rained all the early part of the morning heavily with N.W. wind.

9th. Fine with fresh N.W. wind; the tide between Cape Terawite and Sinclair Head runs very rapid, particularly off the former Cape, with a race-like heavy breakers. The tide in Cook Straits runs north five hours, and south seven hours; high-water at fall and change eight o'clock. Fortunately, in these straits, there are very few dangers that do not shew; the gales always blow between S. and E., and N. and W. They blow with great violence from both these quarters, but from N.W. they generally come on gradually; they shift suddenly from that quarter to the S.E., and blow with great violence, with exceeding heavy squalls. When these gales come on, it is advisable to seek an anchorage (of which there are plenty,) without delay.

At 6 A.M., left Wellington and anchored off Mana Island at 2 P.M., in 6 fathoms, half a mile from the beach, to assist in landing troops at Porirua. Mana is about two and a half miles long, and one broad, flat-topped and very steep to seaward, but sloping down to the beach at the anchorage on the land side. Here there is a small whaling station and a few sheep kept; little or nothing else is to be had here. Ships may ride here in safety in all winds; 2 fathoms will be found ten yards from the beach; the reef between it and the main land is marked by kelp, about 3 fathoms on it. Ships should on no account remain at Porirua with the wind N.W., as great difficulty has been experienced in getting out against the wind and heavy sea that sets in. Raughihaeta used to live on Mana Island, but, since the massacre at Wirau, he has been afraid to venture there; his house still remains, the front adorned with indelicate carvings. It is built like all other native houses, only on a larger scale than most I have seen, oblong, with sloping roof, which is about 15 feet high, the sides about 4 feet, the door about 3 feet square,

and the only place to admit light; a sliding partition on one side near the door, and smaller than it.

10th and 11th. Blowing strong from N.W. Too much sea to cross the bar. Fresh N.W. wind and squalls.

12th. Blowing a gale, with heavy squalls from N.W., Ship rolling a good deal, and *Calliope* driving. It rained in torrents this evening, with heavy thunder and lightning. The barometer fell rapidly just before to 29° 15', and then began to rise, and the wind moderated, and the thunder and lightning ceased.

13th. Fine, with fresh breezes and squalls from N.W. Too much swell to cross the bar.

14th. Cloudy and rainy at times, with fresh breezes and squalls from N.W. Foggy and heavy dew to-night.

15th. Wind shifted this morning to N.N.E., moderate and squally. Shifted farther in to be ready to land troops. The bar still breaking; this afternoon fine.

16th. Moderate breeze from N.N.E. and N., with drizzle. Landed the troops, the sea on the bar having subsided. This bar is about three-quarters of a mile inside the two reefs, that show above water. The tide here is moderate.

17th. Very fine, with moderate and light N.W. wind. Left this at noon, and anchored at Wellington at 5 P.M.

20th. Cloudy and foggy; blowing a gale from N.W. and N.N.W., with heavy squalls. This evening, and during the night, it blew very hard with exceeding heavy squalls with light drizzle. So heavy were the squalls, that a seven oared whale-boat, waiting for me under the lee of the land, was blown right over, and the boat-keeper nearly drowned. Ship with masts and yards all down, and two anchors ahead.

21st. Fine, and, towards noon, the wind died away, and the evening nearly calm.

22nd. Heard of the wreck of the *Osprey* at Hokianga. Left Wellington at 2 P.M. for Auckland. Moderate breeze from N.W. this evening.

24th. Thick and rainy; wind moderate from S. and S.S.E. It blew hard for three hours this afternoon. Saw East Cape distant two miles. This evening, the wind came round to the eastward and moderated. Current east eight miles.

25th. Thick rainy weather all day, with moderate and light breezes from N.E. to N. At 6 A.M., saw an island which we took to be Cuvier Island, but, shortly after, saw other islands in the fog, so hove to. Found that we were amongst the Mercury Islands, having been set thirty miles S.E. since yesterday. On passing the northernmost Hansez Island, observed the sea breaking on a rock about two miles to the N.E. of the island, and which is not laid down in the charts. Dark, thick, rainy weather to-night.

26th. Thick rainy weather; N.W. wind. It cleared up about ten o'clock, and became very fine, very warm, and little or no wind. Anchored at Auckland at 4 P.M. Heavy dew to-night.

27th. Light variable winds and rain at times. Two vessels have ar-

rived since we left with coals for us from Sydney; they have placed them high up above the landing place, so there will be no possibility of getting them off without carts, and as it is so shallow and muddy, the boats must go in at high water, remain there a tide, be loaded, and come off again the next high water, and trust to its not blowing to get off to the ship. As a steamer is to be stationed here, the sooner they send out a hulk with coals the better. The best plan would be to load one of our old frigates with coals and just rig her for the trip, and lay her up for a coal depot. It would be an immense saving, her old sails, stores, &c., would answer for the men-of-war on the station. The coals now brought from Sydney are very indifferent, and cost the Government, when shipped on board the steamer for use, about 35s. per ton, and two tons of English coal are equal to three of Sydney, making the Sydney coals very dear indeed. This Auckland is a wretched hole, nothing but mud, Jews, and rogues, but still, for agricultural purposes, I think it better than Wellington, as the land is clear and much more level, but beyond Wellington, and outside Cook Straits, I believe the land to be level and rich.

30th. Some rain early this morning, fine afterwards, with strong squalls from N.W. A vessel came in from Sidney with cattle. The beef here sells at from 5d. to 6d. per lb., and mutton from 7d. to 8d., but very inferior to that of Wellington.

May 2nd. Very thick fog this morning, with very fine day, and moderate breeze from N.W., and heavy rain in the evening. Tolerable horses may be had both here and at Wellington, brought from Sydney, hired at about 10s. per day.

15th. Left Auckland at 3h. 30m.

16th. Anchored at Kororarika at noon. This place is merely frequented by whalers, the small shops on the beach supplying their wants, which are not many, as they generally come out well found in everything. The country round about the Bay of Islands is hilly, woody, and bad, and there is very little in cultivation. This place is only kept in existence by the ships that arrive here, the native trade being small. Very heavy dew.

17th. Fine and calm. Went over to look at a place called Victoria, about three miles from Kororarika, belonging to a Mr. Busby, which was at one time to have been the site of a town, but was abandoned, the anchorage being open to the east wind. A small river, (the Wai-tangi,) runs into the sea here, but the water is brackish as high as the fall, about four or five miles up. There appears to be no desirable land at Victoria.

18th. Fine, with northerly wind. Went with the Governor in our boats up the Kiri-kiri river. At the north entrance of the bay, about seven miles from Kororarika, the river appeared about three miles broad, and navigable for ships some miles up. Called on the chief Wykato, who has been in England, and has now the gun given to him by the Prince Regent. He said the kindness he received when in England prevented him from joining in the late disturbances, although he was bound to assist his relative, Heki. There is a small village here of about a

dozen huts, dirty and wretched. It is a native custom that when visits are made among chiefs, some presents are made; this was done to-day by Wykato's wife throwing down by the side of the Governor a meri, which is about the most valuable thing they have; but if we had not had a person there acquainted with their customs, we should never have discovered it was intended as a gift; however, the governor returned it to her again. These meris are made of a green stone, only found in the middle island, and were used in warfare before the introduction of iron or fire-arms, and are used by the chiefs now. They are about $\frac{3}{4}$ of an inch thick in the centre, the edges very sharp, about 5 inches broad, and about 18 inches long, and a desperate weapon in close quarters. These natives of the Kiri-kiri seemed to have nothing beyond a few pigs, ducks, and fowls, and their whole appearance bespoke indolence and poverty. At 7h. this evening it came on to rain in torrents, with thunder and lightning until 10h., when it cleared up.

- 19th. Showery, with light variable airs. Several chiefs came on board to see the Governor, among them Kawiti, a very nice, amiable-looking, old fellow, rather stout, and about 65 years of age. It is worthy of remark, that all the natives who assisted us during the war, were either Roman Catholics or Wesleyans, and those against us, Protestants and heathens.

20th. Showery and calm.—There is a boat-builder's a little beyond Kororarika, at a place called Waipo, where small boats may be built at from 16s. to 20s. a foot. Went to Russell, a place about two miles up the Kawa-kawa river. Here was to have been the site of another town, which idea was also abandoned after having purchased the land of Mr. Clendon for £15,000. There is nothing here now but an old wooden store, uninhabited; and, I believe, this is all the Government have got for their £15,000. The land all about here is very hilly and woody, quite unfit for purposes of cultivation, though the climate is very good, much milder than at Auckland, and very little wind. The Kawa-kawa is a fine river, and navigable for ships of large burden some few miles up, with numerous small bays and coves. Boats can land with ease at any part of the Bay of Islands, or at any of the rivers running into it.

21st. Thick fog till 11 o'clock, when it began to rain, with light north wind, and continued so till sunset, when it rained in torrents, with strong squalls; the same all night. The *Castor* drove considerably.

23rd. Showery, with fresh breeze from N.W., which fell light in the afternoon. Went with the Governor about twelve miles up the Kawa-kawa to see Pamara's pal. About four miles up, the river became very shallow and narrow, and, being low water, we had great difficulty in getting up in our boat. We found Pamara at home, and about twenty other men and women belonging to his tribe; they were good-looking, fine made people, the cleanest and best proportioned people I have seen in New Zealand. Pamara himself is a fine, tall young man of about 35 years of age, finely tattooed both on face and posteriors, the latter being the distinguishing mark of a chief, and which we could distinctly see through the graceful folds of the native mat. As it had been very wet, he lent us horses to ride out and see his plantation, but the ground was

so bad, and the horses so frisky, we were glad to dismount. He has several hundred acres of most excellent level ground, planted with potatoes and Indian corn, but these late wars have brought them nearly to a state of starvation, and the Governor intends sending them provisions. They say the New Zealanders were cannibals, but I think it was dire necessity that made them eat human flesh, as, before the arrival of Capt. Cook, they had nothing whatever but sweet potatoes and shell fish, such as limpits, cockles, &c.; a few birds they may have been enabled to snare also, but as these are scarce and small here, they must have been obtained with very great difficulty. I think it likely they were obliged to eat human flesh, in some instances, to support nature. Cook introduced pigs, poultry, corn, and potatoes, on which they now live, the potatoes being considered their chief support; and the failure of the crop of potatoes to the New Zealanders would be as fatal as it would be to the Irishman. Peaches, pears, and apples, are to be met with in most parts of New Zealand, and also, in some parts, grapes, gooseberries, and cherries. The Cape gooseberry is plentiful. The pork of New Zealand is perhaps not so gross as in other parts, as it is difficult to tell whether you are eating mutton, veal, or pork.

25th. Very showery, with strong breeze from westward, and calm in the evening. Left Kororarika at 6h. 30m. A.M., and anchored in Moagauai harbour about fifty miles to the northward of the Bay of Islands; a pilot came off and took us in. In running into Doubtless Bay for Moagauai harbour, it is advisable to keep between the port shore and two rocks that always shew above water, as there is a reef of rocks beyond them. The entrance to Moagauai is very narrow, but there is no danger if you keep a little on the starboard side of mid-channel, and run boldly in and come to in 4 fathoms in the cove on the starboard side. I think there would not be room for two steamers like the *Driver*. If you do not like going in, good anchorage will be found just outside. There is little or nothing to be got there except, perhaps, a few days refreshments for a small vessel. Four or five English reside here beside the pilot, but appear to be doing little or nothing, except keeping a little stock to supply ships calling.

About 200 natives were encamped on the beach, and, when we anchored, danced a war dance, which commenced by about one half the natives retiring from the rest for 50 or 60 yards, and then each party rushing towards each other as if they were going to fight, and, when close together, jumping in the air with their muskets and tomahawks extended perpendicularly at arms length, shouting and dancing in a most surprising manner, and flourishing their weapons with great dexterity; they keep most exact time, in all their movements, to the song. It is a most exciting dance, and I can fancy them capable of doing any thing under its influence; no wonder the first people who came to settle were alarmed at this peaceable demonstration. I believe, when it is intended as a friendly dance, the butts of the fire-arms are carried uppermost, but when otherwise, they dance it with the muzzle up.

26th. Fresh breeze and squally from northward, with occasional showers. On the north side of the bay, just outside this little harbour,

on the beach, are some veins of coal, which I went to look at, and had the place dug down 8 or 10 feet. What it may be further down I know not, but it appeared the surface coal was harder than to the depth I went; at that depth it was a very dark-brown colour, hard but not brittle, on the surface it was black; tried some on the fire on board, but it would not burn; the veins were of considerable size; there is a good deal of tolerably flat land, and the soil very good, with little wood anywhere. I believe it belongs to Government, and I did not see any native plantations. The natives now here having come in from a distance of twenty-five miles from Nopera's or Noble's place, and more are coming to-morrow, to meet the Governor.

27th. Showery, with light breeze from westward. The rocks here, as well as from Auckland towards the North Cape, are covered with delicious oysters. At the Island of Auckland, I believe there are none. At Wellington there are none found but the common flat mud oyster. Calm and fine to-night.

28th. Fine, with light breeze from N.W. The natives that were expected arrived about 11 o'clock, to the number of 150, making in all, including the women and children, 357, and 137 of this number armed with double-barrelled guns or muskets. They said they were very tired, and poor fellows they looked so, as they had walked the twenty-five miles heavily loaded with their accoutrements and baskets of potatoes, &c. Noble, who is the chief of this tribe, with eight or ten other chiefs, and a number of others came on board; they were, in general, well made and powerful young men. The natives from Auckland to the North Cape appear generally a finer set of men than those to the southward and about Port Nicholson. An old woman came on board (the repository of the traditions of the country,) and she said that New Zealand was inhabited before they came there, and that they came in canoes at three different times from an island that might easily be known, as all the places and river in New Zealand were named the same as those from whence they came. Sweet potatoes were the only thing they brought with them. In Moagauai harbour the tides are moderate, rise and fall about 7 feet; sheltered from all winds but N.W. There is a small flag-staff on the north head going in. I was not at this place during the change or fall of the moon. Pieces of copper ore were brought in from the neighbourhood of the North Cape. Left Moagauai this evening.

29th. Anchored at Auckland at 1 o'clock. This place has the advantage of most places in New Zealand, for should a vessel not be able to get in, she may anchor almost any where outside in safety.

June 4th. Very fine, with variable and light southerly wind. Went to Epsom, about three and a half miles from Auckland; the land round about here is excellent and level, a good deal of it in cultivation, and some excellent kitchen gardens along the road; it sells for about £20. to £25. per acre. The various roads about here are so very wide, 60 feet, that there is no chance of their being kept in repair at present, in fact, little or nothing has been done to them beyond marking and railing them in. Riding on horseback, the horses feet come out of the mud with a pop, like

the cork out of a bottle of Champagne, only much louder; however, Governor Grey is taking the roads as well as everything else in hand, and the aspect of affairs is changing wonderfully for the better. He is indefatigable in his exertions, sacrificing his health, and directing all his time for the benefit of New Zealand. Round about Epsom the ground is strewed with large pieces of scoria, excellent for all building purposes. The land where this lies is very rich, but it would, in most instances, be labour in vain to attempt to clear it. One unhappy man attempted to do so, and though his fields are encompassed with walls of scoria 5 feet high and 4 feet thick, and subdivided by the same, still the land seems as thickly covered with scoria as it was before he began.

AUTO-BIOGRAPHICAL SKETCHES, *by a Merchant Sailor, illustrative of the State of the British Merchant Service.*

(Continued from page 359.)

WHEN we were fairly clear of the Caledonian Canal, and into the German Ocean, our skipper became more at home, and when we reached the east coast of Scotland, he became quite another man; charts, books of direction, parallel rulers, and dividers, were all discarded, the courses were given from memory, every headland and lighthouse was recognized with facility, and we reached our destination in the Firth of Forth without further difficulty, or any occurrence worth narrating. Our passage round from Liverpool proved a warning to the master, although pressed to retain command of the schooner he positively refused, and remains contented with his lot, commanding his small sloop, stealing passages in fine weather along shore, and eking out a kind of existence; any ambition which might once have fired his thoughts, was completely subdued by his experience of the difficulty of stepping beyond his usual routine.

Glad to be relieved from a craft so miserably conducted, I set out for London, where I soon found myself once again engaged in a vessel going the long voyage. This craft was one of the old school, over 400 tons register, river built, a great carrier, having bluff bows, and heavy quarters, with a full poop and forecastle. She was commanded by an officer of the royal navy, of higher rank than is generally found willing to accept such employment, and possessing honors gained by civil service in a neighbouring portion of the United Kingdom, which I feel certain never before graced the quarter-deck of a merchantman. With a very little spare capital, he invested on this vessel, borrowing the principal part of the purchase-money by giving bond on the vessel, he intended to settle in one of our new and distant colonies, at that time in the fresh flush of an unmerited reputation not yet realized. He had evidently, from his language and bearing, pictured to himself an *el-dorado*, where

his mere presence would be sufficient to insure his fortune, and where such talents as he fancied he possessed, must be at once available in procuring him a Government situation. At the time he took command of the vessel, he had not been afloat for twenty years, and, consequently, had not a very correct idea of the present state of the navy, and knew literally nothing about the merchant service, or what his conduct should be as the commander of a British merchant ship. The outfit and provisioning of the vessel, as well as the general management, he left entirely to his chief officer, a young man who had reached his present rank through the various grades of midshipman, and third and second mate of a vessel trading to the East Indies. He possessed very little practical knowledge of his profession, but looked and acted the officer very well, and his appearance was rendered more conspicuous, and enhanced in his own estimation, by a ring, mustachios, blue cap and gold band, with blue jacket and crown and anchor buttons, aping as nearly as he could, what he conceived to be, an officer of the royal navy.

I think the system at present pursued of carrying youngsters to sea as midshipmen for three or four years, in vessels trading to India and China, a practice not very much adapted to making good seamen, or giving an officer a competent idea of his duty, I write advisedly, when I mention, that even in Mr. Green's and Mr. Smith's employment, youngsters are left very much to themselves, and in other ships almost entirely so; they often idle away their time, or indulge in habits, language, and amusements, not at all of a proper kind. I am not blaming the owners for this, as I am assured it is Mr. Green's wish to have the strictest discipline on board his vessels, and the youngsters properly looked after; the captain, however, carries out these instructions as he thinks fit, and, I am sorry to say, the passengers sometimes occupy much valuable time that might be judiciously given to other and more useful purposes; these ships will not be efficient until a purser is carried, whose duty would consist in looking after passengers, and permit the captain to devote his time to more legitimate objects.

I am decidedly of opinion that the youngsters and junior officers of these ships should not be permitted to wear any uniform while on shore in this country; when aboard it is desirable, and on board ship can do no harm, but I think Mr. Green should choose a uniform more different from that worn by officers of Her Majesty's navy, than his at present is; I know that it is a source of annoyance to officers in the navy, and I do not wonder at it, as the uninitiated, and foreigners particularly, do not discern the difference in the button, and are apt to imagine some of the dirty youths who shew themselves about London, to be officers of the navy. I lately saw one of these youths at the Horse Guards in the morning, as the guard was being relieved, sporting a swallow-tailed coat with uniform buttons, cap and gold band, and, more absurd than all, a sword by his side; he was dirty, unshaven, with a buff vest very much soiled, and his whole appearance bespeaking a youth removed from the control of his friends, and playing the fool in London. I would seriously recommend Mr. Green to change his buttons and band to silver colour, and restrict the use of uniform to foreign countries and ship board; his

is a noble employment, and he may well be proud of possessing the finest merchantmen in the world.

Our captain had agreed to carry out Government officers to the colony in the cabin, and emigrants between decks, under the auspices of a company. Some of the cabin passengers came down occasionally while the vessel was fitting out, and seemed to be on the best terms with the captain; they were heard to express their great satisfaction at the prospect of sailing in a vessel so well commanded, which meant, by a naval officer of such rank; he, it appeared afterwards, promised the best of treatment, and I really believe, before we started, both passengers and master, anticipated a pleasure party across the ocean, more than the stern realities of a long, tedious passage, with a heterogeneous mass of people unaccustomed to a life afloat, with its consequent difficulties and annoyances. It was intended, before we started, to call at the Brazils for water and provisions, an ample stock being supposed to be put on board of wines, and other requisites, and it appeared afterwards, the captain had been very prodigal of his promises as to the abundance of every thing which they would enjoy. Our second officer was a young man of a neutral kind of character, the boatswain, carpenter, and crew, of a mixed character, quiet men, on the whole, and much more amenable to the eccentricities of a mixed naval and mercantile discipline, than the general run of merchant seamen.

Detained by the want of many necessaries which were only thought of at the time we should have started, the patience of the passengers, collected from various parts of the country, began to wax short, but without any ebullition of feeling, we got all fairly on board at Gravesend. It would be difficult to describe the scene which takes place on board an emigrant ship on leaving England, a collection of strangers, met in an unusual position, hemmed into much narrower bounds than they had been accustomed to, their manner of living, and their food different, looking on each other with a suspicious sort of look—sorrow at parting with their relatives on a long and uncertain voyage, added to the uncertainty of the realization of their future prospects in their adopted home, increasing the desolate kind of feeling already engendered. Some looked gloomy and sad, sighing when they thought of the past; some gave vent to their feelings in tears, some in lamentation, others evinced a peculiar shortness of temper, and quarrelled with every one they came near; no one seemed inclined to put their traps in order for the passage, furniture and boxes, and anomalous packages of all descriptions were strewed about; the cabin presented the same features as the lower deck, and nothing can be more uncomfortable for all hands on board than the first week of an emigrant vessel.

Under the charge of the pilot, we got to the Downs and to Cowes Roads, without any particular occurrence; reports were already current in the fore-castle that the skipper was no seaman, the mate was at one time snappish, at another too lax, there was no regularity with meals or work, all hands were often called without the slightest necessity, still we were not over-worked. Rumours were soon afloat amongst the crew that the captain and cabin passengers were not agreeing, he threatened

to do what he could not, by way of controlling them, and they used unwarrantable language in return. Some of the passengers had moved in excellent society, and going to fill high official situations, considered themselves entitled to greater deference and liberty of speech and conduct, than was consistent with the good discipline of the vessel. Differences were soon fostered into a quarrel, which certainly became truly ridiculous to the crew. It appeared the captain only permitted the steward to place a certain quantity of wine on the cabin table for lunch, this the passengers deemed insufficient, they consulted about it, and one was appointed to remonstrate with the captain, and get as much as they might feel inclined to use; the remonstrance was accordingly made and produced no effect, the master saying he would not give any more, and going abruptly on deck. The passengers consulted together, and agreed to send the steward with a message to the captain, who was pacing the poop, with his dignity immensely ruffled, and evidently in a great passion; the steward delivered his message, but got only an oath in reply, which he had not time to carry to the passengers, when the captain followed him into the cabin, and said in a voice excited from passion, "There, gentlemen, I see you are determined to do what you please, take the keys, and help yourselves, I declare the ship in a state of mutiny," suiting the action to the word, he threw the keys of the lockers on the cabin table with force enough to break it, and bounced out of the cabin into his own state-room. The scene in the cabin was in a few minutes reported in the fore-castle, and caused great amusement amongst the crew, who had never heard of a vessel being in a state of mutiny in consequence of a quarrel between the skipper and his passengers.

Very little time was given to speculate upon the matter, for the boatswain was soon heard calling all hands; on deck we accordingly went, where we were ordered aft to the capstan on the quarter-deck, where the captain was pacing about evidently much agitated. He began by asking us if we were satisfied with his conduct, to which some one, after a while, muttered out that we were; the whole crew were upon the grin, it being almost impossible to keep one's gravity under the circumstances. He then roared out at the top of his voice, evidently with the intention of letting the passengers hear him, "Very good, men! I declare the ship in a state of mutiny, the passengers say they will do as they like." (I believe when the steward got the message to the master about an additional supply of wine, some one said, if he does not give it, we will take it). We were, during this scene, somewhere off Cape Finisterre, with steering sails set, and fine weather, with a gentle breeze. After uttering the words I have mentioned, he turned to the chief mate, and ordered him to shorten sail to a close reefed main-topsail, and heave the ship to; this was accordingly done, very much to our amusement, indeed, we could not refrain from laughing while we were assisting in this most silly method of endeavouring to settle a dispute. In this manner we remained during the afternoon, night, and whole of next day, the crew doing nothing but amusing themselves amongst the emigrants. These latter were allowed to be on deck, night and day, no division existed between married and unmarried,

and the scenes that took place in that vessel, between the emigrants themselves, and the seamen and female emigrants, are beyond description. Mr. Owen could not have wished for a more complete exposition of some of his peculiar doctrines.

During the afternoon and night of the *mutiny*, the captain kept working his passion to the sticking point, he must have contemplated doing something, as he was seen studying attitudes before the looking-glass in his stateroom, dressed in a uniform with his sword buckled on, and pistols in his belt; what he intended to have done never was known, as the passengers took no notice, but took what they could get to eat, and the second evening, tired of the ridiculous position in which the vessel was placed, one of them sent for the captain and remonstrated with him; what passed I do not exactly know, but after dark, sail was again made, and the vessel proceeded on her route. Things moved more smoothly in the cabin afterwards, an unlimited quantity of wine was given to luncheon, and the passengers made fewer complaints, seeing that if the captain could do nothing else, he could, at all events, stop their onward progress. Amongst the crew and emigrants the same misrule existed, provisions were wasted, and before we reached the Brazil coast, supplies of water and fresh stock were very scanty.

It was broadly stated on board that we were going to Bahia, but the manner in which the vessel was conducted when approaching the coast, proved that the master had little confidence in his own knowledge of navigation, and as little in the mate's, who seemed to give himself very little trouble about any thing further than a flirtation with some of the lady passengers. After an extraordinary quantity of manœuvring, we made the land, but whether to windward or to leeward of our port, did not seem known. It was the southern monsoon on this coast, and the meridian altitude of the sun at noon, (after we had made the land, and remained waiting some time,) proved to the master that we were considerably to windward of our port. Sail was immediately made, and we ran until next morning, still no town was visible; books of directions, telescopes, and charts, were brought on deck, the passengers using each alternately with the master, and apparently giving as decided an opinion as to our whereabouts; nothing, however, was discovered of the wished for haven till noon once again solved the difficulty, and proved that we had overrun our distance, from miscalculation or inattention, and assisted by a lee current. Close hauled was now the order, and with a dull ship, a lee current, and baffling winds, we spent two or three days trying to get up in shore, in vain, however, until a shift of wind one night enabled us to make a long reach on the starboard tack, which gave us so much southing, that we went about, sure of being to windward. The land was again closed, but no town was visible, the sun again proved that we were to windward; it now fell calm, and really it seemed as if we were never to reach the wished for haven. Passengers got shorter tempered than ever, the captain paced about in sullen silence, and the crew began to mutter sundry pithy sentences, indicative of discontent. Evening brought a light breeze, again sail was made, but whether it was want of calculation, or carelessness, or an extra current, morning brought us day-

light but no harbour. Again, the sun's meridian altitude proved that we were past, and again we beat back, a third time we made the coast, and saw a vessel steering in for the land, which we followed, and after a week spent in looking for it, entered the harbour of Bahia.

The captain and passengers went on shore, and watering and provisioning the vessel went on with activity; there was no lack of fruit amongst the emigrants, being easily got in exchange for old clothes. After three or four days spent here, it began to be rumoured on board that the captain could not raise money to pay for the provisions, the whole circumstances soon came to be known from the passengers. It appeared the master, although he intended calling at Bahia, had made no arrangements before leaving England for procuring funds when there; he seemed to fancy that his bill upon his agent would be at once available. This, however, would not do, the whole expenses amounted to about £400, so inadequately had the ship been provisioned originally, and so great had been the waste on the passage. The refusal to accept his bill, was, I understand, a sad blow to the captain's vanity and idea of his own importance; he proposed to give collateral security by bottomry on the vessel, which he considered a desperate step, but to his great amazement this was at once refused. It was explained to him that even on an unincumbered register, money would not be given on bottomry on an outward passage to such a distant part of the world, as the chance of further casualties or wants were great, and the last bottomry bond has the preference. The passengers themselves became alarmed at the detention, the captain became sick, or feigned to be so, his wounded vanity at the occurrences of the passage, and his want of means, were, I think, the cause. No other course appeared open than for the principal passenger on board to indorse the captain's bill, to this the captain had recourse, at the same time he resolved to return to England, and send on the vessel under the command of the mate. Disgusted with his situation, and further prospect of annoyance, I have no doubt caused him to adopt the resolution, which was not negatived by the passengers.

To the mate, therefore, we were now to look as our future commander, a prospect which seemed to cause very little excitement amongst the crew, they appeared to think that nothing could be worse than the past management, and a change has always charms for a sailor. The change had the effect of elating the mate very much, the prospect of uncontrolled dominion added to his vanity; of the responsibility of having so many human beings under his care, he apparently thought nothing, and circumstances proved he cared as little. A chief mate who happened to be in Bahia from some wrecked vessel, was appointed chief mate in our ship, another mustachioed man, but who appeared to be composed of sterner materials than any officer we had yet had. We began to fancy him a tight hand, and under a good skipper he might have proved a good officer, but he soon saw the easy, quiet, temperament of our new master, and quickly acquired a certain sort of ascendancy over him. It was soon apparent that the chief mate was also master. We sailed from Bahia fully equipped and provisioned, according to the ideas of the late and present master, for the remainder of the voyage;

the old want of system, however, showed itself, the provisions were wasted, present only thought of, the future never regarded; private parties were held alternately in the state-room of the master and chief mate, to which only a select few of the passengers were admitted; singing and drinking were allowed at these soirees, the lights were kept in beyond the prescribed time, the passengers took liberties with their lights also, the little discipline that once existed in the ship was now fast on the wane, irregularities amongst the passengers were more frequent, quarrels ensued, and every one on board began to feel more or less uncomfortable. We were not three weeks out from Bahia when it became very evident that fresh provisions were again becoming scarce, waste had curtailed the supplies, fowls, and pigs even, were taken by the emigrants with impunity, the master and mate being both so immoral in their conduct, as to warrant any irregularity on the part of the passengers. The cabin passengers began to surmise that they must not pass the Cape of Good Hope without replenishing the supplies, and a meeting was held amongst the principal government officials to consider the matter. At that meeting, it was resolved so ask the master to put into Table Bay for the purpose of obtaining fresh supplies. Next day, at dinner, the principal passenger mentioned the subject to the captain, who seemed to demur, the passenger appealed to a fellow passenger, who had privately perfectly agreed with him, the man chose to deny that he ever said there was a necessity for putting into the Cape, the first called the second a liar, the second threw his wine glass in the face of the first, but fortunately missed him, while the first sent his tumbler full of liquid flying at the head of the second, the others then interfered, but not before many bitter expressions had been exchanged between the parties, and a hatred engendered which existed during the voyage, and I have since learned, after they landed, it ended in a challenge given and accepted, to fight a duel on arriving at the Cape of Good Hope, whence the master resolved to proceed, on getting a requisition to that effect signed by the passengers. Firmness and good conduct on the part of the master might have avoided all such disputes, and it is astonishing, considering the little opportunities sailors have of knowing much about what the world calls good breeding, how very correctly they judged of the conduct, or rather the misconduct, of the parties concerned. With all the relaxation from duty, and enjoyment of freedom which the want of management and indiscretion of the master gave them, they did not, in their quiet moments, cease to regret the state of matters on board, and I have invariably found well disposed seamen fond of a well-regulated and strictly disciplined ship.

The elements of discord already sown, and becoming every day more conspicuous in their effects, made every one anxious to reach the Cape. The mate and master were now, to all appearance, on a footing of equality, they walked the poop at night, arm in arm, smoking cigars, the duties of the vessel were left to subordinates, and, of course, inefficiently performed; the emigrant women were taken into the cabins, and other irregularities committed which would scarcely be credited by those not present. A fair wind carried us towards the Cape, the chains were

bent, and anchors got over the gunwale, the high land of Table Mountain at length made its appearance, and the afternoon of a beautiful day was occupied in steering in towards the entrance of the bay. The mate appeared now to assume the command, he had been frequently into Table Bay, and the master also had been there twice, once before as second mate of an emigrant vessel, which got ashore on Green Point, at the time the master was below employed in a very questionable manner. Although the master had thus experience of the entrance, he deferred to the mate, who virtually took command, and began to expatiate loudly to the passengers on the beauties of the bay, of his knowledge of the entrance, and ability to take the vessel in. He gave orders to haul down the steering sails through a brass speaking trumpet, which he had now assumed, although the day was very fine, and there was no interruption to the sound of his voice on board of our little vessel. I cannot venture to say that he had been drinking, as I was not sufficiently near to him, and it is at all times difficult to judge of this, as most men become excited when about to enter a harbour, after a protracted or disagreeable passage. From miscalculating our distance from the land, and shortening sail too soon, it was becoming dusk when we came opposite to Robben Island; every eye was turned towards the desired haven, and some were even dressed for going on shore. At nightfall we had passed the island and approached Green Point, when all at once the vessel touched the bottom; no lead had been going, the judgment alone had been trusted; instantly some one called out let go the anchor, this was promptly done, the stopper and shank-painter being cut with an axe, grating all the while over the irregular bottom the vessel finally swung to her anchor. From the moment of her touching, all on board was anarchy and confusion, orders were given in one breath, and countermanded in the next, the exclamations of the passengers drowned the orders of the officers, if any distinct ones were given; the ground swell was rolling in heavier than it had before appeared, and occasionally causing the vessel to touch the rocks; the shocks were not, however, great, and had a kedge been promptly run out, the vessel might have been hove ahead, and canted clear of Green Point reef, on which we were now anchored. Nothing, however, was attempted, a sudden order was given to slip, the slack cable was not even gathered in, and no sooner was the chain slipped than the vessel got stern way, touched a rock with her heel, swung round broadside on to the wave, and began to thump heavy on a shary rocky bottom. Blue lights were now burned, the vessel every moment getting closer in shore, and the sea occasionally breaking on board; fortunately, the wind remained light. The alarm gun was fired on shore, the signals having been seen, and the harbour-master's boat came off, a boat well manned and commanded by the chief mate of an Indianan in the bay also came, and proved the most useful in landing the passengers and emigrants; indeed, it was a pleasure to witness the exertions of the crew, and the noble conduct of the fine young man who was in charge.

After a night of great exertion the whole crew and passengers were saved, the passengers being placed on board the vessels in the bay. By

the time this was accomplished daylight had made its appearance, when one of our passengers induced the chief mate of the Indiaman, who had already done so much, to venture once more alongside our vessel, now thumping heavily, and the sea washing over her decks, to enable him to secure a box containing the whole money he had to assist him in establishing himself in the new colony to which he was going. Again the boat pulled under lee of the ship, and while going alongside, the sea, which had become heavier, rolled onwards with an extra violence, and swamped the boat, by which the gallant mate was drowned, as well as three of the crew. So lately rescued from a perilous situation as I myself had been, I lamented deeply the fate of this most excellent man; he was a highly educated honourable gentleman, a good seaman, and while he maintained strict discipline on board his vessel, he was beloved by all the crew.

WATERSPOUT IN MORECOMBE BAY.—This unusual and singular phenomenon was observed on the 25th ult., about half past one o'clock P.M. The wind was in the west, and the sky had been rather overcast during the day. It was very evident that there was thunder at a distance, in every direction, though not heard till this time, when several claps were heard, and some lightning seen. I was reading at the time on the shore near Polton-le-Sands. When I first observed the spout, it was fully formed, the base resting on the sands, and the upper part united with an insulated dense cloud (*cumulus*). Though the sky was nearly obscured, the darkness was not so striking as is often the case in thunder-storms. In observing the spout from the shore, it appeared in the direction of Kent bank or N.W. The base was rather broader than the rest of the spout, and a little below the cloud it began to expand upwards, so as to assume the shape of a speaking trumpet or a funnel; the intermediate part was of uniform thickness, and well defined. The pipe (for it was distinctly hollow,) was not perpendicular, but declined east about 30°, or made an angle with the horizon of 60°. After remaining several minutes stationary, without any material change in its appearance, it began to curve more and more, not as though the cloud was moving from it, but as if the base had begun to move from the direction of the cloud; and it was so evident that it travelled along the sands, at first very slowly, but by degrees with considerable rapidity. Soon after the motion began rather to be apparent, the pipe became curved and less dense rather above the middle, and that part gradually vanished. During this time the upper and lower portions remained very distinct, the lower moving with great velocity over the sands, east, towards Grange, the mass of water of which it was composed falling in torrents, and the rebound seemed from 20 to 30 feet high, the altitude, of course, gradually diminishing. The upper portion decreased by slow degrees, the funnel-shaped part attached to the cloud remaining longest visible. I was, as near as I can tell, about four miles distant, and the phenomenon was, to all appearance, near the shore, and opposite to Kent bank.

I hope there will be an account furnished of the appearance by some observer in that part, as he would have a better opportunity, from his proximity to it, than I had, of observing the different changes and appearances. As I said before, the spout being fully formed, when I first observed it, I cannot say how long the whole appearance lasted, but I watched it from five to ten minutes before it entirely disappeared. I find on inquiring of those who re-

side near that part of the bay where I was, that waterspouts are occasionally seen, some having witnessed several within the last twenty years, and generally in the same locality. I remember that a few years ago, when travelling towards Lancaster, a waterspout was seen over that part of the bay. I refrain from speculating on the cause of this phenomenon, as it has not to my own mind been very satisfactorily accounted for, though it is generally attributed to a vacuum caused by electricity. The power required to hold suspended in the air so amazing a mass of water must be truly prodigious.

THE PRE-ADAMITE MONSTERS OF THE DEEP.—The shoals were alive with myriads of invertebrated animals; and crowds of sharks hovered about feeding upon the larger forms. There were also numerous other animals, belonging to those remarkable groups which I have attempted to describe in detail. Imagine, then, one of these monstrous animals, a plesiosaurus, some 16 or 20 feet long, with a small wedge-shaped crocodilian head, a long arched serpent-like neck, a short compact body, provided with four large and powerful paddles, almost developed into hands; an animal not covered with brilliant scales, but with a black slimy skin.

Imagine for a moment this creature slowly emerging from the muddy banks and half walking, half creeping along, making its way towards the nearest water. Arrived at the water, we can understand from its structure, that it was likely to exhibit greater energy. Unlike the crocodile tribe, however, in all its proportions, it must have been equally dissimilar in habit. Perhaps, instead of concealing itself in mud or among rushes, it would swim at once boldly and directly to the attack. Its enormous neck, stretched out to its full length, and its tail acting as a rudder, the powerful and frequent strokes of its four large paddles would at once give it an impulse, sending it through the water at a rapid rate. When within reach of its prey, we may almost fancy that we see it drawing back its long neck as it depressed its body in the water, until the strength of the muscular apparatus with which this neck was provided, and the great additional impetus given by the rapid advance of the animal, would combine to produce a stroke from the pointed head which few living animals could resist. The fishes, including, perhaps, even the sharks, the larger cuttle-fish, and innumerable inhabitants of the sea, would fall a prey to this monster.

But now let us see what goes on in the deeper abysses of the ocean, where a free space is given for the operations of that fiercely carnivorous marine reptile the ichthyosaurus. Prowling about at a great depth, where the reptilian structure of its lungs, and the bony apparatus of the ribs would allow it to remain for a long time without coming to the air to breathe, we may fancy we see this strange animal, with its enormous eyes directed upwards, and glaring like globes of fire. Its length is some 30 or 40 feet, its head being 6 or 8 feet long; and it has paddles and a tail like a shark. Its whole energies are fixed on what is going on above, where the plesiosaurus or some giant shark is seen devouring its prey. Suddenly, striking with its short but compact paddles, and obtaining a powerful impetus by flapping its large tail, the monster darts through the water at a rate which the eye can scarcely follow towards the surface. The vast jaws, lined with formidable rows of teeth, soon open wide to their full extent; the object of attack is approached—is overtaken. With a motion quicker than thought, the jaws are snapped together, and the work is done. The monster, becoming gorged, floats languidly near the surface, with a portion of the top of its head and its nostrils visible, like an island covered with black mud above the water.—*The Ancient World, by Professor Ansted.*

EXAMINATION OF MASTERS AND MATES IN THE MERCHANT SERVICE.

We had hoped to have been enabled to lay before our readers another list of Masters and Mates, who had been examined since we published the last in our July number, but we have looked in vain in the *Gazette*, in which the Board of Trade usually publish their list, and as we have not been favoured with a copy of any list issued by the Committee for Managing the Affairs of *Lloyd's Register of British and Foreign Shipping*, we conclude that none has been published. Although this is much to be regretted for many reasons, considering as we do the importance of the subject, we still hope that if there is any reason for this delay, it may be rather traced to the engagements in which Mr. Lefevre has lately been engaged, as well as to the change in his affairs by the resignation of Mr. Macgregor, now M.P. for Glasgow, than to any relaxation in the system.

By the fourth Report of the Select Committee on the Navigation Laws, which sat during the late Parliament, it is clear, from the evidence given, and the anxiety manifested, (most praiseworthily manifested,) by Rear Admiral Dundas, that the Examination of Masters and Mates in the Merchant Service must go on. The voluntary system, (inasmuch as it affects existing interests,) is undoubtedly the best under all the circumstances, but if this fail, we have no doubt that it will be followed by a compulsory measure, which will be rendered the more necessary from this fact, that emigration must go on, and from its being almost imperative, from the serious losses which have unhappily recently occurred, that both good ships and good masters will in future be required for these purposes, and that the public, always feeling a deep interest in the safety of human life, will positively demand the same.

Upon the motion of Sir Howard Douglas, an order was made on the 11th May, for a copy of *Instructions* given to the *Board*, appointed in the several Sea Ports of the United Kingdom for the Examination of Masters and Mates, and also for a copy of the *Certificates of Qualifications* granted to candidates who pass the regulated examination. He likewise moved for, and obtained a list of those officers to whom such certificates had been granted. This list we have already, from time to time, laid before our readers, and we have given the substance of the instructions in one of our former numbers, but as this subject, in our estimation, cannot be too fully placed before our nautical friends, we think it right to append to these remarks, a copy of the information thus laid before Parliament.

We also insert a very sensible letter from "an old captain," which lately appeared in a daily journal, very closely connected with our Mercantile Marine. The sentiments to which it gives expression, are quite in unison with those which we have recorded in our former remarks, and which we gladly repeat.

A Copy of the Instructions given to the Boards appointed in the several Sea-ports of the United Kingdom for the Examination of Masters and Mates of Merchant Ships and Vessels.

*Office of Committee of Privy Council for Trade,
Whitehall, 5th January, 1846.*

SIR.—I am directed by the Lords of the Committee of Privy Council for Trade to state to you, that, in consequence of certain suggestions which my

Lords have received from different quarters, they are desirous that, for the better identification of masters and mates to whom certificates should be granted, an indorsement or note should be made on each certificate, stating the age and place of birth of the master or mate, and the tonnage and port of the vessel (if any,) in which he shall be serving at the date of the certificate, or in which he shall have last served previous to that date, and the number of his register ticket (if any).

I am, &c.,

(Signed) G. S. LEFEVRE.

J. Herbert, Esq., Trinity House, London.

Similar letters, of like date, to the Trinity House, Dundee, (T. M'Ewen, Esq.) and Marine Board, South Shields, (Thomas Adams, Esq.)

*Office of Committee of Privy Council for Trade,
30th September, 1845.*

GENTLEMEN.—In reference to the previous communications to your Board from the Lords of the Admiralty and this Board, on the subject of the intended examination of masters and mates in the merchant service, I am directed by the Lords of the Committee of Privy Council for Trade to transmit ten copies of the printed arrangements and regulations, as finally settled by this Board in concurrence with the Lords of the Admiralty and the Elder Brethren of the Trinity House of Deptford Strond, and I am to state, that my Lords will be prepared to make any further suggestion in their power upon any points in this measure respecting which your Board may be desirous of obtaining further explanations.

My Lords have requested the Elder Brethren of the Trinity House of Deptford Strond to furnish my Lords with a statement of the arrangements which they may make with regard to any points of detail not specifically mentioned in the printed regulations, and a copy of such statements, when received, shall be duly communicated to you.

I am to add that my Lords rely on the aid of your Board, as well as of the other Boards who are prepared to co-operate with them in carrying into effect this measure, from which my Lords anticipate the most salutary results to the mercantile marine of the country.

I am, &c.,

(Signed) J. G. S. LEFEVRE.

*Board of Examiners of Masters and Mates,
Trinity House, Hull.*

Similar letter to Trinity House, Newcastle; Trinity House, Leith; Trinity House, Dundee; Board for Licensing Pilots, Glasgow; Ballast Board, Dublin; Commissioners of Pilotage, Liverpool.

*Office of Committee of Privy Council for Trade,
Whitehall, 12th September, 1845.*

SIR.—In reference to the correspondence which has taken place between the Lords of this Committee and the Elder Brethren of the Trinity House of Deptford Strond, with respect to the examination of masters and mates, I have the honour to enclose twenty printed copies of the arrangements and regulations, as finally determined on by the Lords, in concurrence with the Elder Brethren and the Lords of the Admiralty, and which were advertised in the London Gazette of 19th August, 1845,

I am to request that the Elder Brethren will make such communications as they may deem advisable on the subject to the six Branch Pilot Boards

under their superintendence named in the schedule to the regulations, and, further, that the Elder Brethren will from time to time furnish my Lords with a statement of the arrangements which they may think fit to make with regard to any points not specifically provided for in the regulations.

I am to add, that my Lords confidently rely on the aid of the Elder Brethren in carrying into effect this measure, from which my Lords anticipate the most salutary results to the mercantile marine of this country.

I am, &c.,

J. Herbert, Esq.

(Signed) J. G. S. LEFEVRE.

Arrangements and Regulations for Examining Masters and Mates in the Merchant Service, voluntarily offering themselves for Examination.

I.—As to the Boards of Examiners.

1. The Boards enumerated in the schedule hereto, have voluntarily undertaken respectively to conduct the examinations hereinafter described, according to the arrangements and regulations contained in this notice, which are subject to any future regulations to be from time to time made by the Lords of the Committee of Privy Council for Trade, and published in the "London," "Edinburgh," and "Dublin Gazettes."

2. Each Board of Examiners is to examine all persons who shall apply as hereinafter is mentioned, for certificates of qualification as masters or mates of vessels, and shall grant to such of them, as upon examination shall be found to be properly qualified, certificates accordingly, of the classes following:—

Masters	. . .	1st class	. . .	2nd class	. . .	3rd class
Mates	. . .	1st class	. . .	2nd class	. . .	3rd class

3. The actual examiners are to be members of the said enumerated Boards, or proper persons appointed or employed by the Boards respectively.

4. In every case the examination is to be carried on by at least two examiners, who have had charge of ships or vessels on over-sea voyages.

5. In the examination of the first and second classes hereinafter described, the examiners are to be assisted by a scientific person competently acquainted with the the theory of navigation and nautical astronomy.

6. Such examination is to comprise the several points, and be subject to the several conditions hereinafter mentioned.

II.—Conditions and Subjects of Examination.

1. No person is to be examined as a master under twenty-one years of age, nor as a mate under nineteen years, nor who has not previously served at sea for not less than six years as regards an examination for master, and for not less than four years as regards that for mate.

2. All candidates for examination must produce sufficient evidence of their ages, and certificates of service and sobriety, general good character and conduct; and particular care is to be taken by the examiners to satisfy themselves as to the habitual sobriety of the party previous to granting him a certificate of fitness to take charge and command of, or serve as master or mate on board any vessel.

3. They must be able to write a legible hand, and must understand the five first rules of arithmetic.

4. They will be examined as to their knowledge of seamanship, of rigging vessels, stowing holds, &c., in addition to which, those to be admitted into the lowest class, or class third, must be able to correct the courses steered by compass for variation, lee way, &c., to work what is termed a day's work, to

prick off the vessel's place on a chart, either by the calculated latitude and longitude, or by the bearings of the land by compass.

5. They must show that they understand the use of the quadrant or sextant, and can observe the sun's meridian altitude, and therefrom determine the latitude, and are able to work the tides by the age of the moon, from the known time of high water at the full and change.

6. To be entitled to second class certificates, candidates must, in addition to all the foregoing qualifications, be able to ascertain the latitude by double altitudes of the sun, and by meridian altitudes of the moon, or of those bright planets or stars, the places of which are given in the Nautical Almanack. They must understand the care and management of chronometers, and the mode of working out and ascertaining the longitude therefrom, and they must be able to ascertain the variation of the compass by the azimuth of the sun, as well as by the amplitude.

7. To be entitled to a first class certificate, candidates will, in addition to all the foregoing qualifications, undergo a more strict examination as to their proficiency in navigation, and also in seamanship, under the many difficult circumstances and trying situations to which vessels may be exposed, such as having to erect and to rig jury masts, when suddenly requisite, or to form rafts in case of being stranded, &c., and in such other cases as call for a higher order of resources. They must have a competent acquaintance with plane trigonometry, a general knowledge of nautical astronomy, including the determination of the latitude by reduction to the meridian, and of the longitude by lunar observations.

8. They must be acquainted with the mode of ascertaining and applying the deviation of the compass, produced by the local attraction, which is of so much importance in all vessels, and particularly in those built of iron, or having iron on board in any quantity. They must be practically acquainted with the mode of comparing two or more chronometers, and of rating them by equal altitudes.

9. They must understand the construction of Mercator charts, so as to be able to correct any errors they may detect in those they possess, as well as to insert with precision any new shoals or islands they may discover; and must be well versed in the mode of laying down the required course on the chart.

10. They must also possess a knowledge of mercantile book-keeping, at least by single entry.

11. In the event of any candidate proving himself to have higher attainments than the foregoing, such as being well versed in great circle sailing, spherical trigonometry, marine surveying, and a more extensive knowledge of astronomy, it is to be noted in his certificate, and is to entitle him to have "Class 1, extra," thereon.

12. The examination of mates, who are to be considered as the substitutes for masters in certain contingencies, is, on that account, to embrace the same branches with the master's examination in each class respectively, having regard, however, in its details, to the denomination of certificate for which each person may be an applicant.

III.—*Times of Examination.*

Every candidate desirous of being examined, shall transmit to the clerk of the Board by whom he is to be examined, an application in the form hereinafter described, and thereupon such Board shall appoint a proper time for such examination, not exceeding four clear days from the receipt of any such application.

IV.—*Form of Application.*

Every application for examination shall be made in the following form :—
 “ To the Board of Examiners of Masters and Mates at the port of . . . ”

“ I, *A. B.*, of . . . , being desirous of obtaining a certificate of qualification as a . . . , do hereby signify my request to undergo the necessary examination for that purpose ; and I herewith deliver my testimonials of character and service, and evidences of age, as per the following list, viz. :—

No. 1. . .

2 . . .

3. . .

4. . .

&c.

And I hereby declare that I will accept the said certificate of qualification, subject to the withdrawal thereof by any Board of Examiners under such regulations as are now, or may from time to time be made by the Lords of the Committee of Privy Council for Trade.”

V.—*Fees for Examination.*

1. In order to provide for the remuneration of examiners, or for the incidental expenses of the proposed arrangements, the following fees shall be paid by the candidates examined :—

For a master's certificate, . . . £2 .

For a mate's certificate, . . . 1

2. One half of the said fees respectively shall be paid by the candidate at the time of the transmission of his application, and the remainder by candidates deemed entitled to certificates prior to the issue thereof.

3. In case a candidate fails to obtain a certificate, the sum that he has paid will not be returned to him.

VI.—*Application of Fees.*

1. The fees received by each Board of Examiners shall, after deducting one-fourth part thereof, be applied by them to the remuneration of the examiners, or otherwise for the purposes of the examination, as such Board in its discretion shall think fit.

2. The one fourth thus deducted shall be held by such Board to be annually applied towards the expenses of such inquiries as are hereinafter mentioned, or in defraying any other expenses incidental to these arrangements, as the Lords of the Committee of Privy Council for Trade shall direct.

3. Each Board of Examiners shall transmit to the Lords of the Committee of Privy Council for Trade, in the months of July and January, an account of the fees which they have received during the six calendar months preceding, and of the disbursements paid thereout.

VII.—*Certificates.*

1. The following is to be the form of certificate :—

“ By the Board of Examiners of Masters and Mates of Vessels at the port of We do hereby certify, that pursuant to the request of *A. B.*, we have examined into the competency of the said *A. B.*, and have found him duly qualified to fulfil the duties of . . . , and to be entitled to this . . . class certificate.”

2. Such certificate shall be signed by the actual examiners, and in all cases be counter-signed by the secretary or clerk of the Board of Examiners.

3. Within forty-eight hours after the issue of any such certificate, an authenticated copy shall be transmitted by the Board of Examiners granting the same, to the Lords of the Committee of Privy Council for Trade.

VIII.—*Withdrawal of Certificates.*

1. In case any vessel, the master or mate of which has a certificate, shall be lost, burnt, stranded, or otherwise damaged, or in case any master or mate having a certificate, shall be charged with having been drunk at sea, or with having been drunk on board at different times in harbour, the Board of Examiners nearest the port to which the vessel belongs, or nearest to the place on the coast of the United Kingdom where the vessel to which such master or mate belongs, shall arrive, or nearest to where they may be when the complaint is brought forward, may, if it shall think fit, upon receiving any information or complaint of the event or occurrence, inquire into the same; and if it shall appear to the Board of Examiners undertaking such inquiry, that such loss, burning, stranding, or damage, &c., of the vessel has been occasioned by the misconduct or default of such master or mate, or that such master or mate has been drunk whilst on duty, such Board of Examiners may, if it should think fit, withdraw the certificate of such master or mate, and declare that the same is withdrawn accordingly.

2. Within forty-eight hours after the resolution of any Board declaring the withdrawal of any such certificate, an authenticated copy of such resolution, together with a full statement of the circumstances under which their resolution of withdrawal has been founded, is to be transmitted to the Lords of the Committee of Privy Council for trade.

3. Any master or mate whose certificate has been withdrawn may, within seven days after such withdrawal, after giving notice to the Board of Examiners by whom the same shall have been declared to be withdrawn, and also to the Lords of the Committee of Privy Council for Trade, refer the matter to the Lords of the said Committee for their decision, which shall be final.

4. Pending such reference, and until such decision, the publication of the withdrawal of the certificate shall be suspended.

5. Every Board of Examiners, before proceeding to make any such inquiries as hereinbefore are mentioned, shall give seven days' notice of their intention so to do to the Lords of the Committee of Privy Council for Trade, and in case more than one such Board shall give such notice, the Lords of the said Committee shall decide by which Board the inquiry shall be made.

IX.—*Registration and Publication of Certificates*

1. A registry of certificates and of withdrawal of certificates will be kept, under the superintendence of the Lords of the Committee of Privy Council for Trade, in some convenient place in London, and will be open to inspection at reasonable hours, on payment of a fee of 6d. for each inspection.

2. The Lords of the said Committee will, from time to time, cause the names of the persons who have obtained certificates in their respective classes, and likewise the names and classes of the persons whose certificate shall have been declared to be withdrawn, to be published in the London Gazette, and also to be transmitted, as soon as conveniently may be, to the Committee of Lloyd's Register, and the Society for Registry of Shipping at Liverpool.

3. This publication will take place, so far as conveniently may be, within fourteen days after the certificates or declarations of withdrawal shall have been sent to the Lords of the said Committee.

4. The Committee for managing the affairs of Lloyd's Register of British and Foreign Shipping, have undertaken to denote in their list such of the masters of vessels therein named as shall have obtained certificates, by affixing the figures 3, 2, 1, 1 Ex., according to the class of certificate. These marks will be withdrawn on the withdrawal of the certificate.

Note.—Since these regulations were framed, the Register of the Society

for Registering of Shipping in Liverpool, has been consolidated with Lloyd's Register.

Schedule.

The Corporation of Trinity House of Deptford Strond.

The Branch Boards, consisting of the Sub-Commissioners of Pilotage at Beaumaris, Gloucester, Milford, Plymouth, Portsmouth, Great Yarmouth.

The Corporation of the Trinity House at Kingston-upon-Hull.

The Corporation of the Trinity House at Newcastle-on-Tyne.

The Corporation of the Trinity House at Leith.

The Corporation of the Trinity House at Dundee.

The Board for Licensing Pilots at Glasgow.

The Ballast Board of Dublin.

The Commissioners of Pilotage at Liverpool.

Note.—Other ports will be added to this list, when there exist authorities competent to undertake the duty.

A COPY of the CERTIFICATES of QUALIFICATIONS granted to Candidates who pass the Regulated Examinations.

Certificates of the Qualification of John Ellerby to act as Master of the First Class.

Trinity House, London, 5th Feb. 1847.

We do hereby certify, that, pursuant to the request of John Ellerby, we have examined into the competency of the said John Ellerby, and have found him duly qualified to fulfil the duties of master, and to be entitled to this first class certificate.

(Signed) W. Pixley, George Probyn, Charles Farquharson, *Examiners.*

(Countersigned) R. J. Moring Grey, *Clerk.*

(A true Copy.) R. J. Moring Grey.

Memoranda in respect of the above-named John Ellerby.—Place and date of birth, Stepney, in the county of Middlesex, in the year 1823. Last previous service, the *Gilmore*, of London, of 500 tons, as mate. Number of Register Ticket, 19,977.

(Signed) R. J. Moring Grey.

Certificate of the Qualification of Charles Stewart Fergus, to act as Master of the First Class.

Pilot Board, Glasgow, 19th May, 1846.

We do hereby certify, that pursuant to the request of Charles Stewart Fergus, Union Street, Hill Head Cottage, Greenock, we have examined into the competency of the said Charles Stewart Fergus, and have found him duly qualified to fulfil the duties of Master, and to be entitled to this First Class Certificate.

(Signed) George Henderson, James R. Forrest, J. Pollock, *Examiners.*

(Countersigned) A. Turner, *Clerk.*

(A true copy.) A. Turner.

Certificate of the Qualification of Hugh Inglis to act as Master of the First Class.

Trinity House, Dundee, 24th Feb. 1847.

We do hereby certify, that pursuant to the request of Hugh Inglis, master of the ship *Alexander*, of Dundee, of the burthen of 392 tons, we have examined into the competency of the said Hugh Inglis, and have found him

duly qualified to fulfil the duties of Master, and to be entitled to this First Class Master's Certificate.

(Signed) Robert Tosh, *Chairman*, John Jack, Peter Mackenzie, David Souter, John Clark, *Marine Teacher*.

(Certified as a true copy.)

James M'Ewen, *Secretary to the Board*.

Note.—Age of the above-mentioned Hugh Inglis, 31 years past. Place, and date of birth, Woolwich, 12th June, 1815. Past service, master of barque "Morgiana," of Dundee, tonnage, 354 tons. Present service, Master of ship "Alexander" of Dundee, tonnage 392 tons.

(A true copy.) James M'Ewen, *Secretary*.

Certificate of the Qualification of Benjamin Newton to act as Master of the Second Class,

Port of Newcastle-upon-Tyne, 15th Feb. 1847.

We do hereby certify, that pursuant to the request of Benjamin Newton, we have examined into the competency of the said Benjamin Newton, and have found him duly qualified to fulfil the duties of master, and to be entitled to this Second Class Certificate.

(Signed) John Rayne, John Ayre, William Taylor.
John Currie, *Secretary*.

Certificate of the Qualification of William Allen to act as Master of the First Class.

Trinity House, Leith, 15th Feb. 1847.

We do hereby certify, that pursuant to the request of Mr. Wm. Allen, commander of the steam ship "Dee," in the Royal Mail Packet Service, aged 36 years, (per certificate,) of Arbroath, we have examined into the competency of the said William Allen, and have found him duly qualified to fulfil the duties of master, and to be entitled to this First Class Certificate.

(Signed) Andrew Scott, Pat. Gillespie, *Nautical Examiners*.
Thomas Scotland, *Scientific Examiner*.

(A true copy.) Josh. Richmond, *Secretary*.

Certificates of the Qualification of Thomas Ingram and B. Davison to act as Masters of the Second Class.

South Shields Marine Board, 30th Jan. 1847.

We do hereby certify, that pursuant to the request of Thomas Ingram of South Shields, (mate of the brig "Vigilant," of Newcastle, 226 tons register,) aged 29 years, we have examined into the competency of the said Thomas Ingram, and have found him duly qualified to fulfil the duties of a master, and to be entitled to this Second Class Certificate.

(Signed) Arthur Elliott, William Stratford, Christopher Wawn, William Forrest, *Examiners*.

I certify this to be authentic,

Thos. Adams, *Secretary*.

South Shields Marine Board, 30th Jan. 1847.

We do hereby certify, that pursuant to the request of Bartholomew Davison, of South Shields, (mate of the brig "Huron," of Newcastle, of 271 tons register,) aged 26 years, we have examined into the competency of the said Bartholomew Davison, and have found him duly qualified to fulfil the duties of a master, and to be entitled to this Second Class Certificate.

(Signed) William Forrest, Christopher Wawn, Arthur Elliott, William Stratford, *Examiners*.

I declare this to be authentic.

Thos. Adams, *Secretary*.

*Certificate of the Qualification of J. M. Rogers to act as Master of the
Second Class.*

Trinity House, London, (Portsmouth Branch,) 30th Jan. 1847.

We do hereby certify, that pursuant to the request of John Mallison Rogers, we have examined into the competency of the said John Mallison Rogers, and have found him duly qualified to fulfil the duties of master, and to be entitled to this Second Class Certificate.

(Signed) Jno. C. Wood, Robt. Yule, H. W. Jeans, *Examiners.*

(Countersigned) James Powell, *Clerk.*

(A true copy.) H. Looe.

Memoranda in respect of the above-named John Mallison Rogers.—Place and date of birth, 30th March, at Helston, in the county of Cornwall, in the year 1822. Present, or last previous service, the "*Clyde*," of Southampton, of 1,159 tons, as chief officer. Number of register ticket, 55,944.

*Certificate of the Qualification of James Metherall to act as Mate of the
Second Class.*

Trinity House, London, (Portsmouth Branch,) 29th Jan. 1847.

We do hereby certify, that pursuant to the request of James Metherall, we have examined into the competency of the said James Metherall, and have found him duly qualified to fulfil the duties of mate, and to be entitled to this Second Class Certificate.

(Signed) William Walker, W. B. Cuming, *Examiners.*

(Countersigned) Rt. White Stevens, *Clerk.*

(A true copy) Rt. White Stevens.

Memoranda in respect of the above-named James Metherall.—Place and date of birth, Clovelly, in the county of Devon, in the year 1824. Present, or last previous service, the brig "*Fanny*," of Prince Edward's Island, of 233 tons, as mate. Number of register ticket, 241,988.

*Certificate of the Qualification of William Bullard, to act as Master of the
Second Class.*

Trinity House, London (Yarmouth Branch,) 25th Jan. 1847.

We do hereby certify, that pursuant to the request of William Bullard, we have examined into the competency of the said William Bullard, and have found him duly qualified to fulfil the duties of master, and to be entitled to this Second Class Certificate.

(Signed) S. S. Barber, by appointment of Sub-Commissioners, for Henry Jay, W. T. Fisher, Thornton Fisher, Astronomical Assistant, *Examiners.*

(Countersigned) William Davie, *Clerk.*

(A true copy.)

Memoranda in respect of the above-named William Bullard.—Place and date of birth, Oulton, in the county of Suffolk, in the year 1818. Present, or last previous service, the "*Rumbold*," of Yarmouth, of 96 tons, as mate. Number of register ticket, 187,623.

*Certificate of Qualification of W. H. Grebow, to act as Master of the
First Class.*

Liverpool, 26th Jan. 1847.

We do hereby certify, that pursuant to the request of William Henry Grebow, we have examined into the competency of the said William Henry Grebow. No. 9.—VOL. XVI.

bow, and have found him duly qualified to fulfil the duties of master, and to be entitled to this First Class Certificate.

(Signed) John D. Eshtly, Andrew Livingstone, J. W. Monteath,
Examiners.

(Countersigned) Mungo Dobie, *Clerk.*

(A true copy.)

Mungo Dobie.

Memoranda in respect of the above-named William Henry Grebow.—Place and date of birth, Liverpool, in the county of Lancaster, in the year 1812. Present, or last previous service, the brig "*William Murray*," of Liverpool, of 146 tons, as master. Number of register ticket, none.

Camberwell, July, 1847.

SIR.—Knowing you to be so strong an advocate for improving and raising the condition and character of our Merchant Marine, I think you have now a fair field open for your exertions to befriend the masters in it, and therefore no apology is necessary for calling your attention to a subject now being so generally discussed by all connected with navigation. Our legislators, however well skilled in framing laws, often lose the very object they have in view, for want of that *practical* knowledge of the subject they take in hand, which ought to guide them in their endeavours to protect the interests of that community for whose benefit the law is intended. In no instance is this better exemplified than in the present regulations for the examination of masters in the merchant service; and an instance like the following will convince any man of judgment, that however necessary it may be that no vessel should go to sea without a duly qualified master and officers, yet that some line ought to be drawn on the outset of such an examination.

A master, who has been a commander for the last twenty or thirty years, before he can now take up a government contract, is compelled to pass an examination. He perhaps entered the service when his country had neither time nor power to scrutinize the birth, parentage, and education of men, who at that time formed the strongest bulwarks against her enemies. He has well fulfilled his duties in the different grades through which he has passed; can produce testimonials of respectability, and it would be fair likewise to suppose that the period of time he has commanded a vessel, is some proof of his capabilities for so onerous a situation; yet, because he does not understand plane trigonometry, he is compelled to take a *second* class certificate, and has the mortification of seeing, on the same *published* list of the examined, the name of some youngster, as an "*extra*," or first-class man, who may have been a sufficient number of years at sea just to qualify him for this certificate, but who may lack that judgment, steadiness, and capability for command, which has secured to the well-tryed and long experienced, but unsuccessful candidate, the respect and approbation of his owners for as many years, perhaps, as have passed over the head of his "*extra*" rival. Such men have no right to be subjected to so rigorous an ordeal.

Let me not, however, be misunderstood on one point. All *young* commanders and officers should be compelled to study their profession, from the lowest problems in Euclid that may in any way be connected with it, through plane trigonometry, and other more abstruse branches of the science; for, without such a basis, the navigator can never thoroughly *understand*, though he may *know* enough of his profession to enable him, with extra care and

diligence, to navigate his vessel. There is nothing more calculated to improve the general character of our Merchant Marine, than the interest now publicly evinced that each and every one connected with it, should be ranked according to his merits and acquirements; and, as an old commander, I should deeply regret that any obstacle should arise to prevent the rising talent in the service reaping that benefit they deserve, from giving their profession their first and deepest attention, for there are few who, at the commencement of their career, but have both time and opportunity for fitting themselves to fill the highest grades in their profession with honour and respectability to themselves, and credit to their country

If, therefore, you would allow the columns of your valuable paper for a fair discussion of the subject, we, who are so closely connected with the shipping interest, might be able to suggest to our rulers some more moderate scheme; and, at the same time, show that whilst we would mitigate the rigour of examination to some, we would yet urge and stimulate others to press forward in the acquirement of a thorough knowledge of their profession, and show themselves still to be, as navigators, what they have ever been for courage, skill, and daring—the first sailors in the world.

I remain, &c.

Shipping Gazette.

AN OLD CAPTAIN.

QUEEN ADELAIDE'S COLLEGE FOR THE WIDOWS OF OFFICERS OF THE
ROYAL NAVY.

It is with feelings of satisfaction of no ordinary description we have to announce that Her Majesty the Queen Dowager has determined to erect and endow a College, at Penge, in Surrey, for the widows of naval officers. The design is worthy of the illustrious lady, who has endeared herself to the whole British people by her virtues, her piety, and her practical benevolence. The widow of the first naval king could not have done greater honour to his memory, or exhibited a greater proof of her interest in the service of which her late illustrious consort was a distinguished member, than by erecting and endowing an asylum for the widows of officers of the royal navy, whose husbands are more exposed to danger and death than any other class, and who are so especially deserving of the regard of their fellow countrywomen.

The plan was formally brought under the notice of the Lord Mayor and gentlemen who celebrated the eighth anniversary of the Free Watermen and Lightermen's Alms Houses, at the London Tavern, on Saturday evening last. The following extract from the report of the Committee, read by Mr. J. E. Cooper, Hon. Secretary of the Institution, will be read with interest:—“Another object of importance which they bring before their contributors with great pleasure. It is another instance of that munificent benevolence and discriminating charity by which their royal patroness, Queen Adelaide, has so justly endeared herself to the people of this country, and especially to the members of this institution. When she was asked to become the patroness of the Watermen and Lightermen's Asylum, she gave an immediate and cordial assent, adding, ‘that it gave her much pleasure to be in any way connected with a class of persons for whom her late lamented husband, King William IV., felt so deep an interest,’ and most liberally contributed to its funds.

“Since then, she has made a donation towards the intended church, and further, has very recently agreed to purchase a piece of land opposite to it

and near to the Asylum, where it is her intention to erect and endow a college for a certain number of widows of naval officers, thus affording an affecting example of her sympathy for a class of her fellow-creatures, whom the decrees of Providence has placed in a less fortunate position in life than herself, but with whom she does not disdain to identify herself. Charity like this needs no eulogium from the Committee—it carries with it its own praise, and the Committee are certain will meet with the cordial appreciation of every Englishman, who must be proud of such an example, and eager to follow it."

The spot selected for the new asylum, which is to be called "Queen Adelaide's College," is happily chosen. The salubrity of the place, and the beauty of the surrounding country, cannot be exceeded in any part of England. The sum of £30,000 will, it is said, be invested in the erection and endowment of the college for the widows of naval officers. This is a munificent donation of the Queen Dowager, and will be hailed by the service with feelings of heartfelt gratitude.—*Nautical Standard*.

THE Chinese junk, *Keying*, now on her way to England, left China December 6, 1846, arrived at St. Helena, April 17, 1847, has had very light winds nearly the whole voyage, having been at anchor six weeks in the Java Sea and Sunda Straits, with light southerly and south-west winds. Off the Mauritius experienced some very heavy weather on the 22nd and 23rd March; but found her to be a most beautiful sea-boat, and easy, never having shipped a drop of water since leaving China, or leaking. Her masts and rudder were of immense size and weight, being made of iron-wood. Her rudder is hung to three large ropes, and drawn into her stern by two others. Going underneath her bottom and coming over her bows, and when the rudder is down, draws 23 feet, but, when hoisted, only 13 feet. It sometimes takes twenty men to steer her; but, in fine weather, running before the wind, she goes so steadily that the tiller rarely requires to be touched, and then two men can steer her. She is built in compartments, having 15, several of which are water tight; she has a main-deck, raised quarter-deck, two poops, and a raised fore-castle, with a high verandah above that again. Her main-deck is arched. Her anchors are made of wood, and the shanks about 30 feet long; the cables are made of bamboo. the ropes of bamboo, rattan, and Indian grass; she has three water tanks built on her decks; her sails reef themselves by lowering the halyards, can either reef the sail or take it in in a minute; her stern and her bows are open, but she is so very buoyant that she never takes in any water at either end. Her main cabin or saloon is 30 feet long, 25 feet wide, and 12 feet high, painted with various beasts, birds, &c. She has also six small cabins on the first poop, with the joss-house in the centre, in which a light is constantly kept burning. Her stern is 32 feet high out of the water.—*St. Helena Gazette*.

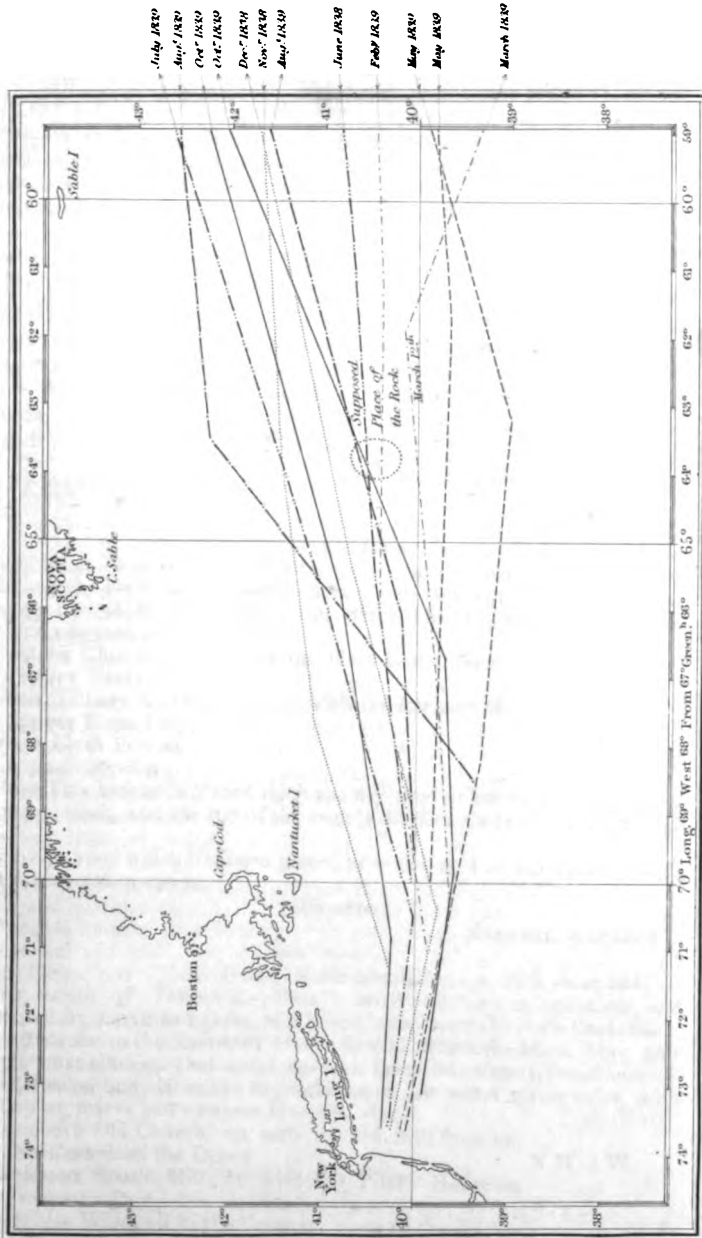
This junk was spoken by the *Flora Kerr* on the 9th April, in lat. 26° S., long. 11° E., and also by the *Urania* on 16th June. in lat. 28° 12' N., long. 61° 59' W., the master of which reported her to be short of every thing, and likely to make for America. Since which, we hear she has arrived safely at New York.

NAUTICAL NOTICES.

REPORTED ROCK IN THE GULF STREAM.

WITH the view of throwing all the light we can on this reported danger alluded to in page 161 of our present volume, (March Number) we lay the following before our readers, with Capt. Fayer's track chart.

TRACKS OF CAPTAIN FAYRER



Engraved by J. K. Walker.

SIR.—Having seen a paragraph in a Bermudian paper, which was taken from a New York one, in which an American commander says, he distinctly saw a rock about 25 to 30 feet above water, and about 300 feet in circumference; I cut the above paragraph out, and presented it to Vice-Admiral Sir Francis Austin, Commander-in-Chief on that station, who has given directions to Her Majesty's ships that may navigate that part of the Gulf Stream, lat. 40° 10' N., 63° 50' W., to look out for it. Herewith, I have the pleasure to send you a small chart, with twelve tracks of the *Liverpool*, (since I left her, called the *Great Liverpool*). If the rock really exists, the *Liverpool* must (as you will observe,) have frequently passed very near to it; and it may be (*if true*,) that the unfortunate *President* and other missing ships, were less fortunate, and on it met their fate. At all events, as the reported danger is in a fair way for New York or from it, and nearly in a direct course from Halifax to Bermuda, great caution should be used whilst in the neighbourhood assigned.

I remain, &c.,

R. J. FAYREB, *Lieut. R.N.*

To the Editor N.M.

Trinity House, London, 25th June, 1847.

BLYTH SAND BEACON.—That this corporation has caused a standing beacon of a Triangular Form, and surmounted by a staff and cage to be placed upon the eastern part of the *Blyth Sand* in the River Thames, with the following marks and compass bearings, viz. :—

Fobbing Church its Width on the West End of Shell Haven Trees	N.N.W. $\frac{3}{4}$ W.
West Tilbury Church, in line with the low part of Lower Hope Point	W.b.N. $\frac{1}{4}$ N.
West Blyth Beacon	W.b.N. $\frac{3}{4}$ N.
Chapman Beacon	E. $\frac{1}{4}$ S

Note.—This beacon is placed upon the dry sand at low water, spring tides, is coloured *black*, and the top of the cage is 36 feet above the level of high water.

The black buoy which has been placed near this spot as a temporary mark has now been taken away.

By order,

J. HERBERT, *Secretary.*

Trinity House House, London, 29th, June, 1847.

CROSS SANDS off *Yarmouth*.—That a large nun buoy, coloured *red*, and surmounted by a staff and globe, has been placed upon the *south* Cross Sand, a short distance to the Eastward of the spot in which the black buoy previously at that station, (but which has now been taken away,) was moored. This red beacon buoy is laid in 12 $\frac{1}{2}$ fathoms, at low water spring tides, with the following marks and compass bearings, viz. :—

Yarmouth Old Church, on with the 3rd Mill from the Northward on the Denes	N.W. $\frac{1}{2}$ W.
Gorleston South Mill, on with the Pilot's House on Gorleston Pier	W. $\frac{1}{2}$ N.
A White Windmill in the Country, open to the Northward of Gorleston Church the length of the Tower	W.b.N.
South Scroby Buoy	S.W.b.W. $\frac{1}{4}$ W.
Middle Cross Sand Buoy	N.E. $\frac{3}{4}$ N.

Notice is also given, that the *middle* Cross Sand having grown up to the Eastward, the black buoy at that station has been moved about two cable's lengths in an Easterly direction, and now lies in 11 fathoms at low water spring tides, with the following marks and compass bearings, viz. :—

The Chancel End of Yarmouth Old Church touching the Vanes of the Northernmost Mill on the Denes	W.b.N. $\frac{1}{2}$ N.
Winterton Light House, midway between Winterton Church and Mr. Hume's House	N.N.W. $\frac{3}{4}$ W.
North Cross Sand Buoy	N.N.E. $\frac{1}{2}$ E.
South Cross Sand Buoy	S.W. $\frac{3}{4}$ S.

By order,

J. HERBERT, *Secretary.*

Trinity House London, 19th July, 1847.

MARGATE SAND.—The Eastern projection of Margate Sand having extended itself to the Eastward,—

Notice is hereby given, that the N.E. spit buoy has been moved about one-half mile E.b.S. $\frac{1}{4}$ S. from its previous position, and now lies in 7 $\frac{1}{2}$ fathoms at low water spring tides, with the following marks and compass bearings, viz. :—

The High Tower of Moro Castle, its width open West of Neptune's Tower, bearing	S. $\frac{1}{4}$ W.
Powell's Belfry, twice its width open West of the Pre- ventive station in Westgate Bay	S.W. $\frac{1}{4}$ W.
North Foreland Light House	S. $\frac{1}{2}$ W.
East Buoy of Margate Sand	S.b.E. Southerly.
North Spit Buoy	W.b.N. $\frac{3}{4}$ N.

Distant about 2 $\frac{1}{2}$ miles.

By order,

J. HERBERT, *Secretary.*

Trinity House, London, 23rd July, 1847.

COCKLE GAT, YARMOUTH.—The changes which have taken place in the Cockle Sands having somewhat increased the width of the navigable channel, called the Cockle Gat.

Notice is hereby given, that the positions of the undermentioned buoys have been altered as follows, viz. :—

The N.E. Cockle Buoy have been moved about 1 $\frac{1}{2}$ cables' length to the Northward, and now lies in 4 fathoms water, with

Winterton Church in line with Mr. Hume's House, bearing	N.W. $\frac{3}{4}$ W.
Yarmouth Church Spire, just open to the Southward of the Beachmen's Look-out, at Caistor	S.S.W. $\frac{3}{4}$ W.
Caistor Church, its width open to the Northward of Caistor Mill	S.W. $\frac{1}{2}$ S.
Cockle Light Vessel	S.S.E. $\frac{1}{2}$ E.
Cockle Spit Buoy	S. $\frac{1}{4}$ W.
Cockle Fairway Buoy	N.N.W. $\frac{1}{2}$ W.

The Cockle Spit Buoy has been moved about a cable's length to the Westward, and now lies in 8 $\frac{1}{2}$ fathoms water, with

The New Church at Yarmouth, in line with the North Mill on the Denes	S.W. $\frac{3}{4}$ S.
Winterton Light House, midway between Mr. Hume's House and Winterton Church	N.W. b.N.

Cockle Light Vessel	E.S.E.
North Scroby Buoy	S.S.E.
S.W. Cockle Buoy	S.S.W. $\frac{1}{2}$ W.
The S.W. Cockle Buoy has been moved $1\frac{1}{2}$ cables length to the N.N.W. and now lies in 5 fathoms, with	
The Turret of Yarmouth Chapel, touching the West Side of the Factory Chimney	S.W. $\frac{3}{4}$ S.
Ormsby Church, three times its apparent length to the Southward of the Ormsby Windmill	W. $\frac{1}{2}$ N.
Martham Church, three times its apparent length to the Southward of Hemsby Church	N.W. $\frac{1}{2}$ W.
Cockle Light Vessel	E $\frac{1}{2}$ N.
North Scroby Buoy	S. E. $\frac{1}{2}$ W.
Outer Barber Buoy	S.S.W. $\frac{1}{2}$ W.

Note.—The foregoing bearings are Magnetic; and the depths, those of low water spring tides.

By order,

J. HERBERT, *Secretary.*

Trinity House, London, 28th July, 1847.

A Notice, of which the following is a copy, having been communicated to this corporation by the Chevalier Don Jose Maria Barrero, Consul-General for Spain, the same is made public by order of this Board, for the general information of Mariners.

J. HERBERT, *Secretary.*

NEW LIGHT APPARATUS IN THE FARO OF LA CORUNA, ON THE COAST OF SPAIN.

On the 4th of June of the present year, was lighted, and will continue to burn in future, the new Cata-dioptic revolving apparatus of the 3rd order, *gran Modelo*, in the place of the former light of the Faro of La Coruna;—it is situated 1 mile N.W. of La Coruna in the same Tower called Hercules, which contained the old one, latitude $43^{\circ} 22' N.$, and longitude $2^{\circ} 14' W.$ of Cadiz; the height of the luminous focus above the sea level at calm of the Equinoctial high tides, is $363\frac{1}{2}$ feet (101 metres). The light is fixed, varied by lustres; the fixed light visible in ordinary weather at the distance of 12 sea miles, and the lustres at 20 miles. Within the 12 miles the Faro will exhibit the following aspects: the fixed light faint for $107''$, eclipse for $39''$, lustre $13''$, eclipse $30''$, the fixed light faint again returning. Beyond 12 miles the lustre only will be seen for the space of some $7''$ duration, a complete eclipse following for 3 minutes, the period in which the revolution is effected when the lustre will again appear as before. The Faro light will burn throughout every night in the year.

Trinity House, London, 12th August, 1847.

LIGHT HOUSE ON TREVOSE HEAD, North West Coast of Cornwall.—The light-house which has been for some time past in course of erection upon Trevoze Head being now far advanced towards completion,—

Notice is hereby given, that in about three months from this date the lights thereat will be first exhibited.

Mariners are to observe that at this station *two fixed bright Dioptric lights* of the first order will be shewn, the lowermost of which will burn at the base of the Tower, and about 50 feet in advance, or to seaward thereof; and their respective elevations above the level of high water will be as follows, viz.—High Light, 204 feet;—Low Light, 129 feet.

Further particulars in relation to this new establishment will be published in due course.

By order,

J. HERBERT, *Secretary.*

NEW SHOAL IN THE SOLENT.—Having, in our last Number, briefly noticed the discovery of a shoal in the Solent by Capt. Sheringham, we are now enabled to give a few more particulars respecting it. It was first thought to have been a rock, but, on a more recent examination, Capt. Sheringham has ascertained it to be a bank of gravel. The shoalest spot, over which there are $23\frac{1}{2}$ feet, lies of the entrance of the Newton River, nearly a mile N.b.E. (mag.) from Hampstead Point; the marks for clearing it are as follows:—

Sand House at Yarmouth on with the Needles Lighthouse, bearing to S.W., clears it on the north side.

Yarmouth Church on with the north shoulder or abrupt fall of Headon Hill, bearing W.b.S. $\frac{1}{4}$ S., clears it on the south side; and

The Sand House at Yarmouth on with the North Tangent of Hill Trees, leads over the shoalest part in $23\frac{1}{2}$ feet.

The discovery of this shoal furnishes another instance of the extreme care which is necessary to the thorough examination of even the most frequented channels, and is a further testimony to Capt. Sheringham's well known skill and accuracy.

NEW BEACON ON THE GOODWIN SANDS.—A new beacon has been erected on the south caliper of the Goodwin Sand, within the last few weeks, by the Hon. Corporation of the Trinity House. It is secured by Dr. Pott's pneumatic foundations, which consist of five cast-iron tubular columns. The centre one is 2 feet 6 inches diameter, and penetrates the sand to the depth of 31 feet 6 inches; four smaller tubes surround it, and are connected laterally and diagonally with the centre column, and with each other by means of wrought-iron rods and clips, secured by screws and wedges. The centre column rises 37 feet 6 inches above the sand, and the cage at the top is 13 feet 6 inches above the cap of the centre column, being connected with the four smaller tubes by iron stays.—*Hants Tel.*

LIGHT ON THE POINT OF BEL-AIR, QUARTER OF ST. SUZANNE, ISLE OF BOURBON.—Navigators are informed, that, from the 15th October, 1846, a fixed light, of the second order, will be lighted during the night, on the summit of the tower recently constructed on the Point of Bel-Air, by $20^{\circ} 53' 11''$ S. lat., and $53^{\circ} 12' 12''$ long., E. of Paris. The light may be seen in clear weather at a distance of eighteen marine miles.

In 1843, two British ships were lost on coral reefs said to be about fourteen or fifteen miles to the south of the island of Rodrigez; Capt. Marshall, of H.M.S. *Isis* was sent to determine the position of these rocks. The report of Capt. Marshall agrees with the hydrographical authorities, namely, that these reefs do not extend beyond five or six miles. Since this report was made, other ships have been wrecked in this quarter, and it appears from the testimony of several commanders of ships, both French and English, that there is good reason to believe, notwithstanding the report of Capt. Marshall, that the reefs actually extend ten or twelve miles. Under these circumstances, mariners cannot exercise too much care and vigilance in passing south of the island.

LIGHTHOUSE ON HARTLEPOOL HEUGH.—Lat. $54^{\circ} 41' 51''$ N, long. $1^{\circ} 10' 19''$ W. of Greenwich. The Commissioners of the pier and port of Hartlepool hereby give notice, that, acting under the sanction of the Corporation of Trinity House, London, they have erected, in connection with the purposes of the said pier, and for the general advantages of the port, a lighthouse on the Heugh, or headland at Hartlepool, in the county of Durham, from which a

fixed white light will be exhibited on the evening of the 1st October 1847, and continued every night from sunset to sunrise. The lighthouse will bear by compass from Souter Point, on the coast of Durham, S. $\frac{1}{2}$ W., distant seventeen sea miles, and from Staiths Old Nab, on the Yorkshire coast, N.W.b.N., distant sixteen and a half sea miles, and will be seen at any place along the coast within these points; and seaward, during clear weather, at a distance of fifteen miles; the light being of the first order, and at an elevation of 84 feet above the level of high water spring tides. There will also be exhibited from the same tower at night, (underneath the principal light,) from half flood to half ebb, a *tidal light*, of a *red* colour, and, during the day, at half flood, a *red ball* will be hoisted on the top of a mast on the tower, where it will remain until half ebb.

The lights will be free of any charges whatever to the trade. The stationary light on the pier head of the old harbour will be shewn as heretofore; but the tide light in connection therewith will, after the 30th September next, be discontinued. The *fixed green light*, which, under the like sanction, has been shewn on each pier of the *west harbour*, from sunset to sunrise, and also the *two red lights* which have been exhibited in one, bearing N.W. as leading *tide-lights*, into the west harbour will be continued as before.

By order,

Hartlepool, Aug. 2, 1847.

W. DAVISON, Clerk.

BEACONS ON THE LAPPEGRUND.—From the beginning of next winter, the Lappegrund, northward of Kronberg Point, will be marked with the following winter beacons, when the present summer beacons are removed in consequence of the ice, viz. :—

1. On the north end, fronting Lappegrund, a beacon with a red staff and red balloon, instead of the present red painted buoy with iron rod and red balloon.
2. On the middle of the east side of Lappegrund, a beacon with red staffs and two brooms, instead of the present black buoy.
3. Fronting the south-east end of Lappegrund, a beacon with a red staff and a broom, instead of the present beacon with a black staff and a broom.
4. Close to the west side of the block-house, a beacon with striped staff and broom, like the one now in use.

Board of Trade and Customs, Copenhagen, July 6th, 1847.

TAMPICO BAR.—We understand that an official communication has been made to Government, that the dangers which were reported to exist on the Bar of Tampico, are rendered nominal, every facility being now introduced for towing vessels in and out of the harbour. It is to be hoped such is the case, as being the means of saving great inconvenience and heavy expense.

It appears that the Mexican Pilots had been in the habit of detaining vessels outside, by asserting the insufficiency of water to cross the bar, but in reality to oblige them to discharge their cargoes in the roadstead at an enormous expense.

Capt. Sullivan, of the *Audax* has kindly favoured us with the following valuable information :—

On the last voyage from Hong-kong to Woosung, the *Audax* was forced by very heavy north-westerly gales to take a course far to the eastward of the usual track. At 6h. 30m. A.M., on the 7th February, an island was discovered not laid down in the charts on board, which appeared larger and higher than Patahecock, the southern island of the Queshans. It was made in lat. 28° 50' N., and long. by chronometer, 128° 20' E. A small islet or

rock was seen from two to three miles N.E. of it, with 70 fathoms all round. They lie between the Hoapin-su and Loochoo Islands.

The *Audax*, on her return, made a passage of 94 hours from Silver Island to Hong-kong.

From the Hong-kong Register.

[There must be some mistake in this position, for the lat. and long. here given, would place the rocks not *between* Hoapin-su and the Loochoo islands, but two degrees due north of the Loochoo group.—Ed. *N.M.*]

H.M. Packet Office, Holyhead, July 24th, 1847.

Notice is hereby given, that henceforward Her Majesty's *Holyhead Mail Steam Packets* will exhibit the following night lights, viz. :—

Mast-head, clear *white* light.

Starboard bow, *green*.

Port bow, *red*.

The only change being from white to green on the starboard bow.

(Signed) C. FRAZER, *Commander.*

A letter from Ningpo of 7th July, printed in the *Overland Register* of May 24th, states, that the schooner, *Young Hebe*, had gone ashore in the bay of Hang-chow-foo. She must have gone on at high water and spring tide, as, at low water, she is high and dry, as are the sands for several miles round her. The *Young Hebe* is a surveying schooner, has been employed in determining the positions of the various dangers on the coast of China, and in examining the approaches to the several commercial ports, access to which was conceded by the late treaty.

PORT JESSIE, CAWOOD'S BAY.—Cape of Good Hope papers of the 29th May mention that an excellent new port, at the mouth of the Klimomontjes, had been discovered on the coast, and named Port Jessie, Cawood's Bay. The landing place is in the centre of a bay, or rather semi-circular indentation. The coaster, *Lady Keith*, had dropped anchor about a mile from the beach in 8 fathoms water, with a firm holding bottom of fine sand, and landed a considerable quantity of goods without difficulty. There were, it is said, good roads from the port to Bathurst and Graham Town. The prosperity of Graham Town and Lower Albany will, no doubt, be greatly improved by the discovery of this seaport on that part of the coast, which is safer and more commodious than that of Waterloo Bay.

Some specimens of fossil coal have been discovered a few miles from the mouth of the Kowie river. The strata around the spot is represented to be of the carboniferous class, while numerous particles of coal had been found in the heaps of debris in the surrounding hollows. Should the hopes which this discovery will give birth to be fulfilled, it will readily be perceived how important to the interests of the colony, and to steam communication there, and with that part of the world, will the discovery prove.

BOTTLE PAPER.

CAMRICEVEN, *Kerry*, June 30.—A slip of paper, containing the following, found in a bottle covered with barnacles, a foot in length, was picked up by one of our fishing-boats on the 27th instant, mid-way between Puffin Island and the Skillegs Rocks, about a mile inside the Lemon Rocks:—"Coast Survey, U. S. brig Washington, July 31, 1846, lat. 37° 39' N., long. 69° 00' W. Any person finding this will please notice the date and position through the papers, as a means of ascertaining the course of the current.

(Signed) GEO. M. BACHE, *Lieut.-Com., Gulf Stream.*

LAW.—Admiralty Court.

Admiralty Court, Thursday.

SALVAGE.—Before Dr. Lushington.—The *Invincible*.—This was a suit by Lieut. Combe, Commander of Coast Guard Battery, No. 2, Folkestone Station, on behalf of himself and boat's crew, and also another boat's crew, belonging to Battery No. 1, to recover salvage for services rendered to the *Invincible* on 12th December last, off Dungeness. The *Invincible* was in ballast, proceeding from Gravesend to St. Ives, when she went on shore, in a snow storm, on the east bay of Dungeness, the wind blowing hard on the shore. She lay between two sunk wrecked vessels, and when in that situation Lieut. Combe and his men proceeded on board through the surf, and helped to lay out an anchor and to regain it. The value of the ship was £1,396., and a tender was made of £50. The Court was of opinion that the tender was not sufficient, and awarded £150.

The *James*.—This was a suit for services rendered to the brig *James*, coal laden, bound to Southampton, off Lowestoft, on the 20th March last. The vessel was in a leaky condition, and the salvors assisted in pumping. A tender had been made of £50., and the Court awarded an additional £25.

The *Letitia*.—This was a suit by the masters, owners, and crew, of two fishing luggers, for services rendered to this vessel, which was water-logged on 1st March last, on her voyage from Hamburg to Hull, and was ultimately brought into the Humber by the salvors. The Court awarded £320.

The *Tamar*.—This was a suit by the owners of two smacks belonging to Dover. The vessel was derelict, and safely brought by the salvors into Ramsgate Harbour. The value was £1,365., from which it was sought to make a deduction of £55., for the claim of the receiver of the droits of the Admiralty. The Court decided that the claims of the receiver of the droits could not be taken into account, and awarded the salvors £365.

Mr. Hall, the owner of the ship *Diamond*, appeared before Mr. Yardley to answer the summons of B. P. Harris, a boy, for £7. 3s. 6d., for services on board that ship during a voyage from London to Ceylon, and other places. The articles were signed at Gravesend, and the boy was to receive 10s. a month. The defence was, that the master of the ship being the boy's uncle,

some fraud was intended, as the ship was fully manned before the boy entered. The master had died during the voyage. Notwithstanding the case might admit of suspicion, yet, in the absence of evidence to substantiate the charge of the boy being accessory with the master to defraud the owners, and Mr. Yardley intimating that owners became responsible for the acts of their masters, so far as the ship's expenses were concerned, Mr. Hall immediately paid the amount claimed.—*Nautical Standard*.

COMPOSITION FOR SHIP'S BOTTOMS.—There is just now a dispute respecting the priority of claim to the application of a composition to ship's bottoms said by some to be Mr. Hay's invention, and by others that the credit is due to Mr. Kemp. The *Times* says:—Mr. Hay has at present no patent for his invention, which differs very materially from that of Mr. Kemp, as decided by a committee of scientific officers, who sat in February last to decide that knotty point, comprising Mr. Fincham, Master-Shipwright of Portsmouth Dockyard; Com. Crispin, of the Royal Yachts; Mr. Lloyd, Chief Engineer of Woolwich Dockyard; and Mr. Jeremiah Owen, Chief Metallurgist of Chatham Dockyard. Added to this, Mr. Hay's invention was tried upon the rocket, in Portsmouth Dockyard, nearly two years before Mr. Kemp brings his invention before the notice of the Admiralty, as he will find on referring to the naval column of the *Times* of the 9th of June, 1845, and subsequently. This would seem to settle the question.

NEW BOOKS.

GEOGRAPHICAL PROGRESS OF EMPIRE AND CIVILIZATION. Longman & Co.

An interesting little pamphlet from the pen of the Rev. T. Price, with diagrams, illustrating the tracks of geographical civilization and the formation of empires and kingdoms from their earliest records. The Rev. author has grounded his opinions on established facts, apparently collected from Scripture and profane history, giving the comparative rate at which civilization, and the establishment and fall of empires, has travelled during a space of 4,000 years; progressing from Babylon in a curvular north-westerly direction, and terminating at our own country. The work possesses much interest, and we recommend it to the perusal of all class of readers.

NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

PLYMOUTH SOUND. Corrected to 1847. Price 2s. 6d.
 ENGLAND, WEST COAST. Sheets 5, 6, and 7, corrected to 1847. Each 2s.
 PORTREE HARBOUR, (Isle of Skye,) Scotland. Com. Otter, 1847. Price 1s.
 SCOTLAND, East Coast. Sheet 4. Coms. Slater and Otter, 1845. Price 3s.
 IRELAND, East Coast. Sheet 17. Com. Frazer, 1844. Price 2s.
 Do. do. Sheet 18. Corrected to 1847. Price 2s.
 ARCHIPELAGO. Sheet 1. Coms. Copeland and Graves, R.N., 1828 and 1844.
 Price 2s.
 ARCHIPELAGO, GAVRION BAY. Capt. Graves, R.N., 1842, Price 1s.

PROMOTIONS AND APPOINTMENTS.

The Right Hon. George Earl of Auckland, GCB., Vice Adm. Sir C. Adams, KCB., Rear-Adm. J. W. D. Dundas, CB., MP., Capt. M. F. Berkeley, CB., MP., (1814), Capt Right Hon Lord J. Hay, CB., (1818), the Hon. W. F. Cowper, MP., *Gazetted* as Lords Commissioners of the Admiralty, July 24, 1846, H. G. Ward, Esq., MP., First Secretary, Capt. W. A. B. Hamilton (1828), Second Secretary, Capt. H. Eden (1827), Private Secretary to the First Lord.

Admiralty, Aug. 6.

The following promotions have this day taken place, consequent upon the death of Vice-Admiral Bendall Robert Littlehales:—

Vice-Adm. of the White James Carthew to be Vice-Adm. of the Red.

Vice-Adm. of the Blue Christopher John Williams Nesham to be Vice-Adm. of the White.

Rear-Adm. of the Red Sir Hugh Pigot, Kt., KCB., KCH., to be Vice-Adm. of the Red.

Rear-Adm. of the White Hon. George Poulett to be Rear-Adm. of the Red.

Rear-Adm. of the Blue James Murray Gordon to be Rear-Adm. of the White.

Capt. Edward Henry A'Court to be Rear-Adm. of the Blue.

PROMOTIONS.

CAPTAINS.—G. Broun (1825)—W. J. C. Clifford (1842).

COMMANDER.—George Harper (1837).

APPOINTMENTS.

LIEUTENANT—Price to be Flag-Lieut. to Adm. Sir Lucius Curtis.

MATE—F. Lambert to *Ocean*.

MIDSHIPMAN—Hugh Hawthorn to *San Josef*.

NAVAL CADET—F. C. Baldwin to *Cambrian*.

PAYMASTERS AND PURSERS.—Henry South to *Birkenhead* steam-sloop.

CHIEF ENGINEERS—E. Casey to the *William and Mary*—C. Hobes to *Tartarus*—G. Weeks to *Ocean*—W. A. Dinnen to *Shearwater*—H. W. White to *Scourge*—J. Neil to *Geysier*.

THIRD CLASS ENGINEERS—J. Kent to *Medea*—H. B. Webb to *Black Eagle*.

THIRD CLASS ASSISTANT ENGINEERS. R. M'Clatsie to *Prospero*—J. Dooney to *William and Mary*—E. Powell to *Ceylon*.

ASSISTANT ENGINEERS—A Fitzgerald to *Dee*—G. Rose to *William and Mary*.

MARRIAGES AND DEATHS.

Marriages.

July 26, at Budock, Francis P. Pender, Esq., to Kate, daughter of the late Capt. C. W. Griffin, RN.

Aug. 2, at St. Stephen's near Saltash, T. R. Hearle, Esq., Solicitor, Redruth, Cornwall, to H. F. youngest daughter of Lieut. Neapen, H.M.S. *Caledonia*.

Aug. 5, at St. George's, Bloomsbury, Capt. Wm. R. Suckling, RN., of Highwood Lodge, Hants, to Caroline Loaden, second daughter of the late W. Loaden, Esq. of Rose Hill, near Biddeford, Devon.

Aug. 11, at Saint Colomb Major Church, Cornwall, the Rev. Henry Lascelles Jenner, to Mary Isabel, eldest daughter of Capt. W. Finlaison, RN.

Deaths.

At Frankfort-on-the-Main, a few days since, Sir J. Hamet, surgeon, RN., and Deputy-Inspector of Hospitals.

On Monday the 16th inst., at Anglesea Villa, Maria Fanny, second daughter of Admiral Prevost.

On the 16th inst., at Devonport, Eveline Charlotte, the infant daughter of Com. Chamberlain, of H.M.S. *Britomart*.

On the 16th inst. at No. 18 Cavendish Square, Sophia Renira Maria Catharine Hawkins Whitshed, eldest daughter of Sir James Whitshed, Bart. Adm. of the Fleet.

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stubbington, near Farcham,
Hants.— August, 1847.

Day of Month	A. M.												P. M.											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	NE																							
2																								
3																								
4						SE																		
5		10	12	12	10	10	10	5																
6													WSW											
7			10	12	10	12	10	14	10	5	12													
8	10	12	10	12	11																			
9								15	17	17	15	12	10								12	15	12	10
10	12	10	12	11																				
11																								
12																								
13					WSW																			
14																								
15										SSW														
16																								
17		NE							12	17	10	10	10	10	5	5	5	5	5	5	5	5	5	5
18	6	5	3	3	3	5	5	12	10	10		ENE												
19																								
21					WSW			12	12	22	20	20	17	17	15	15	12	12	10	10	10	10	10	10
22	10	10	15	17	17	12	17	17	17	20	15	10	15	12	12	15	12	10	5					
23		N																						
24				NNE																				
25						ENE			10	11	11	11	11	12	17	10	5							
26				NNE					4	4	4	5												
27	N											NNW	5							NE				

28	WSW	NW	15	15	12	12	12	15	15	10	5	5	5	
29								5	4	4				
30			10	10	10	12	12	12	13	14	5			
31							4	12	15	12	10	10		

TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—AUGUST, 1847.

A.M.	1	2	3	4	5	6	7	8	9	10	11	12
190516	.0516	.0516	.0516	.0516	.	.	.	.
210172	.043	.043	.043	.043	.	.	.	.
240172	.0086	.0172	.0172	.0258	.	.	.	.
970086	.0086
Total086	.1032	.1118	.1118	.1204	.	.	.0086	.0086
P.M.	7	.	.	.	.	.	.0602	.0602	.0602	.0602	.	.
Total0602	.0602	.0602	.0602	.	.

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—AUGUST, 1847.

Miles	N	NNE	NE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	121	21	181	133	.	.	105	.	69	.	.	768	.	918	.
No. of hours }	9	4	26	13	.	.	10	.	7	.	.	66	.	17	.
Velo } pr hr. }	13	5	8	10	.	.	10	.	9	.	.	10	.	12	.
Amt. } Rain, }	0172	.122	.	.258	.	.	.	.	.	.	.	.268	.	.	.

Considering from 6 A.M. to 6 P.M. *day*, and from 6 P.M. to 6 A.M. *night* we have 1143 miles the amount of wind during the *day*, and 437 during the *night*. .362 inches the amount of rain during the *day*, and .258 during the *night*. Total wind 1580 miles, rain .62 inches. The greatest amount of rain was from W.S.W. and E.N.E. The number of hours during which the rain fell was 21; and the number of hours during which the amount of wind is recorded is 163 during 581 hours it was calm.

WRECKS OF BRITISH SHIPPING.

(Continued from page 324—cs crew saved, cd crew drowned.)

Ship's Name.	Belong to.	Masters.	From.	To.	Where.	When
Boadlea	142	London	N. York	Quebec	Yarmouth	June 14 cs
Emerald		Margesso	Boston	Cornwallis	Gt. Duck Is.	June 11 cs
Elizabeth Lloyd			Mansanilla	Quebec	Carysfort R.	June 12 cs
Jane	145	Yarmouth			Hasbro Sand	July 1 ld
Junius		Emigrant	Havre	N. York	Long Island	July 9 1d
Matthew Pearce		White	St. Thomas		Pinto Real	April 27 cs
Mary Oliver		Shores	Philadelpa	Cork	C. Henlopen	May 13 cs
Marq Landelowne		Watt	Shields	Cadiz	Goodwin Sd.	July 10 2s
Williams		Carrill	Welch		Ushant	cs

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory,
From the 21st of July, to the 20th of August, 1847.

Month	Day	Barometer In Inches and Decimals.		Fahrenheit Thermometer In the Shade.				Wind.				Weather.			
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	Quarter.		Strength.		A.M.	P.M.		
								A.M.	P.M.	A.M.	P.M.				
21	W.	29.93	29.96	64	73	61	75	SW	SW	2	1				
22	Th.	30.10	30.14	65	70	60	72	SW	W	3	3	o		bc	
23	F.	30.27	30.27	62	68	50	70	NW	NW	2	4	op 2		b	
24	S.	30.18	30.12	62	72	49	73	NW	NE	1	2	bcm		bc	
25	Su.	29.97	29.93	64	68	53	69	NE	E	4	4	o		bc	
26	M.	29.95	29.99	62	70	51	71	N	N	4	3	bc		bc	
27	Tu.	30.11	30.09	64	76	51	77	N	NW	3	4	bc		bc	
28	W.	30.09	30.10	66	74	53	75	W	W	4	4	bcm		bcm	
29	Th.	30.11	30.11	68	79	55	80	NW	NW	2	2	bcm		bc	
30	F.	30.07	30.03	72	76	55	77	S	SW	2	1	o		bc	
31	S.	30.09	30.09	64	78	57	79	NW	NW	2	2	bc		bc	
1	Su.	30.09	30.05	67	84	57	84	W	S	1	1	b		b	
2	M.	29.91	29.89	66	82	58	82	SW	N	2	2	b		bc	
3	Tu.	30.05	30.04	61	70	53	73	N	N	3	2	b		bc	
4	W.	29.96	29.76	64	70	49	72	SW	SW	3	3	bc		bc	
5	Th.	29.67	29.63	66	71	63	72	SW	SW	2	4	bc		otr 3 4	
6	F.	29.53	29.62	59	68	55	70	N	N	4	2	o		o	
7	S.	29.80	29.77	63	73	53	74	SW	SW	3	4	bc		bc	
8	Su.	29.77	29.73	60	60	54	73	SW	SW	2	2	bc		bc	
9	M.	29.77	29.81	58	63	50	64	W	W	3	3	o		o	
10	Tu.	29.90	29.92	57	62	48	64	SW	SW	3	4	op 2		bc	
11	W.	30.10	30.14	63	74	55	75	SW	SW	3	4	bc		bc	
12	Th.	30.16	30.14	71	79	64	81	S	S	4	3	bc		bc	
13	F.	30.25	30.27	67	74	61	75	N	E	5	3	o		b	
14	S.	30.37	30.35	64	73	52	74	NE	NE	4	4	bc		bc	
15	Su.	30.28	30.24	66	74	56	76	NE	NE	4	4	o		bc	
16	M.	30.14	30.10	59	66	57	67	N	NE	2	2	or		ori 4	
17	Tu.	30.10	30.10	63	69	60	70	N	N	1	1	o		o	
18	W.	30.15	30.17	63	69	62	70	N	N	1	1	o		og	
19	Th.	30.18	30.14	65	65	62	66	N	NE	4	2	o		op 3	
20	F.	30.03	29.97	62	66	57	69	NE	NE	1	1	o		bc	

July, 1847.—Mean height of the Barometer = 30.095 inches; Mean temperature = 65.8
degrees; depth of rain fallen = 0.71 inch.

TO OUR CORRESPONDENTS.

We have received Mr. BURNETT's communication.

Hunt, Printer, 3, New Church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

OCTOBER, 1847.

A CHEAP, SIMPLE, AND CERTAIN METHOD OF OBTAINING EARLY WARNING OF ANY APPROACH TO SPONTANEOUS COMBUSTION, OR IGNITION BY ACCIDENT ON BOARD OF STEAMERS, COAL OR OTHER SHIPS, and of instantly conveying water nearly to the spot; with some Chemical Notes and practical deductions for the use of Sailors.—By Henry Piddington.

We have received by steam mail from India, a pamphlet, by Mr. H. Piddington, printed at Calcutta, for the use of H.M. Admiralty, with permission to reprint it; and this we lose no time in doing, for its subject is one of much importance. "The obtaining of timely warning of the Spontaneous Combustion of Coal or other Cargoes, and the conveying of water instantly almost to the spot, with some chemical notes for the use of sailors;"* we should, even had we received it late, have displaced other matter to make room for this very simple, and we will say, therefore, admirable plan; to which we invite the attention of our readers, and of every friend of humanity; and we trust it will not be long before we see steamers advertise as being fitted with "Piddington's Safety Pipes," as they now do as being fitted with water-tight compartments.

Let us take an actual case to show the simplicity and utility of the plan, and this as a clear one shall be that of the *Experiment* steamer, † which was destroyed about four or five months ago, on her voyage from Sunderland to London, with a cargo of coals and glass off Aldborough. Now, we take it, that as usual her coal was shot on board at Sunderland,

* We give the title at length at the head of the article.

† Among the List of Wrecks, p. 324, June Number.

the glass packages shipped, and her passengers taken on board in the course of three or four days, by which time she was on her voyage out of the Wear. If she had had pipes fitted, the water must have been "smoking hot," by the time she was off Flamborough Head, and *boiling!* 'ere she was past the Humber. She had only to adopt the plan pointed out by Mr. Piddington, of sending water down the nearest pipes, and steam into the Humber as fast as she could, and all the property might have been saved; but the first notice now obtained is the smoke of the fire, which is often too extensive to afford even a hope of quenching it, and the danger of opening the hatches is also a frightful one.

We doubt not but that this matter will be taken up as it deserves, and experiments set on foot on a proper scale to settle the points which are shewn to be uncertain, and yet so necessary to be known; and for our parts we shall hold every Steam Navigation Company to be most culpably careless of their own interests, and of the lives and property entrusted to them, if they do not join heart and hand to forward the enquiry.

Of the pamphlet itself our readers will judge. To us it appears to be worthy the consideration of all owners and masters of vessels, and we are authorized to state that, the author will be very glad to receive copies of any reports resulting from the means laid down for ascertaining the approach of spontaneous combustion, and the conclusions arrived at, so far as his plan succeeds.

PART I.

"This plan I long ago published in the *Calcutta Englishman*, and it was copied by Capt. C. Biden, Master Attendant of Madras, in a paper on spontaneous combustion in 1844, to which I cannot now refer. I am induced to place it in a somewhat improved form before H.M. Government, from observing, that H.M. Ships *Shearwater* and *Tortoise*, have both narrowly escaped destruction; and recently we have intelligence of the dreadful catastrophe of the *Grana Uile* steamer, by the ignition of her coal.

"2. And further, while these accidents occur, it would seem with the best English coal, and even with coal not apparently pyritous,* they will of course be much more liable to occur with ordinary coal on foreign stations; and, apart from the sacrifice of life and property, most serious public mischief might arise, if the coals of an expedition (in the China Sea, for instance, obtained from Laboan,) were to fail at a critical moment.

"The plan I offer is simply this:—

"3. Let every steamer and coal-laden vessel be fitted with a few

* I say "*not apparently*," speaking of course, as to sailors and officers generally, who if they do not *see* the pure pyrites in glittering particles, do not (even if they know the danger from such coal) suspect, that the "brassy coal," or greenish looking kinds, or that kind which has its pyrites half decomposed may be very dangerous. See Part II. for remarks.

cast iron pipes running from the deck to the keel, and to the ribs where not placed amidships.

"These pipes should be water-tight, closed at the bottom, and opening funnel-shaped at the top, where they should be protected from rubbish by a stout wire-grated cover.

"4. Let them (old water pipes of two or three inches diameter in the bore will do) be constantly kept full of water. The moment any heating goes on in the coals or other combustible cargo, it is clear the pipe and water must heat also, and the finger alone would give full information. The water indeed would begin to give out vapour long before the heat of the hold rose to 212° , the boiling point of water, and it must probably be at 400° or 600° before ignition takes place.

"5. Every stanchion would afford a place for a pipe close to it without encumbering the hold, if that could be objected to for such an object, and as many more might be put down as thought needful. If pipes were cast in a ribbed form they would be as strong as stanchions, and might both serve in part as such, strengthen the vessel, and not be liable to get out of order by blows. In iron steamers every stanchion may be tubed, and made to embrace the beam by a hollow arm which might be brought up through the deck.

"6. Pipes may of course be placed diagonally, and by flanges horizontally. Temporary ones may be made of thick sheet iron, but these would not be long water-tight, and be liable to be crushed in the rough work of coaling, and by the pressure of cargo.

"7. The pipes should as regularly be tried by the thermometer as the well is sounded, and this should, I suggest, be done by a junior officer, and duly entered in the log. If temporary or damaged pipes are used the thermometer must be let down by a wire, and allowed to remain at the bottom and middle for some minutes. If the pipe holds water, the hottest of it will come immediately to the top. If it contains only air, a little more time and care will be required, though as soon as the heat is considerable there will be a little current of hot air up the sides, and a downward one of cold air in the middle. It is clear that by this system we should always know the state of the hold, say for every distance of 5, 10, or 15 feet over it, according to the number of pipes we have placed, and that with such a simple method of knowing this we ought no more to hear (for men-of-war at least) of spontaneous combustion to any dangerous extent, than of sinking from a leak without early warning; and a commander would be justly liable to be brought to trial and punished for a spontaneous combustion without instant efforts to check the first heating, as for allowing his vessel to become waterlogged through neglect of the well.

"8. The heat of the hold itself in tropical climates may be from 95° to 100° , but above this heat it must be carefully watched. We can suppose, and indeed there is no doubt on chemical grounds, that whenever the pyrites of the coal are decomposed heat is evolved, but it by no means follows that there will be a sufficient amount of heat, or that this heat should be sufficiently concentrated in any one part of the coal to occasion

ignition. We can all understand that if the heat dispersed over a block of coal of 20 feet cube, or 8,000 solid feet, was concentrated in 1000 or 500 solid feet, the chances of ignition are much greater, and this we shall see may occur in a cargo of very pure coal from a few loads of bad coals heaped together. Hence the more pipes the greater safety.

“The danger, it should always be recollected, will much more probably arise from coal which has been wet, or exposed long to damp weather, than with dry coal; and again with *new* coal than from that which has been long exposed to air, say a year or more, when the decomposition may have gone on in the open air, and the heat have been carried off as generated. I do not mean here to say that the decomposition of the pyrites is the sole cause of spontaneous combustion, but we are at present ignorant of any other having occasioned it in coal. I shall show directly that there are others, though we cannot yet tell what their effects are, or if they may only be auxiliary to the principal cause which is doubtless the pyrites.

“10. To convey water.

“This is simply accomplished by making the upper part of every pipe of brass, and somewhat larger, and boring it full of holes. Over the pipe is placed a cap or sliding joint with corresponding holes, which, when slewed round to a stop, allows the water to escape, but when turned back is tight. If any heating takes place to an extent to indicate danger, the head of the pipe should be slewed round to the stop, the hose of the fire-engine, or from a pump, should be put to the funnel-shaped mouth, and a good stream of water sent down it and all the nearest pipes. They will be like the roses of so many firemen’s pipes playing on the spot, and the ship’s pumps being worked will quickly tell the rest of the tale by pumping up *hot water*: for hot it must be if it passes over heated or ignited coal.

“11. That there will be many details in these views susceptible of improvement in the hands of intelligent officers, engineers, and shipwrights, I doubt not;* but I think the principle clear and simple. Every man who has helped to make a hay-stack with a ‘chimney’ in it, can suppose how many thousands of tons of hay are annually saved from destruction by them;† and all I am proposing is, a sufficiency of chimneys of another sort. I do not yet venture to propose a set of *open* chimneys, or of divisions or wings in coal ships, by which the coal may have its heat carried off like that of the hay in stacks; for we are inclined to believe, that the access of air favours the first combustion, as it is indispensable to its progress when begun, and coal certainly ignites at times in very small bulks. Nevertheless, it is matter for consideration, (but not to be ventured on without experiments on shore, which I shall

* One now occurs to me, a flanged opening at the bottom of the pipes or hollow stanchions to clean out dirt, &c. from time to time.

† I recollect hearing one of the men on my father’s farm argue stoutly while making a stack that chimneys were useless, for he had seen a stack burnt that had one. When questioned, however, he allowed that, in a stack four times as large as ours there was but *one* chimney.

indicate,) whether this might not be adopted: for the cases of spontaneous combustion in coal laying at the dealers' and contractors' wharves and yards are, I think very rare? though they are there in vast heaps of dozens of cargoes together. The heating, no doubt, goes on, but the caloric is carried off before it can be concentrated, and the worst which occurs is, that the coal falls to dust by continued splitting. It is evident that most of what has here been said of coal is applicable to cargoes of all kinds, such as hemp, cotton, &c., and even to stores, public or private, of any kind on shore liable to heat and spoil. A tube will always tell what is going on in, and near, the part where it is placed, and by elbows and flanges may be brought into the captain's cabin, or the superintendent's house, if desired.

PART II.

“ Some Chemical Notes on the Spontaneous Combustion of Coal, and practical deductions from them, for the use of Sailors.

“ 12. Chemists know as yet but of two, or at most three causes, which may induce spontaneous combustion of coal.

“ *The first*, is the presence of inflammable gases within the cells and layers of the coal.

“ *The second*, changes arising in the bituminous matter, or in the substance of the coal itself at high temperatures, and when it has been exposed to air: this seems to occur with charcoal under some conditions.

“ *The third*, and most common, and that which has usually occurred (as well as that with which they are best acquainted, and can account for and imitate) is the decomposition of pyrites.

“ 13. The two first causes are obscure, and no farther known to the sailor than by the presence of inflammable gas,* or foul air in the coal bunkers. I pass them over then with a notice only, and come to the pyrites.

“ 14. If a few pinches of sulphur and iron filings be mixed together and heated in a tobacco pipe in the fire, they will quickly form a dark greenish black, cindry, or solid mass, which, when broken, will shew sometimes a brassy looking fracture in the sun-light. Every sailor can do this at the armourer's forge; and, when he has done it, he has made one kind of the iron pyrites, or sulphuret of iron which is found in coal.

“ 15. This is the artificial pyrites. The purest natural kind is the bright golden-looking substance in cubical crystals, or in leaves like gold leaf, sometimes to be seen in coal; but it is naturally found of all colours almost, from bright gold and white to brassy, greenish, liver-coloured, brown, and black, so that colour is not always a warning, for some coal is highly pyritous without the gold coloured kind being seen in it, or at most in small quantities. Chemically speaking, the gold coloured and dark coloured pyrites are different, the first containing more sulphur, but this is not material to our present purpose.

“ 16. The purest gold coloured kind is a simple compound of about

* From which, explosions I think, have occurred.

48 per cent. of iron and 52 per cent. of sulphur. Most pyrites (those of copper and the metals as well) by exposure to damp air decompose and *change*, for they do not separate as sulphur and iron, but the sulphur becomes sulphuric acid which combines again with the iron, and the pyrites are changed into sulphate of iron, in the form of white crystals, like snow or salt, which are often seen on coal. Sulphate of iron is the common green copperas of our shops. At the alum works the iron pyrites of clays and shales are decomposed purposely, and the sulphate of iron then dissolved with aluminous earth to form common alum. If the seaman will take a few handfuls of any damp or saltish looking coal and throw them into a bucket with a little fresh water, just covering the coal, and shake this up a little, he will taste the copperas in it. If he puts this water in a plate in the sun he will obtain greenish white crystals of copperas when it dries, and if he mixes a little of the water with some tea, or gall-nuts in powder, he will have a very good ink from the gallic acid of the tea and the iron of the copperas.

"17. In all these decompositions and changes considerable heat is generated, and I have ascertained that the sulphate of iron also, even when in ink, in contact with vegetable matter, will sometimes again decompose and leave the sulphuric acid so free that it will reduce paper to charcoal. Sulphuric and sulphurous acids are also formed in the decompositions and *changes* of pyrites.

"18. Hence the sailor will see that pyrites exposes him to danger from two kinds of changes; the first from their change into copperas, the second from the copperas itself decomposing and leaving strong sulphuric acid to act upon the bituminous matter and carbon (coke) of the coal. Which of these, or whether both, produce the combustion, we cannot say. The practical fact to be remembered is that they both *can* do so.

"19. Now in mines of the best coal not only does the coal from different seams vary, but often in working a very fine seam portions are met with which are highly pyritous in composition, though only appearing 'a little *brassy* or so.' The miner, of course, digs it all out, and it is not kept apart, and often, being loaded and shipped off at once, the bulk of it reaches a ship or steamer together, and is pretty well in a heap or layer amongst the rest. Now this is a case in which the mischief is concentrated in one part, and accounts in one way for why a vessel, taking all her coal from one collier, or one contractor's heap, has the fire break out on board in one bunker, or on one side of the hold, while the same coal has not heated on the other! As to bad coal we need say nothing of it. What I have said above is to put the sailor on his guard even with good coal.

"20. But the sailor at home, we will say, must take the coal as the Navy Yard, the contractor, or merchant gives it. He cannot wait to choose, or to object, when he has but a few hours for coaling, or a few days for loading; and, indeed, would often be very wrong if he did object, for capital coal for his engines may yet be very dangerous coal if too fresh or wetted, or mixed with a little bad. On many foreign stations there is no choice: all coal is coal there.

"21. Practically, then, what I should recommend and order if I had authority in a steamer would be something like the following

RULES.

"a. All coal should be contracted or bargained for (wherever time and circumstances will allow) to be delivered perfectly dry, and to the satisfaction of the officer commanding the ship or steamer. There is no doubt that where coal is sold by weight it is often purposely wetted before delivery, and that on many foreign stations, as well as at home, coal is exposed to the rain, &c., though the loss from its crumbling to pieces is very great.

"b. When coal reaches the ship it should be carefully examined, and it should be noted if wet with fresh or salt water.*

"c. An officer should be charged to examine and report upon the coal as received on board, and if very pyritous or brassy, or decomposing, with whitish salt about it, such coal should, if possible, be kept apart, or it should be noted whereabouts stowed, whether in a ship or steamer, and if possible it should be used first.

"d. If there is a choice and time, all highly pyritous and wetted coals should be rejected. The pyritous coal is sure to do one mischief, which is by the sulphur subliming, when burning, to wear the bottoms of the boilers very fast.

"e. Whenever a steamer coals, a report and remarks should be made, independantly, both by the officer in charge of that duty, and the engineer as to the quality of the coal; not as fuel, but as relating to its pyritous or brassy, or decomposing, or wet or dry condition, as far as they can judge. If serious heating or fire occurs, this record will not only be a warning, but an evidence that due attention was paid from the first. I once had a lot of English coal from a ship in the river Hooghly in such a decomposing state, and many blocks of which were still so glittering with pyrites, that I deemed it a duty to write in the strongest terms to the owners of the ship, pointing out the danger to which their coal-merchant had exposed them. They did not take the trouble to acknowledge the letter, if it reached them!

"21. I know that coaling is often hasty work, and night work to boot, and I do not mean to say that all these rules and hints can be always followed.

"Nevertheless some of them may: It must always be useful for every officer, sailor, and engineer to know all I have here set down, for next to blowing up, the mischief is the most dreadful we can conceive; and there is no doubt in my mind that very many vessels are far more deeply endangered than is supposed. All I desire to do is to substitute

* It is said that a coal-laden vessel was recently burnt at Aden from the Master's having wetted his coal with salt water to increase the weight; and I have heard it said, that coal wetted with salt water is more dangerous. As a new set of chemical actions would go on between the salt water and the pyrites and copperas, this may not be improbable.

good management for good luck. It was, I think, in 1803, that H.M.S. *Ajax* was burnt in the Mediterranean by her coals igniting. A single pipe, such as I propose, would have probably saved her; and her cost might have furnished the whole Navy, Ships of War, Store Ships, and Steamers, with pipes, to the end of the present century. The *Madagascar*, East India Company's Steamer, is said to have been burned by the spontaneous ignition of her coal, (from Tenasserim,) during the war in China. Her cost also, and I put all other considerations aside, would pay for pipes for the whole Indian Navy to the end of the century.

"22. But we do not yet know to what degree various kinds of coal will heat when fresh or old; wet or dry; with salt water or with fresh; and it may be necessary to indicate a few experiments, out of the results of which every intelligent officer and chemist will see others arise, to settle which further experiments will be easy to devise, and I trust the national importance of the subject will serve as an excuse if I am thought prolix.

"What is the first to be ascertained of coals of various qualities is—

"a. If dry coal, fresh from the mines, as landed from a collier, undergoes any process of *gradual* heating in heaps, and to what degree of the thermometer before it cools again? Is there also a heating point such as chemists know to occur in many cases, and when does this take place? for it probably marks the most dangerous time.

"b. If wetted with fresh or salt water, what is the result?

"c. The above also of coal of various ages.

"d. All these experiments to be made in the open air, and *at the same time* in a hulk or old steamer, to be fitted with a few pipes, and to receive the same coal as for a voyage. The experiments should be made in the height of summer, to be as near to the effect of tropical temperatures also as we can attain. The bulk of coal on the hulk not to exceed that of a large steamer's bunker, or of as much of the hold as a store ship would have filled up on her voyage out.

"e. These experiments should be repeated with the most brassy and pyritous coal to be found, fresh.

"f. With the same also a little decomposed, and again when highly so, for steamers must so often take what they can get as coal, that it would be folly to talk of choice.

"23. The Sailor should not suppose by any means that, when heating goes on in coal, it goes on at any *regular* rate so as to heat at equal rates in equal times. On the contrary, the probabilities are that, particularly beyond a certain point, it augments with excessive rapidity. Thus we may suppose a steamer bound to the West Indies to coal at Devonport, and that the temperature of the pipes for the first day or two is 70°. In five days more it may have risen to 90° or 100°; but it may not require twenty-four hours to rise to 212° the boiling point of water, and but twelve more to be at igniting heat, or not far from it.

"24. It is clear that nothing is easier than to apply this plan to coal in heaps on shore, whether in the air, or under sheds, and if orders were given for exact registry in large stores of coal, we might obtain some

useful data as to the heating and cooling of new and old coal, (for it is most probable all coal undergoes a slight heating process at some period if kept long enough,) and as to the *heating point* alluded to above.

“The most familiar examples I can adduce for the sailor of this *heating point* are, the slaking of lime or the mixture of sulphuric acid and water. If he will put a little unslaked lime into a tea cup and sprinkle it with a little water he will find it swell, split, and fall to pieces, much as coal may do, and the cup will be far too hot for him to hold in his hand, after which it will gradually cool: this is an instance of great heat produced by a *change* in the lime, it has *combined* with the water and become another substance, which chemists call hydrate of lime.

“If strong sulphuric acid be poured in a cup, and a double or treble quantity of water be added, great heat will be also developed, but slowly, unless the mixture be stirred, when it instantly heats to a great degree. This is heat produced by *mixture* only, for there is no change. Now what takes place with the lime and the sulphuric acid in a few minutes may happen to coal in hours or days.

“25. Every person acquainted with physics and mechanics will understand that nothing is more easy than to convert tubes of water exposed to gradual heating, into gauges or alarums, which would be self-acting and self-registering, either by means of the water itself or with mercurial gauges, &c.

“But there are many objections to any thing of this kind on board of a ship or steamer, which will occur to every one, and not the least of them, to my mind, is the habitual carelessness which they induce, while the constant taking of the temperature of the pipes and entry of it in the log would keep the attention of all on board more or less directed to this, as it is always in some degree to the ship's tightness or leakiness by the attention paid to the well. On shore it is more feasible, many of the objections do not exist, and in dock yards, &c., sentries and watchmen can always look after a gauge, or hear an alarum.

“26. It may be doubted (and in truth this can only be settled by experiment,) whether in some cargoes, as a closely screwed cargo of cotton or hemp for instance, the cargo may not heat to a great degree before the pipes show it, if far off, because the cotton, hemp, &c., being such bad conductors of heat, it cannot be communicated, or the hot air carried to a pipe if at any distance. This *may* occur, but I think the heated air would always rise to the vacant space at the beams, and heat the collars of the pipes. But in coal, air would circulate as freely as water amongst it, and the heat be carried by the air to the pipes, so that if, say two, or four pipes were to heat far above, and far more rapidly than the others, we might safely say that mischief was brewing in the space between them, and take our precautions accordingly. What must be done is to weigh, measure, and count the danger, and get fair warning of it, and then we can face it with our eyes open, instead of as now, blindly waiting for our fate, and deploring the catastrophe when it arrives.

Calcutta, 15th June, 1847.

NO. 10.—VOL. XXI.

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REMARKS ON THE COAST OF NEW ZEALAND.—*By Com. C. O. Hayes,
of H.M.S. Driver.*

Concluded from page 471.

June 5th. The inns of Auckland, of which there are two, one of them under the imposing title of "Royal Hotel," are detestable and dirty in the extreme, such a contrast to those of Wellington, where every thing is clean and well ordered. Light rain to-night.

6th. Fresh breezes and squally from S.W. to W.N.W.

7th. Heard the Bishop (Selwyn,) preach, and a more impressive and excellent sermon I never heard; he is a wonderful man; thinks no sacrifice too great for Him he serves; he is very zealous in converting the natives, and thinks nothing of walking from one end of New Zealand to the other. He has unbounded sway over the natives, and, I believe, might rule them with the greatest ease from one end of the island to the other.

8th. Rode over to Hanaka to look at the harbour, but it was too late to see much. It is situated on the west coast, nearly opposite Auckland, and, in one place, the two harbours so near join, that the natives pull their canoes across, about a quarter of a mile. The harbour, I believe, is good, and if properly buoyed, would be quite safe. Here the steamers ought to lay, which might be communicated with in about an hour from Auckland, the distance being about six miles, and, if required, she could reach Wellington in about thirty-six hours, instead of four days, which it takes at present.

18th. Received intelligence from Wellington that the natives had attacked an outpost of the military, killing six, and wounding four soldiers.

21st. Shortest day. Moderate breeze from S.W., and calm at night.

25th. Left Auckland at 2 P.M., but owing to the fog, could not see Cape Colville, so anchored in 23 fathoms near it. Wind S. and S.E.; light.

26th. Blowing a gale from southward, which moderated at 3 P.M., when we proceeded on our way to Wellington.

27th. Passed White Island early; saw a dense column of smoke issuing from it, and the hills on the main land covered with snow.

29th. Heavy squalls of wind and hail very frequently from S.S.W., and, in the evening, a strong gale from that quarter; hove to.

30th. Blowing a gale, with heavy squalls, accompanied with hail from S.S.W., with a good deal of sea; more moderate at sunset; began to steam again.

July 1. Fine, with fresh S.W. wind; nearly calm in the afternoon. Saw Cape Palliser at noon covered with snow; sunset, a fresh breeze from N.W. Anchored at Wellington at 8h. 30m. P.M.; found things pretty quiet, though there has been another murder at the Hutt, and people are sometimes fired at.

4th. Thick fog till noon; fine and calm afternoon. Saw the friendly

natives inspected at the Hutt; they appeared a fine body of men, about 200, and armed by the Government with good muskets. The settlers have mostly deserted the Hutt, and the whole place looks a wilderness. Saw a small crust of ice, the first I have seen in New Zealand.

5th. Light airs from N.W., which at noon shifted to S.E., with thick rainy weather, and, towards night, blew in heavy squalls from that quarter.

11th. Left Wellington at 8h. 30m. A.M., and anchored at Mana Island at 6 P.M., having been nine and a half hours going forty-two miles under steam, owing to a very strong tide; and off Cape Terawite, though we were going seven knots through the water, we were still going astern by the lead.

13th. Light variable winds with rain all day; calm and heavy rain in the evening. Shifted to the anchorage at Porirua. At 9 o'clock a heavy squall from S.S.E.; let go another anchor and got steam up; exceedingly heavy and frequent squalls all night; I never knew it blow so hard except in the typhoon in China; fortunately, the water was smooth as we were under shelter from the land.

15th. Left Porirua for Wellington at 6 A.M. with light S.E. breeze. When off Cape Terawite, it came on a hard gale from S.E., with very heavy breaking sea, the ship lurching violently and evidently nearing the shore without going ahead; got the close reefed trysails on her, and anchored at Wellington at 2 P.M. The sea and wind were so violent, that if any thing had happened to the engine, the ship must have been lost; it moderated in the evening and then fell calm.

16th. Fine, with light airs from S.E., with calm frosty night.

20th. Left Wellington at five o'clock, and anchored at midnight off Waikanae River in Cook Straits. Opposite Kapiti Island, found the land and soundings as laid down in the chart. There is good anchorage between Kapiti and the main, or close under Kapiti, in all weathers. Excellent water, fire-wood, sheep, and a few bullocks and poultry, may be had at Kapiti. There are some few acres of land under cultivation by a man of the name of Brown, and a few whalers; and about 20 natives reside here. Kapiti is at the extreme of Cook Straits, and very hilly and woody, nine miles long, and about two and a half miles broad.

21st. Very fine, with S.E. wind. Anchored at Otahi, twelve miles from Kapiti; some chiefs came on board, and we went on to Ohoa. The coast from Kapiti to Ohoa is low and sandy, with very regular soundings; from 6 to 7 fathoms. About one and a half miles off shore, saw the peak of Mount Egmont like a high haycock covered with snow; light shower to-night. As far as the eye could see in the direction of Mount Egmont, the land, for eight or ten miles from the beach, appeared tolerably level but sandy, beyond that it appeared wooded hills.

22nd. Light east breeze. Anchored again at Waikanae. This is a small river only navigable for boats; a small native village stands near the mouth, and a church missionary resides here. These natives of Waikanae are friendly, and of the same tribe as the Wellington natives or Epuai tribe. Anchored at Porirua this evening.

23rd. Fine, with light variable airs. Landed 140 soldiers and sailors

at daylight, and brought off Rauperaha, and the arms, powder, &c., at his pah. When seized he called loudly for the agitators to rescue him, but no one came; his seizure caused considerable sensation among the natives, but it all subsided in a day or two. To-night calm.

24th. N.W. wind and squally, with showers at times. Anchored again at Kapiti.

26th. Light variable winds and thick rainy weather till noon, when it became fine. Anchored at Porirua; rolling a good deal with the ebb tide.

27th. The wind came from the N.E. this morning. Left Porirua at 3 P.M. At the entrance of Wellington it was so thick, hove to for the night. Rauperaha's tribe have gone out to take Raugiheata: at least, they say so.

28th. Cloudy, with S.E. wind. Anchored at Wellington.

30th. Rainy, with moderate N.W. wind. Raugiheata has left his pah and taken to the bush. Hard squalls and rain to-night from N.W.

Aug. 3. Fine, with moderate N.W. wind. Anchored at Porirua this afternoon; at midnight the wind shifted to S.E.

4th. Moderate S.E. wind. Landed some seamen to co-operate with the troops. Very rainy.

6th. Fine, with moderate S.E. wind. Having proceeded along a narrow path at the head of Porirua harbour, the advanced guard suddenly came upon Raugiheata, and, not knowing the strength of his position, rushed to the attack, when Ensign Blackburn and three men were killed, and eight wounded.

7th. Fine, with moderate S.E. wind. H.M.S. *Castor* arrived bringing our new funnel from Sydney.

8th. Very fine, with light S.E. wind. Eighty twelve-pounder shells were fired at Raugiheata's position without any effect, and he abandoned it in the night, when it was found to be merely a very strong breast-work on the ridge of a steep hill.

9th. The seamen of the force returned on board their ships.

11th. Fine, with moderate breeze from N.W. and N. The troops returned from pursuing Raugiheata, fearing the floods in the valley. What a strange thing, that a man, with a force of less than 100, can bid defiance to a force of 800 disciplined men; but such is the nature of this country, that it is almost impossible to move troops, dressed in the manner ours are. Sailors are a much better sort of force to send against the natives, but, above all, the attack of a pah should never be attempted without heavy cannon; people that have not seen them can form a very inadequate idea of their strength, where nothing is to be gained, and every thing lost, by being in a hurry, and the climate being so delightful, that men can live in the bush as well as in barracks. Time should be taken, roads cut, and due care that the supply of provisions is equal to the demand, great would be the saving in life and property if this was kept in view.

Sept. 5th. Moderate and rainy from southward. Left Wellington at 11 A.M. for Auckland. Strong southerly wind and drizzle outside.

7th. Fresh breeze from south to S.W., with frequent showers. I

think it will be generally found that when the wind is between the S. and E. at Wellington, it will be between S. and W. outside. Fine night.

8th. Very fine, with light S.W. wind. A number of birds, similar to the Cape pigeon, about the ship, coming so close as nearly to be able to touch them at times.

9th. Very fine, with light variable airs. Anchored at Auckland at 8h. 30m. A.M.

10th. Foggy morning, with very fine day, and light variable winds.

13th. Very fine, with moderate north wind. Hooping cough is now prevalent, which is the only complaint that has yet visited New Zealand.

15th. The wind shifted to S.W. early this morning, and fine day. In the town of Auckland, at the present time, land lets at £1 per foot per annum frontage, with from 30 to 50 feet back, and sells at the enormous rate of £10 for the same; this of course cannot last long. Auckland is supplied with all kinds of vegetables; potatoes and onions being raised by the natives as well as settlers, are of course much cheaper, in comparison to the others, the potatoes here are the finest I ever tasted. Light shower to-night.

17th. Fine, with moderate south wind. Saw Cape East at daylight, there is an island off this Cape about one mile, and I believe a passage through, but I have never gone between it and the Main, there is good anchorage on either side of the Cape, which is very advantageous for vessels going either way, as the wind generally blows along the land, therefore they can always get a smooth anchorage. As it came on to blow a strong squall this evening from the S.E., anchored in 7 fathoms, about five miles to the westward of East Cape Island, about one mile off shore, the soundings are pretty regular, on a sandy bottom.

18th. Fine, with strong squalls during the early part of the day. Sounded the bay where we are lying, and found it free from all danger, and the soundings gradually decreasing to 2 fathoms, close to the beach. This bay is sheltered from all winds between S.E. and W., lat. $37^{\circ} 14'$ S., long. $177^{\circ} 59'$ E. We saw a few huts and natives, and a small portion of cultivated ground. The tides here are moderate, the flood running to the westward. At 7 P.M. left this anchorage; we find that the East Cape Island, and land near it, is laid down too far to the eastward, the true position of the island, being in about lat. $37^{\circ} 42' 30''$ S., long. $178^{\circ} 32' 30''$ E.

21st. More moderate. Began to steam again; saw Cape Palliser at 7 A.M., when it came on to blow. Stood off and hove to. A little before noon it came on a heavy gale from S.W., with very heavy squalls of rain, wind and hail, and heavy sea running. Ship labouring and lurching violently.

22nd. Blowing a hard gale from S.W., with very heavy sea. Ship lurching 40° . To-night more moderate. Barometer rising fast.

23rd. Light breeze from S.W., with heavy swell. Began to steam at 6 A.M., found that we have been set considerably to the eastward by the gale.

24th. Anchored at Wellington at noon.

Oct. 15th. Fine, with light southerly wind.

18th. Fine and calm. Received on board some native prisoners, condemned to transportation for life, having been concerned in the late disturbances, they seemed quite unconcerned about the matter, and rather think it a good thing than otherwise. Left Wellington at 3h. 30m. P.M. for Auckland. To-night light N.E. wind.

21st. Fresh breeze from S.E. till noon, then calm, and S.W., in the evening fine.

22nd. Fine, with variable winds. Anchored at Auckland at 7h. 30m. A.M.; found here the *Childers*, from England, repairing damage she had sustained off the North Cape of this Island, having run into a tide race; formed by the shoal marked on the chart; she lost her bulwarks, signal locker and flags, &c., and shipped a good deal of water; she was going 11 knots at the time, with a fair wind; we passed close to it, but saw no race. To-night fine.

23rd. Very fine, with moderate south wind.

24th. Very fine, with light south wind. Having heard so much about the land and farms at the Tedmaki, (about eight miles from Auckland,) went there to have a look at them, but was disappointed, the land being much inferior to that in the neighbourhood of Mount Eden. There are some hundreds of acres in cultivation, but the land in general appeared indifferent, a good deal of it sandy soil; it is cleared, ploughed, and harrowed for about £2 per acre; but it does not do for gentlemen to farm in this part of the world, the natives will always undersell you in the market; but I consider this to be the very best part of the world for the labouring classes, with common industry they would soon grow comparatively rich. About Auckland, the chief attention of the people is paid to the retailing of various kinds of goods. Keeping a shop they find much more productive than tilling the ground. As I said before, the climate is the finest in the world, and sickness unknown, though I prefer the southern end of the Island, in the neighbourhood of Cook Straits, as it is colder and better suited to an Englishman. The rearing of sheep and cattle in that direction, will, I think, be found to answer well, and gentlemen are beginning to establish sheep and cattle runs, both in the neighbourhood of Wellington, and also on the Middle Island.

Nov. 1st. Five of the native prisoners were sent to Hobart Town in the *Castor*.

12th. Walked out six or seven miles on the north side opposite Auckland; there is a great deal of waste land on this side, covered chiefly with fern and broom stuff, with patches of cultivation, here and there, belonging to Europeans; but I saw no natives. Indifferent bricks are made on this side, and sold at £2 a thousand.

13th. Fine, with moderate S.E. wind, and nearly calm to night; it may be considered as a general rule, that in summer in New Zealand, the south wind dies away nearly to a calm in the evening, however fresh it may have blown during the day, and freshens up again about 9 in the morning.

18th. Our boat returned from fishing about fifteen miles to the north

of the Heads, bringing back fifty very fine arpaka, some of them weighing 70 lbs., they are something like a very fine cod.

22nd. Strawberries are now procurable in small quantities, at 2s. 6d. per quart; but they have not the flavour of the English ones.

27th. 400 troops arrived from England.

Dec. 2nd. The inhabitants gave a ball to the 98th Regiment on their leaving.

15th. Numbers of moths fly on board in the evening, so numerous as nearly to extinguish the candle.

16th. Very fine, with light S.W. wind. Left Auckland for Wellington. Wind light and variable.

19th. At noon we passed Cape Palliser, and a violent breeze sprang up from north, which lasted till 6 o'clock, the squalls tearing the water up in foam. To-night moderate and fine. Anchored at Wellington at 8 P.M. During our absence, they have had eight shocks of an earthquake, one of them so violent as to cause the people to run out of their houses, and they think if they had been built of anything but wood, they would have fallen; in the present instance, a brick chimney was thrown down, and others so much cracked, as to make it necessary to take them down.

22nd. A horticultural show to-day, the fruit and flowers decidedly finer than last year. The vegetables very fine; but not better than last year.

31st. After a year's experience at various places in the North Island of New Zealand, I am of opinion that it is the finest climate in the world. The land from the neighbourhood of Auckland to the North Cape good, and tolerably level and clear; that from Auckland to Wellington by the East Cape is exceedingly hilly and thickly wooded; that in Cook Straits the wind shifts more suddenly, blows more frequently, and with greater violence, than in any other part of the world; it fortunately abounds in good harbours and sheltered anchorages, otherwise, it would be a very dangerous place, owing to the rapidity of the tide and dangerous sea. Auckland, I think, is the best place at present for the labouring classes and those who keep stores, shops, &c., there being much more trade there at present than in any other part, but those who wish to farm or graze cattle and sheep, should go to the south end of the island.

New Zealand is famous for its spars of kauri, and also for other woods well adapted for building purposes. Flax may be gathered in any quantity, it being found in all parts of the island. The navigation is very simple, the shores generally bold and free from dangers except those that shew above water. Wellington Harbour I think superior to Auckland in every way, it being nearly tideless, and consequently smoother than Auckland, and the beach, in every direction, easily approached by boats; good streams of water flow into it in many places. When Wellington becomes of more importance, (which will very soon be the case,) and shipping resort to it in numbers, I think it will be highly necessary to have a light, or a light vessel anchored immediately within Barret's Reef; if this precaution is not taken, some fearful shipwreck will occur. The natives of New Zealand, I think, are not so numerous as generally

supposed, some say they are increasing, some say they are decreasing but I think little is known on this head. They are a fine race, but when crossed with the English, produce a finer than either; they are generally very intelligent, and capable of being taught almost anything; they are indolent at present, from wanting very little; but they are acquiring a taste for European necessaries and luxuries, which is rapidly increasing, and as these things are only to be procured for an equivalent, they will soon work more themselves, or for the settlers to obtain them. A number of natives are now employed by government making roads in various parts of the Island, many of them coming from a great distance. They are a fine, and I may call them an honourable race, and I fancy those settlers, who have lived amongst them for some years, and at a distance from all government assistance, consider themselves perfectly safe.

Jan. 1st. Going from Wellington to Auckland. Blowing a gale from S.W. all day. Lat. $36^{\circ} 32' S.$, long. $176^{\circ} 54' E.$, current S. $51^{\circ} E.$, fifteen miles. Fine clear night and full moon. Bar. 29.74, ther. 66° .

2nd. Fine, with strong S.W. wind. Anchored at Auckland at 3 P.M. To-night light variable air. Bar. 29.82, ther. 62° .

9th. Fine and very warm, with light variable airs. At 1 P.M. left Auckland for Kororarika, with some troops on board, the settlers having written to the Governor expressing their fears with regard to Heki, he being then in the neighbourhood of Kororarika, with his followers. Bar. 30.16, ther. 73° .

10th. Very fine, with light variable winds. Anchored at Kororarika at 7 A.M.; here we found things just as I thought we should, i.e. every thing quite quiet. Bar. 30.21, ther. $73\frac{1}{2}^{\circ}$.

11th. Very fair, with light breeze from the northward. Four whalers lying here. Heki and his followers arrived and encamped on the beach close to us, in all about 300. Figs, apples, apricots, peaches, and pears, are now to be procured here in small quantities, all of good quality. Bar. 30.10, ther. 75° .

12th. Fine, with light southerly wind. Fresh beef and vegetables, of very fair quality, are supplied here to the ships by contract. Poultry may be had in small quantities, anything else is scarce. Went on shore to have a look at Heki, found him in a wretched little house, made of brushwood, laying down with about 20 more; he is not at all ill-looking, as has been represented, he is an intelligent, energetic looking fellow, square face, and about 40 years of age; he was dressed in a checked shirt, striped waistcoat, and red blanket, and brown cloth cap, with two white feathers stuck in it; he has about 300 followers with him, including women and children. Mrs. Heki bears not the slightest resemblance to the prints of her, she is about 35 years of age, plain, but intelligent, dressed in a calico gown and camlet cloak, her hair merely dressed and bound round the forehead by a black ribbon. Heki derives all his consequence from her, she being the daughter of a chief of great note. There appears to be no outward form of respect shewn by the natives to their chiefs, and a very curious custom prevails amongst them,

i.e. when one of their chiefs gets beaten, or his blood shed by any one, all his relations and friends have a right to pillage him of anything; thus, Ripa, a chief of this place, (Kororarika,) in a drunken quarrel, a few days ago, got his head broken by an English woman, his friends immediately robbed him of all he possessed. Neither Heki or his wife would come on board the steamer. Bar. 29·98, ther. 74°.

13th. Very fine, with light S.E. wind. About 200 of the native, danced a war dance. To-night light airs. Bar. 30·8, ther. 72°.

15th. Very fine, with moderate east wind. Went over to look at Pahia, a little settlement opposite this, it is a wretched place, containing about a dozen houses, and many of them falling to decay; it is a missionary settlement. I saw three or four natives, the most wretched I have ever seen in New Zealand, more like slaves just escaped from a slave vessel than New Zealanders, and their huts, low, bad, and dirty. To-night calm and cloudy. Bar. 30·2, ther. 72½°.

16th. Fine, with light S.E. wind. Left Kororarika at 9 A.M., ran along the shore to the southward, about four miles off, and anchored at Wangaree, just outside the mouth of the river; tides moderate, nasty smell with the ebb tide; came here with the Governor, as some of the settlers had written to him to say that the natives were threatening their lives; but we found it turn out like all these stories generally do. The natives were quite astonished when they heard we were come there on their account, and we found them as quiet and peaceable as people could well be. The more I see of the New Zealanders, the more I admire them, treat them well, and they will treat you well. In all the disturbances they have never molested the out-settlers, but merely warred against the Government; and with regard to Raugiheata and the district of the Hutt, although it has been sold and paid for, two or three times over, I believe it has been done so by people who had no right to sell it, and, by what I can understand, Raugiheata has always refused to sell it, or take any part of the money received for it, and therefore still considers himself the rightful owner of the Hutt. Bar. 30 12, ther. 69°.

18th. Fine, with light north wind. Left Wangaree at 5 A.M., and anchored at Auckland at 1 P.M. Calm to-night. Bar. 30·20, ther. 71½°.

21st. Very fine, with moderate south wind. Met five natives from Rotorua, at Government-house to-day; the largest and best made men I think I ever saw, they were all above six feet high, and remarkably powerful looking men, they came on board afterwards, and I weighed one of them, and he produced 227 lbs., and then asked for a shilling for being weighed. Calm night. Bar. 29·95, ther. 72½°.

28th. Very fine, with moderate north wind. Left Auckland at 5 P.M. for England; had a gale of wind from S.E. on the 4th February, which lasted till the next morning, when we had a fair S.W. wind, steered to the S.E. till in lat. 48° S., and long. 152° E., altering course occasionally with the wind and sea, the former being always fair, generally from N.b.W. and S.W. I did intend to pass through the Straits of Maghaelen, but on arriving near the entrance on the morning of the 2nd March,

the weather was so thick we could not make the land, so ran round Cape Horn. In the neighbourhood of the Falklands we had thick rainy weather, with a current generally setting to the northward, with moderate winds from N.W., till we arrived at Rio, on 21st March. We had seen no land since leaving Auckland, we, nevertheless, made the land (the Sugar Loaf) to a quarter of a mile. From New Zealand to the entrance of the Straits of Maghaelen, we experienced a current of 420 miles to the S.E., and one of 130 miles to the N.E.

Rio.—Here we found every thing as laid down on the charts and books of directions. Almost anything may be got here, but generally very dear, and the meat very bad, and water indifferent, the latter brought alongside in tank-vessels. The coals are at the small island of Eachada, which is very convenient, as steamers can haul alongside and take them in in a very short time. They are carried on board in baskets by slaves, so you only have to stow them away. The *Driver* was the first man-of-war steamer that has hauled alongside the jetty to coal; the least water we had was 16 feet, with our paddle-box about three yards off the end of the little wooden jetty. It is advisable to haul off to an anchor every night. Vessels arrive frequently here from Africa with slaves and no notice taken of them.

Left Rio at 8 o'clock in the morning of the 27th March, and steamed till 4th April, 1847. When we were in lat. $13^{\circ} 21'$ S., and long. $28^{\circ} 1'$ W., having had nothing but moderate and light N. and N.E. wind. The wind inclining to the southward of E., began to sail, but the wind was so light, and being so far to the eastward, that we made but little progress. In lat. $1^{\circ} 30'$ S., and long. $24^{\circ} 55'$ W., it fell calm, and continued so with light airs and heavy showers; steamed into lat. 5° N., and long. 24° W., where the wind came from N.E., and began to sail again. Found the N.E. trade much fresher than the S.E., and steadier, generally between N.E. and E.N.E. Crossed the Northern Tropic on the morning of the 24th April, in long. 36° W., having experienced a current from the Equator to the Tropic of N.W. fifty miles. Although the weather was very fine and not too warm, several of our men had had slight attacks of fever, and I think, should it have been necessary to have gone to the Cape de Verds, we should have been very sickly, as there is an unaccountable disagreeable smell about the ship, more particularly when the steam is up, although the holds have been repeatedly cleared out, and their contents left on deck for several days; the only cause for it, I think, must be the leakage of the vessel in the coal bunkers; this smell has only been perceived lately, since the vessel has been strained by the violent weather of New Zealand, we having had nothing of the sort in China. In lat. 24° N., long. 35° W., we fell in with great quantities of gulf weed, which continued till lat. $34^{\circ} 5'$ N., long. 35° W. Lost the N.E. trade on the 27th April, in lat. 29° N., long. $88^{\circ} 13'$ W. Began to steam with light variable airs till 29th April, in lat. 32° N., long. 37° W., when we got a light breeze from N.W. Began to sail, the boilers leaking too much to steam; the light winds continued till 3rd May, in lat. $35^{\circ} 39'$ N., long. $34^{\circ} 14'$ W., when a fresh breeze sprang up from the westward, which lasted till 1 A.M. on 4th May, when

we were taken aback with the wind at E.N.E. with rain; began to steam again. In lat. $36^{\circ} 53' N$, long. $33^{\circ} 22' W$., passed a patch of very discoloured water of a yellowish colour; sent a boat to sound in it no bottom at 80 fathoms. 5th May, at 3 A.M. a breeze from the westward; began to sail again; this breeze continued strong and fresh, between N.W. and S.W. till we made the Lizard on 13th May. In about lat. $42^{\circ} N$., and long. $22^{\circ} W$., passed the wreck of apparently a small schooner, only the bowsprit standing; inside of stern painted white.

THE LOSS OF THE ROYAL STEAM MAIL PACKET COMPANY'S
STEAMER TWEED*

MR. EDITOR,—It may not appear at first sight that here in the East Indies we can derive much advantage from discussing how ships and steamers may have been lost in the West; yet I trust to show before I conclude, that we have more to learn from the awful catastrophe of the *Tweed* than is supposed, and if I do this, I feel that all (except, perhaps the heartless crew, whose chief talent lies in sneering at the efforts of those who think that every man is bound to cast his humble mite of usefulness into the treasury of mankind,) all, I say, except these, will not think your space misemployed in shewing it.

What I desire to urge on the public attention then is, that the loss of the *Tweed* and the sacrifice of human life to which it led, could have arisen but from two causes. These are both new, and one of them is, as yet, but theoretical, but it is on this very account, of the supposed causes being new, that they are entitled to greater attention, closer investigation, and fuller discussion. The dullest landsman can comprehend how a first-rate steamer, disabled perhaps by an accident, or caught in a hurricane of typhoon violence, against which her fullest power cannot force her, may be driven on a lee shore; or how, after a long run, out of sight of land, an error in her reckoning may occasion her loss. But the acutest seaman is puzzled to say how a vessel, and above all a steamer, leaves the land, and within 50 or 60 hours, in a well known track and sea, with soundings to guide her, is wrecked on a well known bank, having had only a heavy or smart gale, and the usual thick weather of a *Norte* in the Gulf of Mexico. He takes refuge, as our fathers did of old, when they were ignorant of the effect of the iron on their compasses, behind the excuse of *currents*—which but too often means anything that sailors cannot readily account for—and awaits patiently till his own turn comes: despising perhaps, as the contemners of Flinders and Wales did, the knowledge of a new source of error when held forth to them.

The two causes then to which I allude are—1st. The Deviation of the *Tweed's* compasses, and 2nd. The Storm wave. To one or other of

*Amongst the List of Wrecks, p. 269, May number.

these her loss *must* have been owing, and I shall presently show why I think that it must have been attributable to the last of them.

Of the first cause, we must suppose, in justice to her commander, that he took all possible care to ascertain what the deviation of the compasses on board his vessel was, and duly allowed for it; unless then this cause of error is, as I have formerly suggested, different when under steam from what it is when at anchor, we must assume it as being as well known as the variation, and as carefully allowed for. We come then to the next cause, the effect of the Storm wave.

“ We find that the *Tweed* left the *Havannah** on Tuesday, the 9th February, at 6 P. M.; and that on the 10th by 6 A. M. she had made 75 miles with a light wind, and had thus passed Punta Gobernadora on Cuba, by which she may have known her position at that time.

“ From 6 A. M. to noon of the 10th; course W.b.S. $\frac{1}{2}$ S. 42 miles, when it was changed to W.S.W. The wind freshened all Wednesday (the 10th) from the southward, with every indication of ‘ a norther ’ (*Norte*), for it became thick and very black with thunder and lightning, and the wind came suddenly round, (*shifted* says the *Standard*, and this is important,) to the north. No observation was obtained on the 10th, but the land of Cuba may have been in sight between day-light and noon.

“ On the 11th February it continued to blow heavily from the north, with a considerable sea on; at noon no observation. The vessel’s computed place at noon was that the Alacranes then bore S. 86° W. 124 miles. At half-past 3 A. M. on the 12th the vessel struck !”

Now it is clear enough that she was running, up to midnight of the 10th, under the shelter of the high land of Cuba, with the north-easterly and easterly quadrants of a rotatory storm, travelling up along the south side of that Island from the E.S.E. or E.bS. (which is a usual track for these storms thereabouts†), to pass between Cape St. Antonio and Cape Catoche along the coast of Yucatan, or pretty nearly in a direct line towards the Alacranes. It is true that the wind was not of storm or hurricane violence, but the fact of the shift was an indubitable or strongly indicative proof that it *was* a rotatory storm; and that ought to have put Captain Parsons on his guard against *the Storm wave*, since he was then at the centre; and if it had the track we assume, he was crossing it at a so small an angle for the short distance he had to run, that we may say he was steaming with it.

The Directories say, translating from the Spanish, that the currents between Cape Catoche and Cape St. Antonio set to the northward sometimes as much as three miles an hour.

We suppose that every usual current was allowed for, but if there was a storm wave at the time it was acting, partly, the *same way* as the current, each cause being insufficient in itself for the mischief, and one

* I am quoting from the accounts published in the *Times* and copied by the *Hurkaru*, and one in the *Nautical Standard* published by the *Englishman*.

† See Mr. Redfield’s chart in Col. Reid’s Work.

of them, as we have said, known and allowed for; but the two together producing a fatal amount of error in a short time. It is clear that there was no suspicion of the Storm wave, for the writer in the *Times*, evidently a sailor too, or one understanding something of nautical matters, expresses the belief which prevailed, that they had been carried on to the coast of Yucatan by the "fierce norther."

Before we apply this lesson here, there is one remark to be made, which is, that *nothing is said about soundings!*

Now, inspection of the Admiralty Chart will satisfy any one that the soundings from 18 to 20 fathoms are a perfectly safe guide to keep a ship about the parallel of 22° and this is 20 miles south of the Alacranes beyond the line of 20 fathoms the water deepens towards the shoal, and within 18, it shoals towards the Yucatan coast and is on both sides irregular. The Directory distinctly says, in the directions for crossing the bank from East to West in the season of the *Nortes*, that 18 and 20 fathoms is the proper water. It is too hasty to condemn at once from newspaper accounts, but one cannot avoid asking, Mr. Editor, in such cases, if this is another to the too many proofs which sailors, of the olden time at least, can see "*that steamers will not stop for soundings.*" I trust it is not, though indubitably the deep water must have warned the Commander of the *Tweed* of his approach to the bank. What could he be doing? How is it that we hear nothing even of his ascertaining exactly that he was on the bank which is always done when its edge is approached hereabouts? and gives a very exact longitude. Till these questions be answered, Sir, We must remain doubtful if the right precautions were taken. "Lead, Latitude, and Look-out," says the good old saw; of Lead we hear nothing, Latitude might have been obtained from the soundings, and Look-out alone was too late! I come now to the lesson which this dismal catastrophe offers for our own seas, and it is more of extensive application than would be imagined.

First, then, let the seaman carry with him the certainty, and of this there is plenty of evidence, that rotatory gales do not always rise to the strength of hurricanes; but that where he meets with a gale or heavy breeze, a shift, and a gale from the opposite quarter, then he *may* also have a Storm wave or Storm current.

Now let him suppose himself steaming, or steering, up from Point de Galle towards Aden, the Gulf, or Bombay, he will readily see that, like the *Tweed*, he may first find the southerly winds of a rotatory storm travelling up nearly on his track, then that he may cross the centre, and get a heavy "norther" or northerly gale, and with thick weather find himself set up amongst the Laccadives by the Storm wave much sooner and much farther than he could imagine "against a fierce norther," and he has no soundings there to help him.

In passing the Pulicat shoal, the same may occur; and the same in passing the usual track between the Paracels and the Macclesfield Bank in the China sea. All these are in our nautical high roads; and, unless in the cases to which I have alluded, due, and even large allowance be made, there can be no manner of doubt that the seamen exposes himself

to a serious disaster; and those who reflect not only on how numerous disasters have arisen "from unknown currents," and the true history of some of the disasters; but, moreover, how rapidly steam and increasing commerce are multiplying the chances of them in future, will not think the caution furnished us by the loss of the *Tweed* a needless or an officious one.

Calcutta.

H. PIDDINGTON.

CHAT ABOUT THE WINDS.

THE various agencies in operation to create movement of the air, although pretty constantly in action, are, often unnoticed, even when affecting the senses; some act at a distance, others locally; and the changes are frequently so sudden as to create great surprise; the ordinary observer does not perplex himself about the causes, the effects alone arrest his attention; but there are others who do not rest without an effort to connect them.

On one occasion I observed the wind was from the N. E. ; it was a fine warm day throughout; the next morning—what a contrast! The wind continued precisely from the same quarter, but some change had supervened during the night that lowered the temperature, and produced a raw, cold, and winter's day! These sudden changes give a remarkable characteristic to our climate, and their effect on the bodily sensation is so great that every one speaks of it.

It is not always easy to account satisfactorily for these changes; in the instance alluded to, perhaps the heat of the weather on that day proceeded not alone from the unclouded power of the sun on the general atmosphere, but from radiation; during the night have noticed that about 9 P. M. a fall of temperature almost invariably take place; radiation probably then ceases; and again in the morning another change occurs before day dawn as regularly; evaporation and electricity may have cooled the air during the hours between the 9th hour and day-light, and condensation having taken place in the region of the clouds, the sun's rays being shut out, the frigorific quality of the N.E. wind exerted its influence unchecked, and thus this local change was probably completed; the disposition of surrounding lands, and even the nature of the soil may have been influential.

Extending the question we may infer the following; we are sensible that the power of the sun is greatest at the surface of the earth, from the gradual decrease of temperature as mountains of elevation are ascended; consequently the air immediately incumbent on the surface may be considered as that of the greatest heat, actively aided by radiation. But, as the temperature may vary in the twenty-four hours, from the alternate presence and absence of the sun, as also from meteoric changes supervening, the density of the respective strata is subject to

variation; a mutation which, it is not unreasonable to believe, is a source of much of the diversity that is observed to take place in the direction of the currents of air, in the lower region of the atmosphere within the temperate zones.

In the summer of the temperate zone rarefaction alone will occasion movements of the air, how often do we find, during that season, spaces of profound calm, and the effect of the sun's power nearly as great as within the tropic; and how often, too, is this state followed by a fresh breeze, pouring into this attenuated air? Whenever a column of air becomes cooled and condensed from some local atmospheric change, a movement is caused progressively onward in the direction of warmer strata, and hence those temporary winds so often experienced.

I am not philosophic enough to speak of the attractive and repulsive properties of the globules of water, or of the fluid air; but every seaman has observed with what facility portions (for the sake of clearness called columns, or strata) of the air move side by side in opposite directions; the courses may be local or may be remote; but whatever these may be, it seems clear they are often confined laterally to certain limits, and do not influence other strata beyond these, although the effect may advance to some distance; which extent no doubt is exactly proportioned to the rigour of the acting agencies.

The difficulty in comprehending such phenomena in a continuous atmosphere may be lessened if we reflect that, although extremely minute, every globule or particle of air is in some degree independent of another, and as these are supposed to be spherical as best suited to motion, a cause acting locally will only influence that portion of the surrounding air which lies within the sphere of its action. This to me appears to be the common-sense view of the matter; and although I cannot pretend to give it an established axiom, it may be taken as a very reasonable postulate.

It is not easy to explain why a certain portion of the air becomes in a state of calm, but there is no difficulty in concluding that whatever may give rise to it, the air has been brought to a perfect state of equilibrium. During the quiescence it is not without a certain degree of surprise that those insipid motions called by seamen "cat's-paws," are observed. Where is the agent of these transient breathings? In the air or in the water? Is not heat, and its extreme, cold, transmissible like light and electricity? Does the effect spring from the latter all-pervading power? I may content myself by merely adding that it is philosophically considered that, from the extreme minuteness of the particles of air, propulsion may be produced by a force so small as does not fall under the notice of our senses.

One acting principle of the atmosphere seems to be incessantly directed to acquire and maintain a due balance, and this is never obtained without a struggle of the various agencies that are such restless agitators within its precincts; hence the recurrence of gales and calms. These vicissitudes are all conductive towards an end or design; and although appearing to us as complicated and confused, there cannot be a doubt

but that the whole is regulated with the nicest order for universal good.

The lower strata of air probably reaches to the elevation of three miles and a half from the earth's surface; beyond which the clouds do not perhaps ascend; and it may be inferred from observation that generally the surface currents of air reach no higher than the region of clouds, often to the lower stratum of clouds only; and sometimes, even when blowing strongly to a very inconsiderable height above the surface; a hurricane has been known to extend no higher than about sixty feet from the ground, above which it was calm. Who has not witnessed the clouds stationary when a fresh breeze has been blowing below, or, has not seen them moving in a contrary direction to the current of air on the surface?

The elasticity of the air is a wonderful property, and its expansibility equally, as a consequence, curious; this principle no doubt has a limit, but we cannot mark it with reference to the whole body; we do not know the extent of the atmosphere above the surface of the earth; (it has been estimated at from 40 to 50 miles); but the effect of the property is often felt on the surface; and, we may consider the middle region of the earth as the grand theatre of its action; it there exercises its power in giving fleetness to the trade winds, and facilitates the exchange of air.

If we were to reason in the abstract merely, on the phenomena of heat and cold creating wind, we should be apt to assume that the air would have a regular gradation of action from the poles to the equator. This we know is not the case; there are too many agencies in active operation to admit of such uniformity, and it is on account of the variable intensity of power of these agencies that we have a scale of winds from the cat's-paw to the hurricane.

Humboldt's theory of the interchange of air, differs from others. That experienced philosopher considers that the diffusion of the polar air (the difference or distance between the rarest and densest air has been computed by Boyle to be as 1. to 520,000! but is now said to be greater.) which feeds the N.E. trade wind during the winter, is suspended whilst the sun is in the northern signs, as then, he says, the easterly breeze ceases to blow. If this be meant to be taken literally, no seaman would subscribe to it, because it is disproved by facts. It is true that the torrid zone, supposing the mixing of the northern air, to be suspended, would not be destitute of renewed air, as the process would still be going on in the southern hemisphere; but upon what grounds such an assertion is made with reference to the process being suspended in the northern hemisphere does not clearly appear. The N.E. breeze continues to blow during the season of summers, but less actively; and that want of activity may be attributed to the sun's place by which the northern temperate zone is heated to a temperature more upon an equality with that of the tropic, than in the winter.

AUTO-BIOGRAPHICAL SKETCHES, by a Merchant Sailor, illustrative of the State of the British Merchant Service.

(Concluded from page 479.)

THE vessel soon gave evidence of breaking up, from the almost constant swell which rolled upon the reef, she bilged, and when the sea was heavy it broke constantly over her. The crew, with labourers and fishermen from the shore, were engaged for some days in saving the passengers' baggage and cargo; but the greater part was entirely destroyed, or rendered useless by sea water. The remains of the vessel and cargo being sold, we were paid our wages and discharged. Some spent their money as sailors generally do, in dissipation; one by one engaged on board the various vessels in the Bay, according to fancy, and in a fortnight after the wreck all were either sailed, or at work on board vessels in the Bay.

I engaged on board a vessel, which the Governor of the Cape of Good Hope chartered to carry on the government officers, who were passengers in the old ship. It seems they represented to the governor their importance in the colony to which they were going, and he deemed the object of their mission of so much consequence as to incur a heavy expense to forward them to their destination. A few of the cabin passengers of the old craft, not connected with the government, going out either on their own account as settlers in the colony, were accommodated in the newly chartered vessel.

The principal dispute, and threatened duel, had remained in abeyance after arriving at the Cape; the circumstances under which we got there having partially reconciled the dissentient parties, at least so far as to induce them to converse occasionally, especially as they had to apply in concert to the governor to get sent on to their ultimate destination. Although publicly they were apparently reconciled, in private the old acrimonious feelings were as active as ever, and it appears they each went at various separate times to our new master, and told their several complaints: to both, I understood, he invariably gave the same reply, that "He knew nothing of former disputes, and would regulate his conduct to all parties entirely according to their own behaviour." He was a young man of whom I saw but little while the vessel remained in Table Bay, as he lived on shore; he appeared attentive to his duty, and invariably agreeable and calm in temper, while he possessed sufficient firmness and determination to form his own opinion and act upon it. I soon discovered that the vessel was well regulated, we were always called at the same hours in harbour, and the work was well carried on. At sea the watches were regularly kept, and the time maintained to a minute; no excuse was received for a bad relief, the watch was never called unnecessarily, reefing or shortening sail was done when the watches were being relieved, or by the watch and idlers, who slept in all night—the cook, steward, carpenter, and servants. The meals were invariably ready at the hour appointed, the prescribed quantity of good provisions

regularly issued, and the whole system was one which every man on board admired. The dog watches were spent in singing, or skylarking. Saturday afternoon was invariably given to scrub and mend clothes; and on Saturday night a glass of spirits for each man was sent forward in a bottle to drink the old and favorite toast of "Sweethearts and Wives." On Sundays Divine Service was regularly performed. In fact there was no occurrence worth mentioning during the passage, every day passed over as pleasantly and happily as another, and the few disagreements which occur amongst passengers and servants in all emigrant vessels, never were heard of beyond the immediate locality in which they happened. We heard from the steward that only once, a day or two after sailing did the master reprove a passenger, he had become impatient at table, and swore at one of the servants, when the master, calling the gentleman by name, quietly intimated to him that, upon a repetition of such conduct, he would not permit him to come to table.

Another difficulty occurred which was settled in the same firm and decisive manner;—on board the former vessel the passengers had been accustomed to see the days' work, and the charts, and remark on the past and speculate on the future; our present master, however, worked his observations in his berth, kept his charts in the same place, and gave his courses and directions without remark. The passengers had remarked this, and did not like it, they preferred the consulting plan, and two of them a few days after sailing, asked permission to see the chart, this our master quietly but firmly refused, saying "that he invariably trusted to himself and officers in the navigation of the vessel; that he was sorry to think they had no confidence in him, but trusted they would gain it." Of course they had no remedy but to find amusement in some other way.

The master's conduct soon gave them confidence, he was constantly attending to his duty, if it was bad weather he was invariably on deck; ever calm and collected under difficulty, at the same time he was ever cheerful, and when the weather permitted, amusements of all kinds were contrived for the passengers—fishing, shooting, and dancing. So quietly were matters conducted on board this craft that one morning shortly after 4 A.M., the master having been on deck all night, (it blowing a gale of fair wind with squally weather,) a youngster relieved the wheel, and the master went below to sleep, when the young man, either by inattention, or without the requisite nerve or experience to steer the vessel under the circumstances, allowed her to broach to, and away went the main and main-topsail yards, the one in the slings and the other in the quarter. The master was again on deck in a moment, the sails were secured, the broken yards got on deck, as well as the main-top-gallant yard; and when the passengers came on deck at the usual time between seven and eight o'clock, the craft was running along with the sail on the foremast, and the unrigged mainmast standing, without a single passenger having heard a sound to disturb them. The enthusiasm of the passengers, and their confidence in the master became very great, and there was nothing they did not suppose him capable of accomplishing.

We reached our destination quickly and safely, with no other than the usual incidents of a sea voyage to attract the attention; the passengers soon dispersed to various parts of the country, and forgot the discomforts of a long and tedious passage in the excitement of life in a colony entirely new to all of them; and which some of them did not seem to relish. Once rid of them we proceeded on to South America, across the Pacific in quest of employment for the vessel. This was soon obtained in Valparaiso, where we loaded goods for a port in Bolivia, and thence made preparations to load a cargo of nitrate of soda.

All vessels loading on this coast, where there is no fresh water, take on board at Valparaiso water for the crew and labourers employed at the cargo on shore, and sufficient for the consumption during the time the vessel remains on the coast. The coast is barren and uninteresting, except where now and again the chain of the Andes verges towards the sea, and diversifies the otherwise insipid coast. There are few good anchorages or bays, where vessels load on that coast; but as the weather is generally calm and settled, there is little danger in anchoring any where beyond the surf. The cargoes, whether of nitrate of soda, guano, or copper ore, are brought down to the beach on the backs of mules, then carried through the surf by the Indian labourers, and placed in bolsas, which are paddled through the outer surf to the ship's long boat moored outside, which, when loaded takes it alongside. These bolsas are made of two large hides, each well sewed in the shape of an iron poutoon and filled with air; they are then lashed side by side with leather thongs, and with boards placed across are paddled by a man on his knees, with a double blade paddle, forming an excellent conveyance through the surf.

There is nothing to remark on the coast. At some places a little bad wiry beef is to be had, but generally the crews of vessels frequenting this coast are fed upon salt provisions. Under these circumstances we were glad to get once more to Valparaiso to obtain provisions and water, and enjoy the delicious vegetables and fruit which are so readily and cheaply obtained at that place. A passage round Cape Horn in the winter season is not very agreeable, particularly in a deeply loaded merchantman, yet an account of the various scenes, of shortening sail, of reefing, repairing sails, drying clothes, and such like circumstances, usually attendant on the passage, would not repay the perusal. No unnecessary duty was required; the crew were treated with kindness and consideration, and the duty was invariably cheerfully performed. It would be useless to attempt to describe minutely the passage home, but all went on pleasant and agreeable. We arrived in England after the usual length of passage, and were paid off and dispersed as sailors generally are after a voyage.

Years now rolled on, during which the usual vicissitudes of a nautical life passed by, without any very striking incidents occurring which are worthy of particular mention, or, rather which are adapted for the object of these sketches, which were meant to display some of the more striking scenes illustrative of the want of discipline in the Merchant Service. I

therefore pass on to a period when I was chief mate in England, and got a letter from my old acquaintance, Mrs. M——, asking me to join a vessel under the command of Capt. M., as chief mate. I at once assented to the proposal, although my former experience might have deterred me; there seemed some inward influence urging me to accept; and I was welcomed by both (Mr. M. and his wife,) with the greeting of an old friend. It appeared that after our last voyage already recorded, he went to the country, and there secluded from society, and brought more under the influence of his wife, he became less influenced by his drinking habits, and recovered partly his former tone of mind and constitution.

I joined the vessel, a very nice barque, well fitted and equipped,—the owner permitted the master to do as he pleased with procuring stores, provisions, and crew; and Jemmy turned over the whole matter to me, referring to me every thing as regarded provisioning the vessel, stowing the cargo, and making the necessary preparation for the voyage. I consequently engaged the crew, and got all ready for sea, without seeing much of the master, who only came alongside once a day, and then merely asked a few common-place questions. I frequently saw Mrs. M., who at times seemed to dread the result of the voyage, during which she was not to accompany her husband, the owner having expressed an objection. She hinted her dread of his returning to his former habits, and her fear of the consequences. I could say but little to comfort her, as I knew too well how little command he possessed over his inclinations.

At length the morning of our departure arrived, and I went to the master's lodgings to get the chronometer, and bid Mrs. M. adieu! He was not present, and she entered more fully than she had yet done into her hopes and fears; she shed some bitter tears, and begged me to prevent him drinking. I told her I would do what I could, but preventing a person of his temperament was impossible; she forboded evil, and became so possessed with the idea that something would occur to him during the passage that she gave me her private address, in Scotland, where she intended going to reside with her friends during her husband's absence. I placed it in my pocket, and very much affected bade her "Good bye," and embarked; when the bustle consequent on departing and getting the crew on board, and the vessel ready for sea, soon for a time banished Mrs. M. from my recollection.

Our crew were generally steady good men, from the first they looked to me for orders, and I had no difficulty in commanding them. Jemmy, however, betook himself to his old habits, and continued from the time we left constantly excited and intoxicated. He took no interest in the navigation of the vessel, but seemed entirely to trust to me. The weather during a tedious passage down channel was very thick, and when I would go to him, and report my opinion as to its being time to tack, he would merely reply "Very good, Mr. S. if you think so, do it." Every day he became more excited, at times he would resort to his old habits of running about the decks at night, and enjoining a good look-out for something which only existed in his own fevered imagination, at others

he would quarrel with some man about steering, although the man was steering very well; then he would go upon the poop in an excited state, and declare that "He would shoot some of them, if they did not take care." On one occasion after such vapourings the men came and made a formal complaint to me, saying they feared he would shoot them; but I instantly quieted their apprehensions by informing them that I had the whole of the powder in the vessel, locked up in my cabin, and that the master could not get access to it.

To me he was ever civil and respectful, extremely kind, offering me anything on board which I fancied: on one occasion only did he interfere; he had been indulging, and came on deck towards the end of the first watch, it being my watch on deck, and calling me formally by name, (a thing he seldom did, generally using merely my surname,) he ordered me "to get a pull of the weather main brace;" knowing that the order was unnecessary, and that it proceeded solely from his excited state, I walked forward pretending not to hear him; he, however, renewed the order in more peremptory language, I at once went up to him, and said firmly, but coolly, "The main brace is as well as I can make it, and does not want hauling in;" when he went down below, and never on any other occasion interfered with the duty. He was now quickly becoming worse, more incapable of exertion, and unable to eat; he seemed to suffer much, except when under the influence of spirits,—brandy and water was his constant beverage.

The vessel meantime had cleared the Channel, and with a fair wind was fast leaving the land behind. We were bound to a port in South America, the approach to which was surrounded by many dangers, of which I had no experience, and I saw clearly, on my exertions alone could I depend. I became anxious about the result, and at times when he was in the humour I ventured to hint to him as broadly as I could, the danger he ran of hurting his constitution, and the necessity there was for his keeping well to navigate the vessel. To this he would scarcely reply, but either got angry, or merely said, "You can navigate the vessel as well as me." A constant excitement and depression at length induced *delerium tremens*, and it was most pitiable to behold him bereft of his senses through his own misconduct. He would shift into all the berths in the cabin, then he would lie on the top of my chest; sometimes he would rush out of bed, in his shirt, his eyes staring and rolling wildly, and hurrying past me crouch up in a corner of the cabin, and tremble from head to foot, keeping his eye fixed on a particular place: when I asked him what was the matter, he would at once reply in a most excited manner, "Don't you see him?" "Don't you see him there?" I would ask "What do you see? there is no one here." He would immediately add in a frightened tone, shaking dreadfully from fear, "Don't you see the devil throwing darts at me?" On some of these occasions I had great difficulty in getting him quiet and to bed again. Often during the night I would hear a wild startled cry, or low moaning, and then a maniacal yell, the result of another paroxysm. It was indeed distressing to see him; nature at length gave way, his stomach refused

food, it loathed spirits, he cried incessantly for water, "Oh! give me water—water for God's sake, my inside is on fire." His strength was now fast decreasing, every remedy our limited means admitted were tried, but in vain.

We had passed Madeira a day's sail, and were running onwards with a fine fair wind, when in his exhausted state, he sent for me one afternoon; I found him lying on his bed, placed on the top of my chest in the cabin, the place he chose for himself, he was calm and collected; but said he was suffering great pain inside. He coolly told me he was dying, I endeavoured to rally him, offered to put back to Madeira, which he peremptorily negatived. I then buoyed him up with the expectation of getting to the West Indies, when I could put him ashore at his brother's, as the vessel passed, he at once decidedly said, "It is no use talking, I am dying, and before 8 o'clock to-night I will be no more." He then told me where to find the ship's papers, to prosecute the voyage with energy, and fulfil the owner's instructions, to seal up his desk, and carry it home: he said, "I have lived a sailor, and I want to be buried like one. I have no hammock, but you will get my body cleanly dressed, and sewed up in canvass, and bury me as a sailor should be." I could not help being deeply affected with his expressions, and the melancholy situation into which his excesses had hurried him, I replied "that should anything occur, I would do my best for the owner's interest, and attend to his wishes by giving him my own hammock." I then saw his eyelid quiver, and his frame slightly tremble; I fancied he was about to give way, and express his sorrow for his past life, and his present condition, or deprecate his past infidel existence; not a word however did he utter for some time, at length he unbuttoned the wristband of his shirt on his left arm, and slowly rolled it up, until it reached the elbow, when looking me earnestly in the face he pointed to the initials of his own and his wife's name, marked with Indian ink on his arm, and burst out, "S—remember me at home." I assured him I would, as well as the excited state of my feelings would permit, and left the cabin unable and unwilling any longer to protract the distressing scene.

From this time he gradually sank, he appeared to have no want, to suffer no pain, and so quietly did he depart about half-past seven, that we were not for some moments aware that the vital spark had fled. Pondering over the event which had occurred, after giving orders as to the dressing of his body, and sewing it into the hammock, I began to reflect on Mrs. M's anticipations of misfortune before we sailed. The address she then gave me, at once recurred to my memory, and as we would, in the prosecution of our voyage pass close to the West Indies, when we could send letters ashore, I began to bethink me what I had done with it, I searched everywhere, amongst my clothes and books; but no where could I find it, I gave it up as lost, and resolved to perform the last offices to the deceased according to his wish.

Next morning, therefore, about 10 A.M. the barque was hove to, the body with a weight attached to the feet, was brought to the gangway, covered with the Union Jack, placed on a plank, the inner end of which

rested on the gunwale, and the outer end on the swinging boom; the crew, clean and orderly, were collected around. I proceeded with the beautiful burial service of the English Church, until I came to the words "commit his body to the deep," when I dropped the arm holding the prayer book, by my side, and looked over the vessel's side to see the body go down, the swinging boom topping-lift having been let go; at the moment I saw a paper drop from the prayer book, I finished the service, picked up the paper, found the very address Mrs. M. had given me in anticipation of the very event which had occurred; and it certainly appeared at a most extraordinary moment, just as the plunge of the departing body announced its going, the paper appeared to remind me of my promise to the living. I went to my berth and shed tears; the whole of my long and extraordinary voyaging with Capt. M. flashed across my memory, and I forgot his failings in the remembrance of his kindness to me on all occasions.

Duty, however, had its calls on me, and I remembered that the barque was still hove to in the middle of the ocean. I went on deck, called the crew, reminded them that I had succeeded to the command by the master's decease, appointed the second-mate to be chief mate, and desired them to choose themselves from their own number a man to act as second-mate, made sail towards our destination, and issuing a glass of grog to them, proclaimed a holiday, ever acceptable to a sailor.

For the present I end my "Sketches," with a hope that they may serve to warn some young master mariner against the faults I have described in others; assured that the whole comfort of the crew, as well as their safety depends much, if not altogether, on the conduct of the master; whether I may afterwards describe my farther experience as a master will depend upon circumstances.

FLOATING OF THE GREAT BRITAIN.—*Arrival at Liverpool.*

THIS gigantic vessel, which has lain stranded at the head of Dundrum Bay since September last—now about eleven months—is, at last, fairly afloat. It will be recollected that Mr. I. Brunel, jun., first undertook to rescue the Great Britain from her perilous situation, and to preserve her from becoming a total wreck under the heavy surge which rolls into the Bay of Dundrum from the Irish Sea, when the wind blows freshly from any point between east and north. To accomplish this, a substantial breakwater was erected astern of the steamer to seaward. This barrier, which was upwards of 150 yards in length, was formed of rows of piles, the trees for which were furnished gratuitously by Earl Roden, from his plantations at Ravensdale, on the opposite side of the bay. The outer row consisted of pliable piles of green or sap wood. These resisted the violent assaults of the surf, the green timber yielded to the advancing waves, and rebounded by its own elasticity as they receded. Between the inner rows of piles, immense bundles of faggots, formed of brushwood, bound together, and loaded with stones, served to

"deaden" the billows as they rolled in upon the ship. This invention proved eminently successful in saving the vessel from what, at one time, seemed inevitable destruction, so much so, indeed, that when her bottom was examined, after the first attempt to float her had been made, her hull was found to have suffered no other injury than three perforations, of no importance, caused by fragments of rock torn off it passing over a reef in the furious gale of April last. The symmetry of the noble vessel's "water lines" remained as perfect as on the day when she floated out of the building dock.

The operations for floating her were subsequently entrusted to the Messrs. Bremner, of Wick. Twenty large boxes were made, to contain upwards of thirty tons of sand each. Ten boxes were suspended on each side by strong chains, which went over the pulleys in the upper part of large vertical baulks of timber, the same chain passing through pulleys attached to the side of the ship, thus doubling the weight of sand in the boxes, less the friction; and it should be added, those boxes in the middle of the ship, opposite the engines, had four power to each, to prevent straining the ship at that part. Very powerful levers were put to the fore-end capable of lifting about 190 tons; and along the sides opposite the large timbers formerly on the ship, were also placed levers capable of lifting about 200 tons each. In addition to this lifting power of boxes and levers was applied screw-power, capable of lifting 160 tons. These screws were placed near the hawse-holes, on a stout frame of timber, which was on immense end-wood supports. The levers on the sea side of the ship were ballasted with chains, anchors, and parts of the engine; as also were those on the fore part. The sea had, therefore, little surface to strike against; while the levers on the land side of the ship were ballasted by a large iron boat filled with sand.

When the lifting power was about complete, on the 13th of July (spring-tide), it was thought advisable, as the good season was passing, to make the first attempt, when, to the surprise of all on board, the ship lifted so rapidly that the valves had to be opened to prevent her going up further. This first trial, it appears, was set about too prematurely, as sufficient preparations had not been made to retain the ship at the required height; consequently, on the receding of the tide, several of the boxes and baulks were injured. To provide for maintaining the ship at the required height, some thousands of small piles were driven, reaching from the surface of the sand to that of the rock; and on these piles were laid foundations for vertical supports, which, by an ingenious contrivance, were made self-acting, so that as the ship rose the shores placed themselves. In addition to these shores, were many immense wedges, hauled in at the fore-keel and bilges; stones were also put under her with long shutes from the deck. The gratifying result of all these preparations was, that on Thursday, the 29th July, the ship was raised to the required height, so that the boiler-builders could get at the bottom to make it water-tight.

She maintained her position up to Wednesday night last, when preparations were commenced for making one more attempt to float the ponderous vessel. When the tide began to flow on Wednesday night, anchors were laid out astern, and the warps attached to which were hove upon by the vessel's windlasses and capstans. These were so far successful as to move the ship about three fathoms farther to seaward, in which position she was permitted to remain until the following day. The Birkenhead, iron steam-frigate, of 1,400 tons, and 600 horse-power, had come down from Kingstown early in the week to act as a tug when required; and the *Scourge*, steam bomb-ship, of 400 horse-power, which had formed one of the royal squadron in her

Majesty's excursion to Scotland, had also been dispatched to the Bay of Dundrum, and anchored about a mile and a half to the south-eastward of the Great Britain. A large number of the crews of those two steamers were aboard the Great Britain, and very efficiently contributed to the success of the experiment. Mr. Bellamy, second master-superintendent of Portsmouth Dockyard, and a strong detachment of riggers from the Dockyards both of Portsmouth and Plymouth, were also on board the Great Britain, and rendered good service.

On Thursday recourse was had to the steam-power of the Birkenhead; but owing to the failure of the floating apparatus in two large lighters alongside the ship, and to the lowness of the tide, in consequence of the northerly wind that had prevailed for some days, she did not rise so high as had been expected, all the efforts made to remove her were entirely unsuccessful, she not having been towed out even one foot.

On Friday it was generally known that a final attempt would be made to get off the leviathan ship, and great interest was excited in the neighbourhood of Tyrella and the surrounding coast, among all classes, as to the result.

The stern of the Great Britain was lying seaward, and her position just as it had been for some time past. A large chain cable was drawn right round the vessel, a little above the keel, to which the "camels" and boxes were attached that had been used as auxiliaries for raising the ship. Four large cables were also attached to this chain, and made fast to the anchors of the Birkenhead, which lay about 400 yards to the eastward, and also to the bower anchor of the Great Britain herself. The crew of the *Scourge*, and a party of marines belonging to the same vessel, were on board, and rendered important aid. Two sloops were placed on each side of the vessel, amidships, on which short logs were placed, crossways, the ends of which pointed under the bilge of the vessel; on these logs shores were placed in an inclined position, and made fast at the bulwarks of the vessel, so that, as the sloops were raised with the flowing of the tide, the ship was also raised. As soon as the vessel began to rise with the tide, and attain a floating position, the men at the capstan commenced to warp her off, hauling on the anchors of the Birkenhead and on her own bower. She yielded to the immense force thus applied, and at half-past 11 o'clock the hitherto inert giant was moved 80 fathoms, or 480 feet to seawards, and left in a position to float at even neap tide. The ship, everything considered, made very little water—not, it is said, more than six inches an hour—a leakage which was easily kept under by ten out of the forty pumps which had been provided to meet any possible emergency, and some of which were of the most powerful description.

On the entire success of the attempt becoming manifest, by the signal flag "All right," being hoisted to the mast-head, Captain Claxton called the men aft, and demanded three cheers for Old Ireland—three cheers for the Queen and Prince Albert—three cheers for Great Britain—three cheers for Mr. Bremner—three cheers for Mr. Montgomery and his lady, Matilda Montgomery, who were so kind to the passengers—three cheers for Lords de Roos and Roden, all of which were responded to in right good Irish style. The crew of the Birkenhead manned their yards and gave three loud cheers, which were returned in such a manner as Irishmen alone are capable of raising the "wild hurrah." All speculation as to the fate of the Great Britain was, from that moment, set at rest, and the noble vessel once again treads, "like a thing of life," her native element.

It was the intention of Captain Claxton at first to have brought her direct

to Liverpool, but in consequence of the leakage, and the fatigue of those on board, it was deemed advisable to make, in the first instance, for Belfast, and on Saturday afternoon she entered that port.

At 11 o'clock on Sunday morning, the rescued monster left Belfast towed by the Birkenhead. She had on board the Messrs. Bremner (to whom the credit of raising her is more especially due), Captain Claxton, a body of 90 men from Plymouth and Portsmouth, 40 men from the Birkenhead, and a body of 150 Irish labourers. She had on an average about five feet of water in her hold, and it was found necessary to ply the pumps during the whole of the voyage. Her rigging was gaily decorated with signals and other flags. She made throughout about $6\frac{1}{2}$ knots an hour, and at 7 o'clock on Monday morning was telegraphed in Liverpool off the Great Ormshead. At 9 o'clock she was off Voel Nant. The intelligence produced lively emotions of joy in the town, and the pier-heads were thronged by thousands of spectators. She reached Liverpool at half-past 1 o'clock, and was saluted with cannon from Seacombe; she was too distant to be greeted with the cheering with which she would otherwise have inevitably been received. She came in at the top of the tide, and was hauled without much delay to the gridiron in the Prince's-dock basin, where she at present securely lies. She had a temporary rudder, which it required six men to work. Her screw was observed in idle motion with the mere force of the water. With the exception of the breaking of a hawser, and some little damage from the Birkenhead running accidentally too close alongside, not the least accident occurred during the voyage.

Since the Great Britain's arrival at Liverpool, she has been thoroughly inspected, not only as regards the damage that has been done to her exterior plating, but also as regards the strength and durability of her hull and framework; and it gives us pleasure to be able to state, upon the authority of a most experienced engineer, that so far everything has appeared most encouraging for the owners. She is quite safe and sound in her hull and frames, not being the least shaken, strained, nor indicating in the slightest degree anything that would lead to the supposition that her back had been injured, whilst embedded in the sands of Dundrum Bay. It must be gratifying to the Messrs. Bremner, father and son, to behold their gallant charge safely docked in Liverpool, and to reflect that, in discharging their duty to her owners, they have conferred a lasting benefit on the principle of steam navigation.

PROGRESS OF DISCOVERY IN CENTRAL AFRICA.

While more than one state Government is exerting measures to mitigate the horrors of barbarity on the seaboard of Western Africa, a Liverpool merchant and a sea captain have penetrated to the interior, and have surveyed the highways not only to that inner region but to the civilization of Africa. Mr. Robert Jamieson, of Liverpool, has collected the means and planned the enterprise, with a disinterested perseverance and zeal for the discovery far above the mere trading spirit of the time. Mr. Becroft has immortalized himself as one of the most daring, most discreet, and most intelligent of English discoverers. In spite of the obstacles, and in

spite of the most disastrous mischances, Mr. Becroft has succeeded in establishing the fact that the interior is accessible for navigation and trades; he has thrown light on the interior navigation up to Timbuctoo, inasmuch that only 40 miles of the river remains to be explored—the part between Lever, his highest point, and Boussah, Park's lowest; the great waterway being the key to several regions of beautiful and fertile country, peopled by divers races, and affording opportunities for legitimate commerce of indefinite extension.

The lower Niger and its branches permeate an immense delta, containing thousands of miles of richly fertile and wooded country. The unhealthy climate extends only for a limited space inwards; and as you ascend the river the healthiness becomes equal to that of the Tropics generally. This region is inhabited by Negro races, warlike, rude, yet not destitute of civilization, and eager for trade. On the middle Niger, above Iddah, the inhabitants assume more of the Arab aspect, are more civilized, congregate in towns so large that one is mentioned which is computed to contain 20,000 inhabitants, but the people are less eager for trade. They are prejudiced against strangers from the West by the Arab dealers who come to them in caravans across the continent, and strive to exclude rivals from the market. This prejudice, however, does not seem to be very powerful; and the trade which can repay the toilsome transit across the continent by land is sure to remunerate traders who come by the comparatively short and easy path of the river.

The requisites for a successful trade with the inhabitants of the Niger are now well ascertained by the experiences of Mr. Becroft and his fellow voyagers in the *Ethiops*, steamer. First, you want iron steamers of less draught and greater engine-power; for by such vessels not only the Niger but its Tshaddah branch might be navigated at almost all seasons of the year. You want officers like Mr. Becroft, of hardy constitutions, inured to the climate, of brave spirit, discreet and shrewd. You want trading managers capable of accommodating their manners to the wayward dealings of a rude people, and able to estimate the value of produce little known. You want crews mostly of African blood, and at all events of sufficient stamina to bear the climate. It is obvious that efficiency of navigation, the power to move rapidly, and tact in dealing with the natives, are requisites far more important than mere armed force. Ivory, vegetable tallow, peppers, indigo, cotton wool, palm oil, a sort of caravances or haricot beans, dye woods, timber woods, skins, and a great variety of produce that is but slightly known, invite the trader. The sole desideratum is thorough efficiency in the means of navigating the river; and it is evident that a commerce of indefinite extension will repay any sums laid out in thoroughly establishing that efficiency of navigation.

Of course, the free blacks educated in the West Indian trade will become useful workmen in penetrating the native land of their race. We must depend, at least for generations to come, on the black race to supply the bulk of the crew. It is, however, doubtful how far these legitimate trading measures can be carried on conjointly with the armed measures on the coast. The cruising system not only keeps up the jealousy and shyness of the native tribes, but fosters all sorts of jealousy among the rival cruisers. Mr. Becroft encountered some impediments to his exploration of the Gaboon River, from a French commandant, who suspected him of territorial objects, and had been making "treaties" with the native chiefs, conferring some kind of territorial right on the French. All this is very idle. The natives are too rude to make treaties worth any European consideration; but they have a productive country, and perfect freedom of commerce would soon instil ideas

into their minds which they can never derive from treaty-making mummeries, or forcible interference with their free trade in slaves.—*Spectator*.

THE BARRIER REEF OF AUSTRALIA.

The reef was about a quarter of a mile wide, and ran nearly due N. and S. for several miles. It appeared, indeed, to stretch to the horizon in both directions, the breaks in its continuity being so narrow as to be barely perceptible. A fresh breeze was blowing from the S.E., and rather a heavy sea running outside. The water was perfectly clear, and of great and almost unfathomable depth right up to the outer slope or submarine wall of the reef. The long ocean swell being suddenly impeded by this barrier, lifted itself in one great continuous ridge of deep blue water, which, curling over, fell on the edge of the reef in an unbroken cataract of dazzling white foam. Each line of breaker was often one or two miles in length, with not a perceptible gap in its continuity. After recovering from this leap, and spreading for some distance in a broad sheet of foam, the wave gradually swelled again into another furious breaker, of almost equal height and extent with the first, and then into a third, which, although much less considerable, yet thundered against the bows of the wreck with a strength that often made her very timbers quiver. Even then the force of the swell was not wholly expended, two or three heavy lines of ripple continually traversing the reef, and breaking here and there against the knobs and blocks of coral that rose higher than usual. There was a simple grandeur and display of power and beauty in this scene, as viewed from the fore-castle of the wreck, (about 30 feet above the water), that rose even to sublimity.

The unbroken roar of the surf, with its regular pulsation of thunder, as each succeeding swell first fell on the outer edge of the reef, was almost deafening, yet so deep-toned as not to interfere with the slightest nearer and sharper sound, or oblige us to raise our voices in the least. Both the sound and the sight were such as to impress the mind of the spectator with the consciousness of standing in the presence of an overwhelming majesty and power, while his senses were delighted by the contrast of beautiful colours afforded by the deep blue of the ocean, the dazzling white of the surf, and the bright green of the shoal water on the reef. The reef, when closely examined, appeared to consist of a sandy floor, on which were thickly-clustered clumps of coral, scattered closely, but irregularly about it. The corals appeared principally wounded masses of *astræa* and *mæandrina*, covered with their green-coloured animals in a state of expansion: there were, however, many finger-shaped madrepores of beautiful purple colours, and leaf-like expansions of explanaria and other branching corals. These were now generally covered with from one to four feet of water, but some masses were level with its surface. The whole was chequered with spaces of white sand, had a bright grass-green hue when viewed from a distance, and when looking down on it from the poop of the wreck, might have been likened to a great submarine cabbage-garden.—*Jukes's Surveying Expedition of H.M.S. Fly*.

MURDER OF THE CAPTAIN AND PART OF THE CREW OF AN ENGLISH VESSEL.

The following details are from *The Commercio del Plata*:—On Saturday, the 3rd of July, the English brig *Avon*, of Liverpool, appeared in front of our port, and anchored outside; she did not enter or communicate with the shore till yesterday, the 5th. It was then ascertained that she comes from the river Santa Cruz, coast of Patagonia, where events as extraordinary as lamentable have befallen her. The following are the particulars we have collected, extracted from the ship's log, and related by the individuals on board of the vessel, the only sources of information at present available:—

The *Avon*, Captain John Eaton, proceeded from Liverpool to Patagonia in search of minerals. She arrived at her destination about eight months ago, and has had, since then, frequent and friendly communication with the Indians who occupy the regions touched at. When in the bay known by the English as Watchmans Cape, and which is in the 48th degree of south latitude, Capt. Eaton made a contract to carry some cargo further south. On his way to the point agreed on, he entered the river Santa Cruz, whose mouth and port are in 50° S., chiefly to water. He had been there on previous occasions, and maintained frequently intercourse with the Indians of the right or southern bank of that river. On the 13th of May last, one of the sailors, who had gone on shore for the purpose of arranging the purchase of some horses, made signal for the boat to be sent to him. Capt. Eaton went in person, and entered into communication with the Indians on the left bank, who, although they had formerly shown themselves less well disposed than those of the right, received him, nevertheless, in a friendly manner, and even requested to be allowed to go on board. Five of them accordingly accompanied the captain. In the meantime, Mr. Randall, the mate, James Daniels, steward, James M'Mullin, and John Stewart, seamen, and James Watson, an apprentice, went ashore in the launch, taking with them some useless horses to change them for others. The captain, finding that they delayed a long time, shouted to them from the ship; no answer being made, he fired off a pistol to call their attention, but no one appeared. Then one of the Indians on board spoke in his own language to those on shore, and immediately afterwards the sailors were seen running into the water, attempting to escape from the Indians. The mate (Randall) and a sailor were drowned, another sailor was killed by a shot from the Indians, and the remaining three were carried off prisoners.

While this was passing on the coast, the five Indians on board suddenly attacked the rest of the people, consisting of six men, including the captain. They killed the latter in a most barbarous manner, wounded their second mate, George Wright, in the back, threw overboard Mr. William Douglas, the freighter of the vessel, and another person, both of whom they afterwards picked up out at sea, when they had killed the captain.

The second mate and the rest of the sailors then defended themselves. The Indians then became pacified, saying, in bad Spanish, mixed with worse English, that they would not kill the good sailors. "*Marinero bona no kill*," are their words, as entered in the log-book.

Soon after several Indians came off in a launch, steered by one of the captured sailors. They plundered the ship, giving the preference to articles of brass over everything else, even before gold and silver. The captain's body they threw into the sea, horribly mutilated, with the head almost severed from the trunk. They carried off Mr. Douglas, and left behind them on board ten or a dozen of their own people. On the following day they

returned in the boat, managed by the sailors, their prisoners. The current carried them away some distance from the *Avon*. They made the shore again, and again pushed for the ship, which they reached. They took off everything that had been collected by the Indians, which they had left on board the day before; made the sailors convey them on shore in the boat; and having disembarked themselves and their plunder, sent off the sailors who had not been attacked on shore; they remained with Mr. Douglas and the three men whom they had seized from the beginning.

The sailors having returned on board, put to sea for this port. The second mate (Wright), who has come in command of the vessel, is cured of his wound.

Such are the particulars which appeared in the log-book. The regularity of the statement, and the further details which we have heard from a competent person who examined the people on board, leave us no room to suspect their exactness, and much less since they affirm that Mr. Douglas, and three men are alive with the Indians.

AUSTRALIAN STEAM EXTENSION.

The following letter appeared in the *Times*, upon the subject of Steam Communication between the Islands of the Indian Archipelago, connecting them with the vast continent of India, and thence with England. The importance of such an undertaking and benefit likely to result from it, induce us to give these observations further publicity.

"SIR,—The extensions of a line of steam navigation to pass among the islands of the Indian Archipelago to the Australian colonies having been mentioned in your columns, I am induced to offer a few remarks on the subject. It has been observed (I think by Malte Brun) that where navigable rivers have been found useful as affording facility of conveyance between tropical and temperate regions, a profitable commerce has ensued; but that this is rarely possible on an extensive scale, the course of most large rivers being much more frequently longitudinal than latitudinal. Formerly the Euphrates as connected with the Persian Gulf, was indirectly available for such a purpose; the Nile, also, and the Ganges may be cited on a smaller scale; but no field so extensive and full of promise of profitable trade has presented itself to the enterprise of our countrymen, as the Archipelago between our Indian Empire and our incipient colonies of the south temperate zone. Under the powerful agency of steam, the calm waters of the Indian Sea are likely to be found even more available than those of any river could be for such a commerce; while the last extension of British power in India seems likely to support and encourage the development of the resources of these southern regions. Half the eastern coast of Australia is guarded by coral reefs, like the coast of Brazil; these reefs forming in both cases a natural breakwater, between which and the shore the water is smooth, and favourable therefore, for steam navigation in a latitudinal direction.

"Thus, there is free scope for a ready intercourse amongst the richest islands of the world, from both sides of the equator, through tranquil waters towards the southern pole. On one side are India and China, on the other the fertile temperate regions of Australia and New Zealand, comprising every variety of climate; much of the land being vacant and ready for British colonization. Other parts are peopled by docile inhabitants, for whose christianization and preservation Europe seems responsible. Whether England

shall be foremost in the field rests with herself. Accident, it would seem, rather than design, has placed her in that position now, and it appears desirable, for the welfare of the people of this country at least, that these magnificent regions should be made available and accessible to their enterprise and industry. Africa and Australia, two of the three great capes of the world shooting from the terrestrial mass into the Southern Ocean, seemed to be placed by Providence at the disposal of Great Britain, giving her a tripod position, as if for the accomplishment of ends of adequate importance—that she should originate in the East and far South some such colonial energy as her descendants now exhibit in the far West. From the intercourse of people inhabiting climates so different and distant, may we not expect that numerous new articles of commerce and new manufactures may be brought into use, and that thus ample occupation may be found for our rapidly increasing population? Such views as these might encourage enterprising capitalists to look in such directions for a profitable investment. Nor have they been wholly overlooked by men of enterprise and capital. Two gentlemen cruising in their yachts have found attractions enough to induce them to cast anchor upon some of these remote shores. Mr. Broke has already established a footing in that part precisely of the Indian Archipelago where one was most required for our trade. Mr. Boyd, in the *Wanderer*, had long previously penetrated still further southward, and boldly staked his capital on the fleece of Australia.

“There are islands wholly composed of coal, it is said in the vicinity of Borneo; Australia also abounds with the same material; also New Zealand; and it is impossible to entertain a doubt that amongst the many and mighty changes of which we of the present day witness only the beginning, one great importance to the future fortunes of the human race is to be effected in these seas through the agency of steam. The latest intelligence from Sydney apprises us that one of Mr. Boyd's vessels had arrived there with a cargo of indentured shepherds, natives of the islands of the Pacific, and that the ship had sailed for another; and thus probably the numerous inhabitants of the surrounding islands may in time mingle with the Anglo-Australians, and so become civilized denizens of the empire.

“The capabilities of soil in these newly-explored regions have still to be fairly tested; our mode of agriculture and horticulture acclimatized; and even for the purpose of doing this more hands are wanted. Nature seems to hold out every encouragement to man's agency in the fulfilment of her plans. The potato in the virgin soil of the southern shore of Australia assumes a large and spherical form, regularly dotted over with the eyes presenting what seems a more perfect root, being also of a better quality, than the best potatoes present, or possess in Europe. The charming prospect of a new and roomy country still under the exuberance of primeval nature has also a most vivifying effect on the new inhabitants from colder regions or crowded smoke capp'd cities, with the present free from care, and a future full of promise. The few British colonists already striking their roots as it were, into the soil of the south have, it must be admitted, experienced many checks, but they feel reviving hopes in this prospect of steam communication about to be extended even to them, thus to bring them much nearer to their father-land. As an Australian colonist, desirous to establish a closer connection with the press of the civilized world, and with *The Times* more than all, let me entreat you to encourage and stimulate, through the medium of its widely-extended influence, the good work of Australian colonization and steam conveyance.

“AUSTRALIENSIS.”

In connection with the above we extract the following from the *Nautical Standard*:—

STEAM TO AUSTRALIA.—Sir George Larpent, Bart., as Chairman of the Committee for extending Steam Communication between Australia, India, and England, has received information from Sydney, by the last mail, that the Legislative Council of New South Wales has voted 500*l.* per month out of the colonial revenue towards carrying out this great object, thus incontestably proving the anxiety of the southern colonies on the subject, which is not surprising, as they are the only portion of the empire excluded from the benefit of steam intercourse with England.

LONGITUDE OF NEW YORK CITY, BY MAGNETIC TELEGRAPH.

In the last Annual Report of the Superintendent of the Coast of Survey, there is given some account of the measures which has been adopted for the determination of the difference of longitude between New York, Philadelphia, and Washington, by the magnetic telegraph! A line of wires was extended last summer from the General Post Office in Washington, to the Naval Observatory; a wire was carried from the High School Observatory in Philadelphia, to the main Baltimore line; and another wire was carried from the Jersey City Telegraph Office, to a temporary observatory erected near the Presbyterian Church. The observations at Washington were under the direction of Mr. S. C. Walker; those at Philadelphia were made by Professor Kendall; and those at Jersey City by Professor Loomis. Each observer had at his command a good clock, and a transit instrument for regulating it with the greatest precision. The clocks being properly regulated, all which is needed for the determination of the difference of longitude between these three places is the exhibition of some signal that can be heard simultaneously at each station. This is afforded by the click of a magnet which is worked in the usual mode of telegraphic communications.—These experiments were commenced last season, but were only partially successful. Signals were exchanged between Philadelphia and Washington, on the 10th of October; but none were obtained from Jersey City.

We understand that these experiments have been resumed the present season, and that they have been crowned with success. The plan of operation we learn to be the following:—At ten o'clock in the evening when the usual business of the Telegraph Company is concluded, the three observatories above named are put in communication with each other. They then correspond in the ordinary mode of telegraphing, to ascertain whether the arrangements are perfect, and the observers are all ready. The observer at Jersey City then gives warning to prepare for the transmission of clock signals.

At the commencement of a minute by his clock, he strikes a key (like a key of a piano,) and a click is heard simultaneously at Jersey City, Philadelphia, and Washington. The observers at the three places record the time, each by his own clock. In 10 seconds, Jersey City again strikes the key; a click is heard, and all record the time. At the expiration of another 10 seconds a third signal is given in the same manner, and so on, to the number of 20 signals. After a pause of one minute, Philadelphia repeats the same series of signals, and all three observers record the time. After a similar pause Washington begins, and gives another series of 20 signals. Thus the three observers obtain sixty comparisons of their clocks, which ought to give their difference of time with almost perfect accuracy.

This method is beautiful in theory, and apparently very simple: but a great many disappointments have been experienced in reducing it to practice.

The difficulties have, however, been surmounted. On the evening of the 19th inst., twenty clock signals were transmitted from Jersey City, to Philadelphia, and the same number was returned. When the computations are complete for the exact determination of the time of the respective places, these observations will give the precise difference of longitude between Jersey City and the High School Observatory in Philadelphia. According to a hasty comparison, this difference amounts to *four minutes and thirty seconds*. Since the 19th inst., similar sets of signals have been repeatedly passed between Jersey City, and Philadelphia, and the comparisons will be continued until a further increase of accuracy is not to be expected.

This method of determining longitude was tried upon a small scale between Washington, and Baltimore, soon after the erection of the telegraph wire; with this important difference, however, that the comparison of time was made by means of a chronometer carried to the telegraph office. In the present experiments, the wire is continuous from the Philadelphia Observatory to the Jersey City Observatory; and the two clocks can be compared with about the same precision as if they were standing side by side in the same room.

It seems probable that this mode of determining longitude will supersede every other method, between places where a telegraph wire is erected. The time required for the passage of the electric fluid through the distance of a hundred, or even a thousand miles, is entirely inappreciable; and the comparisons can be repeated at pleasure, until a satisfactory result is obtained.

We understand it is the intention of the Superintendent of the Coast Survey, in due time, to extend this method to all the principal cities along our coast. We are not aware that this method has been attempted in any part of Europe.—*N. Y. Jour.*

PRINCELY PRESENT TO ADMIRAL SIR CHARLES OGLE.—The Commander-in-Chief at Portsmouth, who it will be remembered, entertained the Grand Duke Constantine of Russia upon several occasions when visiting that Port, has lately received from his Imperial Highness a chaste vase of the purest Porcelain china, standing on an urn pedestal, magnificently gilt. The vase is 33 inches in diameter on the top, and mounted on its pedestal is about 40 inches in height. On one side of this vase is represented the port of Cronstadt; on the other side, Neptune, in a chariot, drawn by four sea horses. On the foot of the pedestal is this inscription, "Presented by his Imperial Highness the Grand Duke Constantine of Russia, to Sir Charles Ogle, Bart., Commander-in-chief at Portsmouth, August, 1847." It is the well-known rule of the British service that no officer is to receive present or decoration without permission of Government. The Baron Brunow in consequence of this being intimated to him, communicated, through Lord John Russell, with Lord Auckland, and permission was at once granted. This superb testimonial will stand in the ante-room between the dining and drawing-room of the Admiralty House.

TREASURES OF THE DEEP.—Sir Cloudesly Shovill's ship's guns, about 30 in number, and several round and cross-bar shots were seen on the 17th inst., near a rock called the Gilstone, to the westward of the Scilly Islands, by a diver belonging to the cutter *Argyle*, *Moses*, of Jersey. He states that two of the guns could be raised with ease, but the remainder are covered over by a rock, apparently of about 30 tons weight, which must have fallen upon

them. He recovered two round shot of about 24lbs., and a cross-bar shot of some weight.

THE PORTLAND HARBOUR OF REFUGE.—The works in connection with this great undertaking commenced on Monday. We are informed that about 40 hands will be added weekly to the number now engaged, until the completion of the railway, which will be connected with the breakwater, and will convey the stone used in its formation from the top of the island.—*Nautical Standard.*

SOLUTION OF THE PROBLEM, in Vol. 1846, p. 548.—By Mr. John Burnett.

1st. The course by compass would be West, distance 187·551 miles. Parallel Sailing.

2nd. The course by the eye at starting would be N. $86^{\circ} 19' 1'' \cdot 26\frac{1}{2}$ W., gradually increasing to west at midway, and thence decreasing to S. $86^{\circ} 19' 1'' \cdot 26\frac{1}{2}$ W. at the western position, and the distance 187·413 miles.

3rd. The respective bearings at the two positions would be as above N. $86^{\circ} 19' 1'' \cdot 26\frac{1}{2}$ W. and N. $86^{\circ} 19' 1'' \cdot 26\frac{1}{2}$ E. the compass being true to the meridian.

As there is no variation named it is assumed that all the bearings are true.

The arc of a great circle passing through the Lizard in lat. $42^{\circ} 57' 40''$ North, long. $5^{\circ} 12' 10''$ West, and the Carvel Rock near St. Thomas's in lat. $18^{\circ} 18'$ North, long. $65^{\circ} 7'$ West.

Positions.	Latitude.			Longitude.			Courses.	Distance.
	°	'	''	°	'	''		
Lizard	49	57	40 N.	5	12	10 W.	° ' ''	
1st westward.	49	14	32	10	0	0	S. 76 58 45 W.	191·4
2nd	48	15	5	15	0	0	73 15 44	206·4
3rd	46	59	40	20	0	0	69 33 10	215·9
4th	45	26	45	25	0	0	65 52 55	227·4
5th	43	34	35	30	0	0	62 19 39	241·5
6th	41	21	0	35	0	0	58 53 0	258·4
7th	38	43	36	40	0	0	55 34 14	278·7
8th	35	40	0	45	0	0	52 27 32	301·3
9th	32	7	44	50	0	0	49 32 40	327·1
10th	28	4	50	55	0	0	46 53 14	355·4
11th	23	30	28	60	0	0	44 32 40	384·9
Carvel Rock	18	18	0	65	7	0	42 32 3	424·0

Distances by the Courses on the Arc 3412·4

Course by Mercator's Sailing S. $56^{\circ} 47' 8''$ W. distance 3467·2

Saved by sailing on this Arc 55·5 miles

The Spherical distance on this Arc is 3412·05 miles, differing very little from that worked out to every fifth meridian, upon the various courses as shewn above. The courses being true, must be corrected for variation, &c.

The arc of great circle from abreast scilly in lat. $49^{\circ} 50' N.$, long. $6^{\circ} 20' W.$, to lat. $40^{\circ} 30' N.$ and long. $67^{\circ} 30' W.$, being the nearest great circle, (passing through those two spots,) to the passage from Scilly to New York.

Positions.	Latitude.			Longitude.			Courses	Distance.	
	°	'	"	°	'	"			
Abreast of Scilly	49	50	0	N.	6	20	0	W.	
1st westward	50	15	52		10	0	0	N. 79 37 28 W.	143·4
2nd	50	39	21		15	0	0	82 59 24	192·6
3rd	50	49	50		20	0	0	86 50 24	190·1
Highest Lat.	50	50	27		21	34	17	} S. 89 17 34 W.	189·6
4th	50	47	28		25	0	0		
5th	50	32	11		30	0	0	85 17 55	190·8
6th	50	3	40		35	0	0	81 32 10	193·7
7th	49	21	25		40	0	0	77 42 46	198·1
8th	48	24	33		45	0	0	73 55 17	205·2
9th	47	11	55		50	0	0	70 10 12	214·1
10th	45	42	5		55	0	0	66 30 25	225·3
11th	43	53	16		60	0	0	62 55 26	239·6
12th	41	43	30		65	0	0	59 58 25	255·4
At Sea in	40	30	0		67	30	0	56 57 37	134·8

Distance by the Courses on the Arc 2572·7

Course by Mercator's Sailing, S. $77^{\circ} 44' 54'' W.$ distance 2638·96

Saved by sailing on this Arc 66·26 mile

The Spherical distance on this Arc is 2572·58 miles, being a very small difference from that worked out to every fifth meridian upon the various courses as shewn above, (the courses are all true,) and have to be corrected for variation, &c.

THE MASTIFF.—We take the following letter containing an account of the recent accident to the *Mastiff*, from the columns of that excellent naval paper *The Nautical Standard*. Having ourselves received intelligence on the subject, we can safely vouch for the accuracy of the statement of "One of the Mastiff's." But, we may add to it, that the *Mastiff* was obliged to resort to the deep, and unsheltered bay of Otterswick, in Sanday Island, for the purposes of the survey of that island, and North Ronaldska, which somehow had been left to be done by the former commander of the *Mastiff*, who wisely preferred the safe anchorage of the other islands, to the open bay of Sanday. We may also add, that the only boat of the *Mastiff* that could land her heavy stores, was detached on duty, at the time of the accident, several miles away, on the eastern side of the island; thus rendering the employment of the two shore-boats essential to the safety of the ship, which was so admirably effected by her officers and crew, and whom we heartily congratulate on the success which crowned their labours.

We understand that having had some small repair at Stromness, the

Mastiff will proceed to the Forth, to resume the survey of that river, commenced in the spring.

H.M.S. Mastiff, Stromness, September 4th, 1847.

SIR,—The extreme severity of the gale on Sunday, the 22nd, has not been equalled for a period of twenty years in these islands, which are noted for a great share of bad weather. It has been most disastrous, and amongst the casualties, we have suffered severely; but by the exertions of captain and crew the ship has been got off from her very perilous position, and is now safe at Stromness, waiting a reply from the Admiralty, to be allowed to go on the patent slip at this place.

The morning was calm and showery, and as usual, divisions, muster, &c., and liberty men sent on shore by eleven o'clock. At this time the wind was north 3 coq. At noon it had increased to 6 coq., when the top-gallant-masts were struck, yards pointed to the wind, and men sent to their dinners; the ship being well moored. All thoughts of the cables snapping never were anticipated, but at 1h. 30m. P.M. a most terrific squall struck the ship, parting small bower, and shortly afterwards the best bower, drifting the ship on to a skerry at the head of the bay; although the sheet anchor was let go, and a good scoop on it, yet without effect. The sea increased with the wind, making a fair breach over her, as she lay broadside to it on the rocks. Everything was done that could be:—lower yards got down, and as soon as it was safe, top-gallant masts, and all the spars got on deck, by Monday at noon; nothing stood but lower masts; and by Tuesday at noon all the stores, provisions, tanks, chain-cables, &c., were all out. (and except tanks which were fixed to the ship's bottom,) landed safely. The stream anchor was laid out, and a six-inch hawser made fast to our tender, for the purpose of heaving ship off, the stream backed by a 12-pounder carronade. At 7 P.M. succeeded in slewing the ship's head to N.N.E., but the tide falling, left us in a worse position, with her stern-post high up on the rocks, and bow in deep water. Shores were got on port side, but carried away; the ship falling over, resting on one of her bow tanks. The mainmast was now cut away to ease the ship, otherwise she must have gone over on her beam ends, and bilged.

All night, and until 11 P.M. next day, was employed in throwing ballast overboard, which was difficult to get at, owing to the ship lying so much over; the ports were caulked in, and hatches battened down. At noon she listed still farther than the former ebb, crushing the bow-tank, but which still kept her from falling on her broadside: the suspense of these two hours was very trying. Every officer and man holding on, indeed lying on their backs on the deck, the word having been passed for not one to move, the slightest movement being expected to be the means of her going over. At 2 P.M. we felt much relieved by finding the tide had commenced flowing; but it appeared an age, until the water was sufficiently under the bilge to water-buoy her. It was now very doubtful if the ship would lift, owing to the bow tank being crushed; but all the boats were lashed to the lee bow, in helping to lift, and at 4 P.M. (although the water came nearly to the comings of fore hatch,) we had the satisfaction to find her lifting, and the water receding from her decks. A tank was now filled, and hoisted out of the water at the bowsprit end for the purpose of depressing bow, and lifting stern, the purchases hove as taut as they would bear, and the men employed getting fore-cap and top down, in case the ship should not come off; but whilst engaged in the above, we were gratified by finding her slip quietly into the water. Never were countenances brightened more suddenly, although from beginning to end (which was no trifle, from 1 P.M. on Sunday, until 8 P.M.

on Wednesday,) the men had worked with a determination and cheerfulness I have never seen surpassed, striving against each other to do best,—the commander showing an example, which I trust he will get due credit for, never leaving the deck, indeed having but two hours rest on the cabin floor, the whole time of our being on the skerry.

When it is taken into consideration, that with the exception of employing two shore boats to land cables, &c., all this service was performed by the ship's crew, and that the ordering tanks to be fitted to lift the ship, and indeed, all the work, was carried out by the commander, who attended personally to everything, encouraging and doing all man could do—surely he deserves great credit; and I, myself, look back on it as a piece of work seldom equalled. If these hastily written lines meet a place in your useful paper, they may be the means of quieting the minds of many interested in the *Mastiff*, and crew, and show that perseverance will overcome what are often deemed impossibilities; indeed, although Sanday is famous for wrecks, and the Sanday people are experienced in assisting vessels off, yet all we saw agreed, if we succeeded, it would be wonderful with our limited means.

I am, Sir, very truly yours,
ONE OF THE "MASTIFFS."

THE AMERICA, 50, Captain Sir Thumas Maitland, got on shore on a pinnacle-pointed rock, lying about two thirds of a mile S.S.W., true bearing from from the centre of the Bource Rocks off the south end of the Bayona Islands, at the entrance of Vigo. She had the head pilot of Vigo on board at the time. The rock was not known to exist before; there were 15 fathoms close to at the time she struck. She drew about 20 feet.

"The 6th of September is the day appointed for the squadron to sail for a short cruise."

NAUTICAL NOTICES.

LIGHTS OF ST. GEORGE AND CAPE ST. BLAS, *Florida*.—*Caution to Seamen.*
 SIR.—Will you be so good as to give this publicity in the *Nautical Magazine* for the better information of my countrymen. I also beg to inform you that the old lighthouse which was injured some time ago still remains on Dog Island, therefore, there is with the new lighthouse, two buildings standing, and a stranger not knowing this on making Dog Island, might think it was not the eastern pass. I also enclose you an account of the re-lighting of Cape Florida lighthouse, which was destroyed by the Indians in the Indian war in Florida, which I gave you an account of very soon after it occurred.

I remain, Sir,

JOSEPH CORNFORTH,
Master of the ship Rothschild of Liverpool.

As a very old subscriber, I wish shipowners would be so good as to send the *Nautical* on board of their ships as a Library.

[We regret that this communication has been so long in appearing, but the delay appears to have been unavoidable.—ED.]

"*Port of Apalachicola, May 28th, 1847.*

"It is the intention of the United States Government to erect two New light-

houses in this district, some time in the next Autumn, one at Cape St. George and the other at Cape St. Blas. The former is about 17 miles west of Dog Island light, the latter about 17 miles west of St. Georges light, at the entrance of our harbour. The tower will be about 90 feet high, and may be seen 15 or 18 miles at sea, by vessels navigating the gulf, in going to or from New Orleans to the Tortugas.

"Yours respectfully,

"JAMES W. SPENCER, Collector."

"To J. Cornforth Esq., ship Rothschild."

DYER ISLAND REEF.

Accounts have been received at the Admiralty, of a reef, apparently extending south-westerly from Dyer Island, which lies 30 miles to the westward of Cape Agulhas. H.M. Sloop *Pilot*, on her passage from the East Indies, to Simon's Bay, on the 10th of July last, was steering N.N.W. for Cape Hanglip, when at 4h 10m. A.M. breakers were reported ahead. The ship was promptly wore, but she slightly touched in coming round, though by the time she had come to the wind, the water had deepened to 14 fathoms. The anchor was then dropped, and the following compass bearings were taken from her anchorage.

Cape Hanglip	N.N.W.
The Bluff inside of Danger Point	N. $\frac{1}{2}$ E.
Extremes of Dyer Island.	N b.E. to N.E b.E. $\frac{1}{2}$ E.
Extreme of the Eastern Reef	E.N.E.
South Bluff	S.E.
South extreme of low land	S.E.b.S.

The distance of that anchorage from Dyer Island was estimated at 500 yards; and the spot on which the vessel touched, was considered by Capt. Wilson, to be about 400 yards from the Island.

As the track of the *Pilot* was that which is generally followed by vessels mooring along the coast, between Cape Agulhas and Simons Bay, it will be as well to add a few remarks, as a caution to the mariner; not to make too free with that part of the shore. Mr. Walker, the Queen's Harbour Master at Plymouth, who formerly commanded H.M. Store Brig *Dispatch*, employed between Simons and Algoa Bays, observes "Danger Point, is a low peninsular point of land running out from the main, about six miles in a W.S.W. direction; a ledge of rocks extend from it in the same direction, nearly two miles, on which the sea breaks heavily. This point was formerly known as Bluff Point, but very improperly, as the high land which appears at a distance like a bluff, is at least, three leagues inside of it. Dyer Island is low, and sandy, surrounded apparently with rocks, on which the sea breaks with great fury."

The Agent to Lloyd's at Wellington, New Zealand, in a letter dated 17th, December last, states that the moorings laid down in the roadstead at Taranaki, have been carried away, and that in consequence the roadstead is more than usually hazardous for vessels, that no vessel can remain there in a north-wester, the prevalent wind.

PILOT STAFF AT TAMPICO.—The following directions to masters of vessels entering the Bay of Tampico, published by the recently established United States Pilots there, has been forwarded to Lloyds. *Directions.*—As several vessels have run great risks in coming in towards the Bar of Tampico, you

will please give notice to masters that there are the U.S. Pilots at the bar, and that as soon as a vessel shows herself a boat goes out to meet her; but should the bar be too rough to pass, a black flag will be hoisted on the north point, and the vessel will either anchor in 8 fathoms, or stand off. Should vessels by accident get so close in as to have to run in or to go on shore, a boat will come as near as possible and point with a flag in what direction to steer. Bring the houses on the north point to bear W.N.W., and they will be off the mouth of the channel. If it be safe for vessels to stand in, a white flag will be hoisted; but only when it is impossible to get over the bar will the black flag be hoisted. When it is really possible to cross, a boat will be off the bar from daylight till dark.

ROCK OFF LOCH CLAY, Hebrides or Lewis Islands.—On the 30th of August Mr. W. H. Burke commanding the *Kite*, revenue cruiser, discovered a rock near the entrance of Loch Clay, in a position which it might be supposed would have made it familiarly known long since, but of which it appears his pilot had no knowledge or suspicion, although he had been more than a hundred times in and out of the Loch. The rock is about 200 feet in length N.N.W. and S.S.E., and about 100 feet in width, having 5 feet water on its shoalest part at low water neap tides. It bears south (magnetic) a little more than half a mile from the western entrance point of Loch Clay, and when on the rock Valumis point bears S.E., and the Isle of Glash lighthouse point S.W. $\frac{3}{4}$ W., (magnetic). The soundings about the rock are very irregular, and there are from 10 to 13 fathoms in its immediate neighbourhood. A buoy has been placed on the rock.

Colonial Secretary's Office, Adelaide, March 23rd, 1847.

INVESTIGATOR'S STRAITS.—His Excellency the Lieutenant-Governor has been pleased to direct that the following Minute, relative to a Harbour of Refuge in Investigator's Straits, be published for general information.

By his Excellency's command,

A. M. MUNDY, *Colonial Secretary.*

[*Minute.*]

"I beg to call the attention of mariners navigating Investigator's Straits to the advantages presented by a large bay situated upon the southern coast of Yorke's peninsula, nearly midway between Troubridge shoal and Cape Spencer, a place of refuge for shipping on meeting with south-westerly and westerly winds, when bound to the westward, or indeed during a north-easter, if bound to Port Adelaide.

"In Flinder's chart, this bay is represented as surrounded by shoals, to the extent of three or four miles from the shore. Flinder does not appear to have examined the soundings minutely, and the line of shoal ground is laid down rather as conjectural, than as having been ascertained. It has, however, deterred navigators from entering into the bay, except the more venturesome engaged in the whaling business. In reality the shoals do not exist. The bay may be approached with safety; and good anchoring ground will be found near the western shore in 7 fathoms, sandy bottom, at about one mile from the beach; in 4 fathoms at about half that distance. On the eastern shore of the bay, near Troubridge hill, the water is deep, and a vessel

may approach within a quarter of a mile of the beach before obtaining soundings with 7 fathoms of line.

"The western shore of the bay is formed by a promontory of low sand hills, clothed with grass and trees, (the oak) terminating in a flat rocky point, which forms an effectual breakwater during south-west gales. Under lee of this point ships may ride at anchor in smooth water, with every facility for getting under way whenever the wind becomes favourable. Although the bay is open to the south and south-east, winds from those quarters, owing to the narrowness of the strait, do not raise a sea sufficient to impede a vessel in waying anchor.

"Mariners bound to the westward, meeting adverse winds in the Straits, occasionally seek shelter under lee of Point Marsden, or in Nepean Bay, or they bear up for Port Adelaide. In either case, much more time and distance is lost than by resorting to the bay in question.

"For convenient reference hereafter, I purpose assigning to this bay the name of Sturt, and to the low sandy point forming the western part of it, that of Davenport.

"The wooded sandhills on Point Davenport may be about 40 to 50 feet in height; and at about half a mile inland are salt water lagoons, dry in summer. Fuel wood may be obtained easily, as well as grass for cattle embarked; and I have very little doubt that fresh water would be obtained in sinking wells on the shore above high water mark. If so, Sturt's Bay will be found to be of importance in the conveyance of stock to Port Lincoln."

"FRED. H. ROBE, *Lieutenant Governor*,"

"*Government House, Adelaide, 24th March, 1847.*"

Trinity-house, London, August 24th, 1847.

BEACON ON THE TONGUE SAND.—This Corporation having caused a standing beacon surmounted by a ball, to be erected upon the Tongue Sand in fifteen feet at low water spring tides, the following marks and compass bearings, which have been taken at its position, are hereby made public, viz:

Moncton beacon twice its length open to the eastward of	
Lower Hale Grove	S.S.W.
The easternmost of the two mills at Margate, between the	
two white chimnies of the New Baths	S.S.E.
North-east Tongue buoy and Shingles beacon in line	N. $\frac{1}{2}$ E.
East Tongue buoy	E.b.S.
North Foreland lighthouse	S.S.E. $\frac{1}{2}$ E.
By Order	J. HERBERT, <i>Secretary.</i>

Trinity-house, London, August 26th, 1847.

GOODWIN SANDS.—*Marks on their Eastern side*—Notice is hereby given that in order more effectually to denote the line of the Goodwin Sands upon their eastern side, this Corporation has caused an additional beacon and buoy as hereunder described, to be placed thereon, viz.—

A Standing beacon, near the edge of that part of the Sand which dries at low water spring tides, and is called the South Calliper;—this beacon is painted black, and is surmounted by a cage, the top of which is 40 feet above the ordinary level of high water,—the marks and compass bearings thereat being

St. Peter's Church in line with the north end of the trees of East Cliff Lodge	North
Ramsgate church, and Albion tavern in line	N. $\frac{1}{2}$ W.
Waldershare tower, its width open north of Ripple mill	W.b.N. $\frac{1}{2}$ N.
North Foreland lighthouse	N. $\frac{1}{2}$ E.
Swathway beacon	N.E. $\frac{3}{4}$ E.
Gull Light vessel	N. $\frac{1}{2}$ W.
South-east Goodwin buoy	S.W.
South Sand Head Light vessel	WS.W.
South Foreland High Light vessel	W. $\frac{3}{4}$ S.
A large Nun buoy, coloured Red, and bearing a staff with a triangular top, has been placed off the north-east part of the Sands, in eleven fathoms at low water spring tides, with—	
St. Lawrence Church on with the Royal Hotel at Ramsgate	N.W.
Upper Deal mill, on with the south side of the Naval Hospital	W. $\frac{1}{2}$ S.
South Foreland High Lighthouse, its length on with the cliff northward of St Margaret's Bay	S.W.b.W. $\frac{3}{4}$ W.
North Foreland Lighthouse	N.b.W. $\frac{3}{4}$ W.
Gull Light vessel	W.b.N.
North Sand Head or Goodwin Light vessel	N.N.E. $\frac{1}{2}$ E.
Swathway beacon	S.S.W. $\frac{1}{4}$ W.
And in order to equalize its position between the South Sand Head light vessel and the beacon upon the South Calliper, the large Black Nun buoy bearing a staff and globe <i>has been moved</i> nearly a mile to the southward of its former position: it now lies in 12 fathoms at low water spring tides, with	
The clock of the Naval Hospital midway between Chitty's mill and lower Walmer mill	N.W. $\frac{1}{2}$ N.
Ringwold Church, on with Mr. Curling's house at Kingsdown	N.W.b.W. $\frac{1}{2}$ W.
South Sand Head Light vessel in line with the South Foreland High Lighthouse	West
South Calliper beacon	N.E.
By order	J. HERBERT, Secretary.

NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

ARCAS CAY, *Gulf of Mexico*, Capt. Barnett, 1843. Price 6d.

TRIANGLES, *Obispo Shoals, Gulf of Mexico*, Capt. Barnett, 1843. Price 6d.

RIVER SHANNON, *Sheet I., Com. Wolfe*, 1845. Price 3s.

EXAMINATION OF MASTERS AND MATES IN THE MERCHANT SERVICE.

We are not enabled in our present number to give any additional list of officers who have been examined since the list issued by the Board of Trade on the 9th of June last. Up to that time we find a complete list of the Masters and Mates who have been examined and obtained Certificates of Qualification from the commencement of the voluntary system in 1845, has been published in Lloyd's Register of British Shipping, for the year 1847-8.

As, however, from the want of an alphabetical arrangement, the public were not enabled readily to find the names of those officers, for whom a particular interest may justly have been felt, the committee for managing the affairs of Lloyd's Register Book, in order to obviate this difficulty, as well as to give all the facility in their power to the active working of the system, have just issued a list alphabetically arranged, and we have much pleasure therefore, in subjoining it to these observations.

Campbell, D.	2nd	36	Medway, 1000 tons (<i>as second officer</i>)	175936	Portsmouth	12 Feb. 1847
Carter, John	3rd	44	Wensleydale 245 tons	.....	S. Shields	7 Jan. —
Carvell, John	3rd	29	Norfolk, 349 tons ... (<i>as mate</i>)	10073	London	1 April —
Case, R. J.	1st extr	38	Caledonia, 281 tons	.....	Liverpool	20 April —
Clendon, Philip	2nd	30	.....	.....	Newcastle	8 Mar. —
Close, Robert	2nd	...	Olympus, 314 tons ... (<i>as mate</i>)	.....	London	27 Mar. 1846
Cockburn, T. F.	2nd	35	Forth, 1147 tons ... (<i>as chief officer</i>)	336545	Portsmouth	16 April, 1847
Cooper, James	1st	...	Cowlitz, 400 tons ... (<i>as mate</i>)	.....	London	9 Sept. 1846
Corrigall, John	2nd	24	Ruth, 245 tons	.....	S Shields	10 Feb. —
Criddeford H.	2nd	28	Nile, 283 tons ... (<i>as mate</i>)	57399	London	7 June, 1847
Cunningham, J.	3rd	37	Columbia, 229 tons	.....	S. Shields	3 Oct. 1846
Dando, A. C.	2nd	24	St. Vincent, 628 tons (<i>as mate</i>)	162	London	19 April 1847
Davidson, W. A.	2nd	33	Eling Grove, 351 tons (<i>as mate</i>)	4130	London	19 April —
Davidson, A.	3rd	...	Lord Panmure	.....	Dundee	2 Dec. 1845
Davies, J. A.	2nd	31	Constant, 535 tons (<i>as mate</i>)	.....	London	7 June, 1847
Davison, B.	2nd	26	Huron, 271 tons ... (<i>as mate</i>)	.....	S. Shields	30 Jan. —
Davison, R.	2nd	45	Hylton, 231 tons	.....	S. Shields	8 April —
Deecker, G. W.	2nd	...	.....	.....	London	6 Jan. 1846
Dent, Edwin G.	1st	...	.....	.....	London	28 Nov. 1845
Ditcham, E. L.	1st	23	Dahlia, 100 tons	.....	London	30 Oct. 1846
Dixon, Joseph	2nd	46	Doncaster, 246 tons (<i>as mate</i>)	.....	S. Shields	1 April 1847
Doutty, W. C.	1st	46	Princess Royal 543 tons	.....	London	20 May —
Down, Henry	1st	...	Bombay, 1400 tons (<i>as mate</i>)	.....	London	25 Aug. 1846
Downes, S. T.	1st extr	33	Caledonia, 1200 tons (<i>as second officer</i>)	170128	Liverpool	9 Feb. 1847
Downward, W.	1st	28	Albert Edward, 327 tons	258141	Liverpool	27 April —
Duncan, John	2nd	37	Memnon, 245 tons	.....	S. Shields	14 Jan. —
Duncan, W.	1st	25	Glamis Castle, 342 tons	.....	Dundee	13 Oct. 1846
Dunn, W. M.	2nd	...	.....	.....	Newcastle	8 Jan. 1847
Dye, T. F.	2nd	23	Eclipse, 540 tons ... (<i>as mate</i>)	4268	London	14 April —
Edwards, O.	1st	...	Macedon, 529 tons (<i>as chief mate</i>)	8697	London	4 July, 1846
Ellerby, John	1st	24	Gilmore, 500 tons ... (<i>as mate</i>)	19977	London	5 Feb. 1847
Elliott, John	2nd	29	Brack, 217 tons	.....	S. Shields	6 Mar. 1847
Ellis, John	1st	30	Martha, 248 tons	.....	Liverpool	26 Jan. 1847
Elmstone, C. T.	2nd	25	Joseph Some, 774 tons (<i>as mate</i>)	324297	London	30 April —
Emery, James	2nd	30	Late Mate of the ... Earnest, 184 tons	45388	S. Shields	5 Feb. 1846

Fenton James	2nd	23	Enterprize, 313 tons (as mate)	158498	Liverpool	16 Mar. 1846
Fergus C.S.	1st	.....	.....	.....	Glasgow	19 May —
Fletcher, John	3rd	38	Brothers, 155 tons... (as mate)	.....	S. Shields	12 Sept. —
Foster, Thomas	2nd	30	Hopewell, 268 tons	.....	S. Shields	3 Sept. —
Freeman, Ben.	2nd	22	Duchess Northum- berland, 541 tons...	329040	London	13 May, 1847
Freer, William	2nd	29	Curraghmore, 381 tons, (as mate)	34767	London	26 May, —
Garnock James junr.	1st	25	Hope 330 tons	.....	Liverpool	20 Feb. —
Gibb, George	3rd	36	Grantham, 227 tons	.....	S. Shields	20 Aug. 1846
Giffney, J. R.	1st	34	Angerona, 731 tons	.....	Liverpool	9 Jan. 1847.
.....	extr	.....	.....	.....	.....	.....
Gowland, Josh junr.	2nd	27	Granger, 318 tons... (as mate)	14087	S. Shields	19 Mar. 1846
Gray, William	1st	...	Vera	.....	Dundee	17 Nov. 1845
Gray, W. D.	2nd	24	Orator, 325 tons ... (as mate)	15455	London	29 April, 1846
Grebow, W. H.	1st	35	W. Murray, 146 tons	.....	Liverpool	26 Jan. 1847
Grebow, Henry Frederick	1st	34	Hopkinson, 396 tons	164172	Liverpool	2 Mar. —
Gribble, Charles	2nd	30	Ocean Queen, 737 tons (as mate)	32828	London	4 Jan. —
Grieve, Edm.	3rd	32	St. Lawrence 236 tons (as mate)	.....	S. Shields	17 Feb. 1846
Hadler, Thomas Henry	2nd	24	Viscount Sandon, ... 540 tons (as mate)	129081	London	7 June, 1847
Harons, John	2nd	33	Ruth, 245 tons ... (as mate)	.....	S. Shields	1 Mar. —
Harper, T.	2nd	28	Pomona, 284 tons... (as mate)	.....	S. Shields	18 Jan. —
Harris, G. D.	2nd	27	Vanguard, 346 tons (as mate)	6259	London	15 June, 1846
Harrison, Wm.	2nd	25	Stamfordham, 236 tons	.....	S. Shields	9 April, —
Harrison, Wm.	1st	34	Acadia, 1400 tons...	.....	Liverpool	9 Jan. 1847
.....	extr	.....	.....	.....	.....	.....
Hart, Henry T.	2nd	27	Africa, 277 tons.....	.....	London	1 June, —
Harvey Wm.	1st	27	Sarah Fleming, 324 tons (as mate)	.....	S. Shields	4 Sept. 1846
Hay, John	2nd	26	Cowan, 241 tons ...	.....	S. Shields	13 Mar. 1847
Heard, Richard	1st	30	William, 181 tons...	.....	Gt. Yarmth	8 Jan. —
Heddle Wm.	2nd	30	Archipelago, 281 ... tons (as mate)	86160	S. Shields	21 Oct. 1846
Hederstedt, W.	3rd	29	Oriental, 1673 tons (as quarter master)	262437	London	19 Oct. —
Hellyer, Edwin.	2nd	...	Kallibokka, 380 tons (as mate)	14449	London	8 Oct. —
Henderson K. J.	2nd	22	.....	.....	Newcastle	25 Mar. 1847
Henry, L.	3rd	23	Placidia, 198 tons...	.....	S. Shields	7 Nov. 1846
Herbert, Henry Arthur	2nd	36	Lee, 120 tons (as mate)	327668	London	28 Oct. —
Hewison, Wm.	2nd	.....	.....	.....	S. Shields	26 Mar. 1847
Hind, John	1st	27	Caledonia, 1400 tons (as first officer)	108020	Liverpool	2 Feb. --
.....	extr	.....	.....	.....	.....	.....
Hinson T. G.	1st	.....	.....	.....	London	6 Jan. 1846

(To be Continued.)

TABLE SHewing THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stubbington, near Fareham,
Hants.—September, 1847.

Day of Month	A. M.		P. M.																							
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12		
1	WSW												12	12	10	12	12	10	NNW						NNE	
2																										
3																										
4										WSW			5	11	12	12	10	5	5	5	5	5	5	5	10	10
5	NNN	10	10	5	5	5	5	10	12	12	22	17	22	22	22	22	17	13	10							
6																										
7						WSW		10	13	12	15	20	22	22	25	22	25	25	22	20	10	15	10	10		
8					W		10	10	12	12	15	17	20	27	15	12								15	15	17
9		15	17	17	15	12	12	12	12	12	12	17	20	20	12	20	20	15	12	10	12					
10										SW	10	12	22	22	25	27	25	28	17	12	10					
11																										
12														15	10	10	3	3		NE						
13																										
14				10	10	15	15	17	15	12	15	17	17	12	12	10	10				12	12	10	5	5	
15					10	12	17	17	15	17	17	20	20	20	17	17	15	15	15	17	10	10	12	10		
16	15	15	12	10																						
17																										
18																										
19								12	15	12	12	12	12	12	12	12	12	10	5							
20																										
21																SW	12	17	15	17	15					
22										W	15	15	5	5	5	5	5	5			NNW					
23						NE																				
24													12	22	22	17	22	17	15	15	3	3				
25									10	10																
26																										
27																	W	10	5	5	5					
28																	WSW	10	5	5						

29	.....									
30	.....									
31	.....									

TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—SEPT., 1847.

A.M.	1	2	3	4	5	6	7	8	9	10	11	12
160172	.0172	.0172	.0172	.0172	.	.	.
220172	.0172	.0086	.	.	.	.	.
250086
Total0344	.0344	.0258	.0172	.0172	.	.	.0086
P.M.												
40086	.0086	.0086	.0086	.0086	.	.
8	.	.0344	.0344	.0344	.0344	.	.	.	.	.	.	.
Total	.	.0344	.0344	.0344	.0344	.0086	.0086	.0086	.0086	.0086	.	.

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—SEPT., 1847.

Miles	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	.	90	87	6	.	.	.	.	.	.	346	507	605	.	.	209
No. of hours	}	9	66	.	.	.	.	.	.	.	24	36	52	.	.	15
Velo. pr hr.	}	10	13	.	.	.	.	.	.	.	14	14	11.9	.	.	13
Amt. Rain,	}	.	0.95	.	.	.	.	.	.	.	.	.043	.181	.	.	344

Considering from 6 A.M to 6 P.M. *day*, and from 6 P.M. to 6 A.M. *night*, we have 1828 miles the amount of wind during the *day*, and 783 during the *night*. .207 inches the amount of rain during the *day*, and .073 during the *night*. Total wind 2611 miles, rain .285 inches. The greatest amount of rain was from N.N.W.

The number of hours during which the rain fell was 18; and the number of hours during which the amount of wind is recorded is 202, during 542 hours it was calm.

TO CLEAN GOLD LACE EPAULETTES, &c.—Mix half a dram of liquid ammonia with half a pint of water, wash the gold lace with it, and afterwards wash it with pure water, until there is no smell of the ammonia; by this means, all the bronze or green tarnish about the lace will be removed, as it is owing to the oxide of copper, which will be dissolved by the ammonia; but the ammonia will not touch the gold or silver, or injure the texture of the lace.—*Patent Journal*.

[We hope to be pardoned for deviating in this instance from our general rule in reprinting the above; it may be a hint worth knowing to many of our readers, therefore venture to rest our apology on the motive we have in view.—*Ed.*]

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

COMMANDERS—R. D. White—W. n. Jones and E. Wilmot on the retired list of 1830.

APPOINTMENTS.

COMMANDERS—R. Moorman to *Hecate*—H. Dumaresq to *Kite*—R. C. Mitchell to *Devastation*—W. Morris to *Arab*—E. Wilmot to *Superb*.

LIEUTENANTS—S. Morrish to *Asia*—N. B. Bedingfield to *Hecate*—H. Warren to *Kite*—G. J. Gardner to command the *Oberon*—C. Haydon to command the *Spider*—H. D. Selby to *Arab*—J. F. Kennedy to *Excellent*—W. Amphlett and H. S. Hillyar to *Asia*—R. Robertson to *William and Mary*.

MASTERS—R. B. Mudge to *Arab*—D. N. Welch to *Trincomalee*.

ACTING-MASTER—E. Skead to *Shearwater*.

SECOND-MASTERS—W. H. Mallard to *Hecate*—W. H. Osmond to *Antelope*—C. Fox to *Victory*—G. Richards to *Kite*—F. T. Jameson to *Asia*—W. G. Sturges to *Oberon*—C. J. P. Simpson to *Spider*.

SURGEONS—W. McCrea to the Banana Islands Hospital—W. Roberts to *Hecate*.

ASSISTANT-SURGEONS—R. P. Sparrow to *Dolphin*—T. J. Breen to *Hecate*—R. Hastings to *Cumbrian*—H. F. Williams and H. Slade to the Banana Islands hospital—J. Bradshaw to *Fury*—C. A. Robinson and J. M. Holman to *Asia*.

MIDSHIPMEN—W. D. S. Wortley and T. M. W. Wynyard to *Ocean*—C. H. Johnstone to *Constance*—L. Barstow to *Trincomalee*—W. G. H. Johnstone and J. R. Simcoe to *San Josef*—J. P. Smallpage to *Excellent*—J. G. Cresswell to *Victory*—R. H. G. Helps to *Amphitrite*—F. Parke to *Vengeance*—E. H. Buck to *Vixen*.

NAVAL CADETS—E. W. Price to *Trincomalee*—F. J. Shaw and A. J. Johnstone to *Asia*—P. A. Mackery to *Tralfalgar*—W. D. D. Selby to *Amphitrite*—G. W. O. B. Victor to *Cambrian*.

PAYMASTERS AND PURSERS—F. Gransore to *Arab*—J. Warden to *Excellent*—E. B. Robins to *Hecate*.

CLERKS—H. D. L. P. Bailly to *Oberon*—J. Singleton to *Spider*—S. Fisher to *Arab*—R. Hire to *Vindictive*.

BIRTH, MARRIAGES, AND DEATHS.

Birth.

On the 8th of Sept. the lady of Mr. E. Dunsterville, R.N., of the Admiralty, of a son.

Marriages.

On the 11th Sept., at Ryde, Isle of Wight, C. Tennant, esq., to Gertrude, the eldest daughter of Capt. H. Collier, R.N.

On the 2nd Sept. at Marylebone, T. Frazer, surgeon, R.N., to Emma, eldest daughter of J. D. Watt, esq., Assistant Commissary General.

Deaths.

On the 14th Sept., at Southsea, Rear Admiral Bloye, C.B., suddenly, which circumstance had such an effect on Mrs. Bloye, that in a few hours afterwards causing her demise.

On the 13th Sept., at Tichfield, Commander E. Crouch, R.N., aged 31 years.

On the 1st Sept., in London, after a long and painful illness, Sir R. Dobson, M.D., F.R.S., Inspector of Hospitals.

On the 25th Aug., Lieut. S. Colston, R.N., at Arthurstown, leaving a widow and seven children.

It is with extreme regret we have to announce the death of the Rev. Dr. William Pearson, L.L.D., rector of South Kilworth, in the 81st year of his age. This highly

gifted and talented gentleman, besides leading a life of uncommon excellence, has published several very valuable works on astronomy, which he has presented to the Astronomical Society of London, of which he was the founder and *Father*, in order that after his decease, they may be distributed gratis to the members of that society of which he was for many years the leading member and supporter, and by which as well as by a large circle of friends, his loss will be deeply and sincerely regretted.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory,
From the 21st of August, to the 20th of September, 1847.

Month	Day	Barometer		Fahrenheit Thermometer				Wind.				Weather.		
		In Inches and Decimals.		In the Shade.				Quarter.		Strength.		A.M.	P.M.	
		9 A.M.	3 P.M.	9AM	3PM	Min	Max	A.M.	P.M.	A.M.	P.M.			
		In Dec	In Dec											
21	S.	29.97	29.91	63	74	52	76	NW	SW	1	2	bm	b	
22	Su.	29.72	29.71	65	66	56	66	SW	SW	4	3	op 2)	o	
23	M.	29.94	30.00	53	59	49	60	N	N	5	5	qop 2)	qbc	
24	Tu.	30.13	30.16	55	53	50	64	N	N	5	3	o	o	
25	W.	30.15	30.12	59	66	51	69	N	N	4	2	qo	bc	
26	Th.	30.21	30.23	63	67	58	70	N	N	4	2	bc	bc	
27	F.	30.32	30.32	59	73	51	75	NW	N	1	1	bcm	bcm	
28	S.	30.36	30.30	60	74	55	74	W	NW	1	1	bcm	bcm	
29	Su.	30.20	30.14	59	68	55	69	NW	N	2	2	ber 1) (2)	bc	
30	M.	30.10	30.06	54	63	50	64	NW	W	1	2	bm	bcm	
31	Tu.	30.00	30.04	59	63	55	64	NW	NW	4	3	o	bc	
1	W.	29.92	29.82	56	65	48	66	SW	SW	4	6	bc	qbcp 3)	
2	Th.	29.83	29.91	56	58	48	62	NW	NW	6	5	qo	qbcp 3)	
3	F.	29.98	29.83	50	53	44	56	W	SW	3	5	op (2)	qop (3 4)	
4	S.	29.85	29.89	50	57	46	58	NW	NW	3	2	bc	bc	
5	Su.	29.87	29.87	49	59	40	60	W	NW	2	2	bcm	bcm	
6	M.	29.88	29.92	51	58	43	60	NW	NW	4	3	bc	bc	
7	Tu.	29.99	29.93	50	60	41	63	SW	W	3	3	b	bcp (4)	
8	W.	29.85	29.88	58	61	53	62	SW	NW	1	2	otp 2)	bcp (3)	
9	Th.	30.10	30.12	53	67	39	67	SW	SW	1	1	bc	bc	
10	F.	30.16	30.18	58	65	52	68	SW	SW	2	3	bc	bc	
11	S.	30.16	30.12	58	64	53	66	N	N	1	1	bcm	bcm	
12	Su.	29.96	29.93	59	66	49	67	SW	SW	4	5	bc	qo	
13	M.	29.82	29.82	62	54	54	67	SW	N	1	3	o	or (3) (4)	
14	Tu.	29.92	29.92	52	58	45	59	W	W	1	2	b	bc	
15	W.	29.95	29.92	55	60	42	61	W	W	4	3	bcmr 4)	bep 3)	
16	Th.	29.41	29.41	59	62	51	63	W	W	8	8	bcq	or 3)	
17	F.	29.55	29.31	55	54	45	60	W	W	6	5	oqr 2)	or (3)	
18	S.	29.51	29.62	51	53	44	56	W	W	5	5	bc 2)	bcp 3)	
19	Su.	29.97	29.96	46	57	38	58	NW	W	2	2	bcm 4)	ber (1)	
20	M.	29.72	29.76	54	61	48	60	W	W	3	4	bc	bcp 3)	

August, 1847.—Mean height of the Barometer = 30 inches; Mean temperature = 56.6341 degrees; depth of rain fallen = 2.33 inch.

TO OUR CORRESPONDENTS.

We are unavoidably obliged to reserve the remaining part of the list of Masters and Mates who have passed examination for our next number.

Our old friend and correspondent "STORMY JACK" we are heartily glad is come to life again, he has our best wishes.

The communication from the "COMMANDER OF THE BARQUE MAJIN" shall receive attendance.

Hunt, Printer, 3, New church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

NOVEMBER, 1847.

MARITIME LIGHTS ON THE COAST OF SPAIN.

[An official Notification has been received, intimating the intention of the Spanish Government, by Royal Decree, to establish a new general plan of Light-houses on the Coast of Spain and adjacent Islands. It is to be carried into effect within five years at a cost of 20,000,000 reals (£200,000); authorizing also the imposition of a general Light Tax on every ton, of all vessels entering Spanish ports. The following is a translation of the Report of the Minister of Commerce, with that of the Royal Decree, and the places fixed on for carrying out this important ordinance.]

Ministry of Commerce, Instruction and Public Works.

MADAM.—The service of Light-houses, deficient and imperfect on our coasts and harbours, as it is extensive and well-organised in all civilized states, has succeeded at length in obtaining from Your Majesty's Government the full attention which it has long called for, as an object of the highest interest for the prosperity of our commerce, and not less beneficial to other nations, and even to the whole human race.

Until a recent period, the Light-houses of Spain were left to local superintendence; and to such an extent was the want of system carried, that the vigilance of the Government was never exerted, unless when called upon to enforce the tax intended for their erection and maintenance. It is owing to this deplorable negligence that a nation which was so long reckoned as a maritime power of the first order, and which is yet destined by nature to recover its former rank in that respect, does not at this moment reckon twenty light-houses on its extensive coasts and numerous harbours. It is true, that through the care of those who have more immediately felt the consequences of such neglect, such as our light-houses are, they have satisfied to a certain extent the wants of navigation in the localities where they are situated; but it is not less certain that the interests of general navigation have been hitherto neglected or totally forgotten. This is shewn by the want of light on the

capas and principal points of landing on our coasts, which in the opinion of native and foreign navigators, require it with a decided preference.

The cause indicated being admitted as the principal reason of our backwardness in maritime illumination; it was felt by the Government that it ought to be considered as one of the most important duties of the State; and in order to apply a proper remedy to the incompleteness of the assistance afforded by the existing lights to the security of navigation, the discussion and proposition of fit measures were entrusted to a special permanent commission, which was formed for that effect by Royal Ordinance issued in accordance with the Admiralty Department, by the Department then in charge of Public Works, among which Light-houses are everywhere included.

The above commission, composed of persons competent by their intelligence and consummate experience, have given their opinion in a full and well considered statement, presenting as the result of the continued deliberations which preceded their memorial, a "General Plan of Maritime Illumination for the Coasts and Harbours of Spain, and the adjacent Islands," based upon the most ample local information, united to a knowledge of the aids presented by science to realise, with all the perfection of which it is susceptible, an improvement as important as it is desirable.

In the subjoined statement or summary of the above-mentioned plan, the places are given where it is proposed to establish the 105 lights of all classes intended for the general illumination of the coasts and harbours, which will be aided by a large number of buoys and sea marks, assigned to those sites where it is recognized that their assistance is required for shipping.

With the adoption of this plan it is not however intended to fix the particular point where each Light-house should be placed; because, with the exception of some which have been previously studied in the same localities, and of those now existing, which are inserted in their places in the statement, they require frequent surveys, with a necessary knowledge of local circumstances, to determine the proper points, and at the same time to unite in each proposed case, so far as practicable, the circumstances which may best serve to fulfil the conditions of the adopted plan. Persons in the public service, and other necessary aids, are available for these objects, so that the execution of many lights may be prepared without delay; the plans being formed in anticipation of the funds to be produced by the credit to this effect, which will be included in the general business of the state.

From what is stated, it may be inferred, Madam, that the cost of the new plan of Light-houses cannot be estimated very exactly. Nevertheless, the considerations developed by the Commission in the above-mentioned memorial lead to a result, which if it cannot inspire that degree of certainty which is given by data more approximating to the reality, may suffice to shew that the whole cost of the first establishment will not exceed twenty millions of reals.

But supposing this first sacrifice made, which is light, if compared with the immense benefits it must secure, and not difficult to be made, if carried over the four or five years required by the construction and

establishment of all the light-houses comprehended in the plan, it is indispensable to provide for their good management and preservation, by organizing in the first instance a body of attendants of sufficient skill and intelligence, and by securing at the proper time the additional means necessary to fulfil the object. If the former is easy to be obtained, as little difficulty luckily will there be found in respect to the amount of cost which will be required. The items composing the amount are known, as well from the experience of what has been done in other countries, as from the cost in our own. The sum, therefore, now fixed to cover the annual expense of this important service is 1,200,000 reals.

Your Majesty will observe with satisfaction that so signal a benefit is to be obtained without increasing in a sensible degree the dues which are now paid for similar objects, but under different forms and denominations in all our ports. Their amount in the last year reached to about 800,000 reals, it may, consequently, be expected that when this duty shall be made to bear more equally upon all maritime commerce, native and foreign, although the Treasury cannot at present provide for it by the general produce of other taxes, its produce may be increased, as indicated by certain statistical data, without causing any greater pressure on the generality of contributors, than they now suffer with the irregularities already indicated.

With regard to the small local lights comprehended in the general plan, and some others of the same class which may subsequently require to be augmented, the undersigned minister is of opinion that the case is not yet arrived to determine whether their cost shall fall upon the respective villages or communities, or whether it should be included in the general cost of the Light-houses; but it appears right to state at once the principle of equity which the commission has pointed out for the first case which consists in exempting from the general taxation the boats of the above indicated communities, which shall be under so many tons burden, in compensation of the cost of light charged upon them, and which therefore, in this respect, must be obligatory.

It follows, then, that the execution of the entire new plan of Light-houses will require, at the highest estimate, a first sacrifice of 20,000,000 reals; it is probable, moreover, that the cost of the buoys and sea marks comprised in the same plan, may be covered without adding to that amount.

The undersigned Minister; judging from what has been stated, and considering the laudable example given to us by nations more advanced, in the increase and improvement of those lights which serve by night as a guide to navigators, that they may avoid the hidden rocks and dangers which environ them as they near the land, considering the damage accruing to the national honour from our profiting in other countries by advantages we cannot offer in our own, either to natives or to foreigners; the losses which, under these circumstances, are suffered on our shores, as frequent as in their irreparable consequences they are fatal, notwithstanding the dues paid by all vessels arriving in our harbours to obtain an advantage which they do not receive; and finally, convinced that the proposed measure will satisfy as completely as possible a duty which

houses in this district, some time in the next Autumn, one at Cape St. George and the other at Cape St. Blas. The former is about 17 miles west of Dog Island light, the latter about 17 miles west of St. Georges light, at the entrance of our harbour. The tower will be about 90 feet high, and may be seen 15 or 18 miles at sea, by vessels navigating the gulf, in going to or from New Orleans to the Tortugas.

"Yours respectfully,

"JAMES W. SPENCER, Collector."

"To J. Cornforth Esq., ship Rothschild."

DYER ISLAND REEF.

Accounts have been received at the Admiralty, of a reef, apparently extending south-westerly from Dyer Island, which lies 30 miles to the westward of Cape Agulhas. H.M. Sloop *Pilot*, on her passage from the East Indies, to Simon's Bay, on the 10th of July last, was steering N.N.W. for Cape Hanglip, when at 4h 10m. A.M. breakers were reported ahead. The ship was promptly wore, but she slightly touched in coming round, though by the time she had come to the wind, the water had deepened to 14 fathoms. The anchor was then dropped, and the following compass bearings were taken from her anchorage.

Cape Hanglip	N.N.W.
The Bluff inside of Danger Point	N. $\frac{1}{2}$ E.
Extremes of Dyer Island.	N b.E. to N.E. b.E. $\frac{1}{2}$ E.
Extreme of the Eastern Reef	E.N.E.
South Bluff	S.E.
South extreme of low land	S.E.b.S.

The distance of that anchorage from Dyer Island was estimated at 500 yards; and the spot on which the vessel touched, was considered by Capt. Wilson, to be about 400 yards from the Island.

As the track of the *Pilot* was that which is generally followed by vessels mooring along the coast, between Cape Agulhas and Simons Bay, it will be as well to add a few remarks, as a caution to the mariner; not to make too free with that part of the shore. Mr. Walker, the Queen's Harbour Master at Plymouth, who formerly commanded H.M. Store Brig *Dispatch*, employed between Simons and Algoa Bays, observes "Danger Point, is a low peninsular point of land running out from the main, about six miles in a W.S.W. direction; a ledge of rocks extend from it in the same direction, nearly two miles, on which the sea breaks heavily. This point was formerly known as Bluff Point, but very improperly, as the high land which appears at a distance like a bluff, is at least, three leagues inside of it. Dyer Island is low, and sandy, surrounded apparently with rocks, on which the sea breaks with great fury."

The Agent to Lloyd's at Wellington, New Zealand, in a letter dated 17th, December last, states that the moorings laid down in the roadstead at Taranald, have been carried away, and that in consequence the roadstead is more than usually hazardous for vessels, that no vessel can remain there in a north-wester, the prevalent wind.

PILOT STAFF AT TAMPICO.—The following directions to masters of vessels entering the Bay of Tampico, published by the recently established United States Pilots there, has been forwarded to Lloyd's. *Directions.*—As several vessels have run great risks in coming in towards the Bar of Tampico, you

will please give notice to masters that there are the U.S. Pilots at the bar, and that as soon as a vessel shows herself a boat goes out to meet her; but should the bar be too rough to pass, a black flag will be hoisted on the north point, and the vessel will either anchor in 8 fathoms, or stand off. Should vessels by accident get so close in as to have to run in or to go on shore, a boat will come as near as possible and point with a flag in what direction to steer. Bring the houses on the north point to bear W.N.W., and they will be off the mouth of the channel. If it be safe for vessels to stand in, a white flag will be hoisted; but only when it is impossible to get over the bar will the black flag be hoisted. When it is really possible to cross, a boat will be off the bar from daylight till dark.

ROCK OFF LOCH CLAY, Hebrides or Lewis Islands.—On the 30th of August Mr. W. H. Burke commanding the *Kite*, revenue cruizer, discovered a rock near the entrance of Loch Clay, in a position which it might be supposed would have made it familiarly known long since, but of which it appears his pilot had no knowledge or suspicion, although he had been more than a hundred times in and out of the Loch. The rock is about 200 feet in length N.N.W. and S.S.E., and about 100 feet in width, having 5 feet water on its shoalest part at low water neap tides. It bears south (magnetic) a little more than half a mile from the western entrance point of Loch Clay, and when on the rock Valumis point bears S.E., and the Isle of Glash lighthouse point S.W. $\frac{3}{4}$ W., (magnetic). The soundings about the rock are very irregular, and there are from 10 to 13 fathoms in its immediate neighbourhood. A buoy has been placed on the rock.

Colonial Secretary's Office, Adelaide, March 23rd, 1847.

INVESTIGATOR'S STRAITS.—His Excellency the Lieutenant-Governor has been pleased to direct that the following Minute, relative to a Harbour of Refuge in Investigator's Straits, be published for general information.

By his Excellency's command,

A. M. MUNDY, *Colonial Secretary.*

[*Minute.*]

"I beg to call the attention of mariners navigating Investigator's Straits to the advantages presented by a large bay situated upon the southern coast of Yorke's peninsula, nearly midway between Troubridge shoal and Cape Spencer, a place of refuge for shipping on meeting with south-westerly and westerly winds, when bound to the westward, or indeed during a north-easter, if bound to Port Adelaide.

"In Flinder's chart, this bay is represented as surrounded by shoals, to the extent of three or four miles from the shore. Flinder does not appear to have examined the soundings minutely, and the line of shoal ground is laid down rather as conjectural, than as having been ascertained. It has, however, deterred navigators from entering into the bay, except the more venturesome engaged in the whaling business. In reality the shoals do not exist. The bay may be approached with safety; and good anchoring ground will be found near the western shore in 7 fathoms, sandy bottom, at about one mile from the beach; in 4 fathoms at about half that distance. On the eastern shore of the bay, near Troubridge hill, the water is deep, and a vessel

may approach within a quarter of a mile of the beach before obtaining soundings with 7 fathoms of line.

"The western shore of the bay is formed by a promontory of low sand hills, clothed with grass and trees, (the oak) terminating in a flat rocky point, which forms an effectual breakwater during south-west gales. Under lee of this point ships may ride at anchor in smooth water, with every facility for getting under way whenever the wind becomes favourable. Although the bay is open to the south and south-east, winds from those quarters, owing to the narrowness of the strait, do not raise a sea sufficient to impede a vessel in waying anchor.

"Mariners bound to the westward, meeting adverse winds in the Straits, occasionally seek shelter under lee of Point Marsden, or in Nepean Bay, or they bear up for Port Adelaide. In either case, much more time and distance is lost than by resorting to the bay in question.

"For convenient reference hereafter, I purpose assigning to this bay the name of Sturt, and to the low sandy point forming the western part of it, that of Davenport.

"The wooded sandhills on Point Davenport may be about 40 to 50 feet in height; and at about half a mile inland are salt water lagoons, dry in summer. Fuel wood may be obtained easily, as well as grass for cattle embarked; and I have very little doubt that fresh water would be obtained in sinking wells on the shore above high water mark. If so, Sturt's Bay will be found to be of importance in the conveyance of stock to Port Lincoln."

"FRED. H. ROBE, *Lieutenant Governor*,"

"*Government House, Adelaide, 24th March, 1847.*"

Trinity-house, London, August 24th, 1847.

BEACON ON THE TONGUE SAND.—This Corporation having caused a standing beacon surmounted by a ball, to be erected upon the Tongue Sand in fifteen feet at low water spring tides, the following marks and compass bearings, which have been taken at its position, are hereby made public, viz:

Moncton beacon twice its length open to the eastward of	
Lower Hale Grove	S.S.W.
The easternmost of the two mills at Margate, between the	
two white chimnies of the New Baths	S.S.E.
North-east Tongue buoy and Shingles beacon in line	N. $\frac{1}{2}$ E.
East Tongue buoy	E.b.S.
North Foreland lighthouse	S.S.E. $\frac{1}{2}$ E.
By Order	J. HERBERT, <i>Secretary</i> .

Trinity-house, London, August 26th, 1847.

GOODWIN SANDS.—*Marks on their Eastern side*—Notice is hereby given that in order more effectually to denote the line of the Goodwin Sands upon their eastern side, this Corporation has caused an additional beacon and buoy as hereunder described, to be placed thereon, viz.—

A Standing beacon, near the edge of that part of the Sand which dries at low water spring tides, and is called the South Calliper;—this beacon is painted black, and is surmounted by a cage, the top of which is 40 feet above the ordinary level of high water,—the marks and compass bearings thereat being

St. Peter's Church in line with the north end of the trees of East Cliff Lodge	North
Ramsgate church, and Albion tavern in line	N. $\frac{1}{2}$ W.
Waldershare tower, its width open north of Ripple mill	W.b.N. $\frac{1}{2}$ N.
North Foreland lighthouse	N. $\frac{1}{2}$ E.
Swathway beacon	N.E. $\frac{3}{4}$ E.
Gull Light vessel	N. $\frac{1}{2}$ W.
South-east Goodwin buoy	S. W.
South Sand Head Light vessel	WS W.
South Foreland High Light vessel	W. $\frac{3}{4}$ S.
A large Nun buoy, coloured Red, and bearing a staff with a triangular top, has been placed off the north-east part of the Sands, in eleven fathoms at low water spring tides, with—	
St. Lawrence Church on with the Royal Hotel at Ramsgate	N.W.
Upper Deal mill, on with the south side of the Naval Hospital	W. $\frac{1}{2}$ S.
South Foreland High Lighthouse, its length on with the cliff northward of St Margaret's Bay	S.W.b.W. $\frac{3}{4}$ W.
North Foreland Lighthouse	N.b.W. $\frac{3}{4}$ W.
Gull Light vessel	W.b.N.
North Sand Head or Goodwin Light vessel	N.N.E. $\frac{1}{2}$ E.
Swathway beacon	S.S.W. $\frac{1}{2}$ W.
And in order to equalize its position between the South Sand Head light vessel and the beacon upon the South Calliper, the large Black Nun buoy bearing a staff and globe <i>has been moved</i> nearly a mile to the southward of its former position: it now lies in 12 fathoms at low water spring tides, with	
The clock of the Naval Hospital midway between Chitty's mill and lower Walmer mill	N.W. $\frac{1}{2}$ N.
Ringold Church, on with Mr. Curling's house at Kingsdown	N.W.b.W. $\frac{1}{2}$ W.
South Sand Head Light vessel in line with the South Foreland High Lighthouse	West
South Calliper beacon	N.E.
By order	J. HERBERT, Secretary.

NEW CHARTS.

(Published by the Admiralty, and sold by R. B. Bate, 21, Poultry.)

ARCAS CAY, *Gulf of Mexico*, Capt. Burnett, 1843. Price 6d.

TRIANGLES, *Obispo Shoals, Gulf of Mexico*, Capt. Barnett, 1843. Price 6d.

RIVER SHANNON, *Sheet I., Com. Wolfe*, 1845. Price 3s.

EXAMINATION OF MASTERS AND MATES IN THE MERCHANT SERVICE.

We are not enabled in our present number to give any additional list of officers who have been examined since the list issued by the Board of Trade on the 9th of June last. Up to that time we find a complete list of the Masters and Mates who have been examined and obtained Certificates of Qualification from the commencement of the voluntary system in 1845, has been published in Lloyd's Register of British Shipping, for the year 1847-8.

As, however, from the want of an alphabetical arrangement, the public were not enabled readily to find the names of those officers, for whom a particular interest may justly have been felt, the committee for managing the affairs of Lloyd's Register Book, in order to obviate this difficulty, as well as to give all the facility in their power to the active working of the system, have just issued a list alphabetically arranged, and we have much pleasure therefore, in subjoining it to these observations.

Name of Party who has received the Certificate	Class of Certificate.	Age	Present or last previous Service.	No. of Register Ticket	Where Exam.	When.
Abbott, George	1st	40	Dee, 1700 tons (as mate)	26218	London	6 May, 1847
Abbott, George	2nd	39	Dee, 1350 tons (as chief mate)	.....	Portsmouth	26 Feb. —
Alcock, Alex.	2nd	...	.....	.....	London	8 Dec. 1845
Allen, William	2nd	48	Duke of Clarence ... 229 tons	.....	S. Shields	23 Mar. 1846
Allen, William	1st	36	Dee, (as commander)	.....	Leith	15 Feb. 1847
Andrews, W. S.	1st	32	Medway, 844 tons...	.....	Portsmouth	29 Mar. —
Arkley, David	1st	...	Nile, 287 tons	70509	Dundee	10 Aug. 1846
Armstrong, G.	3rd	...	Grange, 290 tons ... (as mate)	10461	London	27 Mar. —
Asbridge, T. W.	1st	24	Rajah Bassa, 450... tons (as first mate)	38122	Liverpool	2 Mar. 1847
Atkinson, W.	2nd	28	Dorothy, 244 tons (as mate)	.....	S. Shields	3 June —
Ballard, W.	2nd	29	Rumbold, 96 tons ... (as mate)	187623	Yarmouth	25 Jan. —
Barker, Charles	2nd	29	Vigilant, 226 tons...	.....	S. Shields	27 Aug. 1846
Barrett, James	2nd	...	Queen, 127 tons ... (as mate)	70928	Plymouth	13 Mar. —
Beach, T. C.	2nd	32	Graham, 402 tons	324155	London	16 May, —
Beblington, D.	3rd	31	Ann's Resolution,... 157 tons	.....	S. Shields	2 Jan. 1847
Bell, John	2nd	29	Stork, 313 tons (as mate)	.....	S. Shields	3 June, 1847
Bevis, T. A.	1st	24	Emperor, 672 tons (as mate)	227953	London	18 Feb. 1846
Binnie, R. H.	2nd	34	Princess Royal, 564 tons	.....	London	30 April, 1847
Blyth, P. D.	2nd	24	Cressy, 730 tons ... (as mate)	33326	London	17 Feb. 1846
Booth, J. B.	1st	32	Britannia, 1200 tons (as mate)	328959	London	17 Dec. —
Bourchier, H. P. P.	2nd	...	Id. Wm. Bentinck 1800 tons (as mate)	346545	London	17 Sep. —
Bower, David	1st	30	Concord, 287 tons...	.....	Dundee	30 Jan. —
Bowery, W.	2nd	26	Elizabeth, 231 tons	.....	S. Shields	18 May, —
Broomfield J.	2nd	...	.....	.....	London	6 Jan. —
Brown, David	2nd	32	Topaz, 254 tons	238298	S. Shields	29 Jan. —
Brown, Peter	1st	40	Ecuador, 394 tons...	.....	London	15 Jan. —
Brown, Francis Edmund	2nd	28	Benj. Buck Greene 528 tons (as mate)	6189	London	24 May, 1847
Bruce, John	2nd	28	Granger, 318 tons	.....	S. Shields	6 Mar. 1846
Bruce, Thomas	3rd	26	Dione, 112 tons .....	.....	S. Shields	24 Nov. —
Butterwick, M.	2nd	...	Stratford, 344 tons (as mate)	25654	London	5 Oct. —
Cadell, Francis	1st	25	.....	.....	Glasgow	6 May, 1847
Caithness, H.	2nd	26	Useful, 214 tons .....	.....	S. Shields	14 Jan. 1846
Campbell, W.O.	1st	38	Cambrisa, 1400 tons (as mate)	344117	Liverpool	28 Nov. —
	extr					

Campbell, D.	2nd	36 Medway, 1000 tons (<i>as second officer</i>)	175936	Portsmouth	12 Feb. 1847
Carter, John	3rd	44 Wensleydale 245 tons	.....	S. Shields	7 Jan. —
Carvell, John	3rd	29 Norfolk, 349 tons ... (<i>as mate</i>)	10073	London	1 April —
Case, R. J.	1st extr	38 Caledonia, 281 tons	.....	Liverpool	20 April —
Clendon, Philip	2nd	30 .....	.....	Newcastle	8 Mar. —
Close, Robert	2nd	... Olympus, 314 tons ... (<i>as mate</i>)	.....	London	27 Mar. 1846
Cockburn, T. F.	2nd	35 Forth, 1147 tons ... (<i>as chief officer</i>)	336545	Portsmouth	16 April, 1847
Cooper, James	1st	... Cowlitz, 400 tons ... (<i>as mate</i>)	.....	London	9 Sept. 1846
Corrigall, John	2nd	24 Ruth, 245 tons .....	.....	S Shields	10 Feb. —
Criddeford H.	2nd	28 Nile, 283 tons	57399	London	7 June, 1847
		(<i>as mate</i>)			
Cunningham, J.	3rd	37 Columbia, 229 tons .....	.....	S. Shields	3 Oct. 1846
Dando, A. C.	2nd	24 St. Vincent, 628 tons (<i>as mate</i>)	162	London	19 April 1847
Davidson, W. A.	2nd	33 Eling Grove, 351 tons (<i>as mate</i>)	4130	London	19 April —
Davidson, A.	3rd	... Lord Panmure .....	.....	Dundee	2 Dec. 1845
Davies, J. A.	2nd	31 Constant, 535 tons (<i>as mate</i>)	.....	London	7 June, 1847
Davison, B.	2nd	26 Huron, 271 tons ... (<i>as mate</i>)	.....	S. Shields	30 Jan. —
Davison, R.	2nd	45 Hylton, 231 tons .....	.....	S. Shields	8 April —
Deecker, G. W.	2nd	.....	.....	London	6 Jan. 1846
Dent, Edwin G.	1st	.....	.....	London	28 Nov. 1845
Ditcham, E. L.	1st	23 Dahlia, 100 tons .....	.....	London	30 Oct. 1846
Dixon, Joseph	2nd	46 Doncaster, 246 tons (<i>as mate</i>)	.....	S. Shields	1 April 1847
Doutty, W. C.	1st	46 Princess Royal 543 tons	.....	London	20 May —
Down, Henry	1st	... Bombay, 1400 tons (<i>as mate</i>)	.....	London	25 Aug. 1846
Downes, S. T.	1st extr	33 Caledonia, 1200 tons (<i>as second officer</i>)	170128	Liverpool	9 Feb. 1847
Downward, W.	1st	28 Albert Edward, 327 tons	258141	Liverpool	27 April —
Duncan, John	2nd	37 Memnon, 245 tons .....	.....	S. Shields	14 Jan. —
Duncan, W.	1st	25 Glamis Castle, 342 tons	.....	Dundee	13 Oct. 1846
Dunn, W. M.	2nd	.....	.....	Newcastle	8 Jan. 1847
Dye, T. F.	2nd	23 Eclipse, 540 tons ... (<i>as mate</i>)	4268	London	14 April —
Edwards, O.	1st	... Macedon, 529 tons (<i>as chief mate</i>)	8697	London	4 July, 1846
Ellerby, John	1st	24 Gilmore, 500 tons ... (<i>as mate</i>)	19977	London	5 Feb. 1847
Elliott, John	2nd	29 Brack, 217 tons .....	.....	S. Shields	6 Mar. 1847
Ellis, John	1st	30 Martha, 248 tons .....	.....	Liverpool	26 Jan. 1847
Elmstone, C. T.	2nd	25 Joseph Somes, 774 tons (<i>as mate</i>)	324297	London	30 April —
Emery, James	2nd	30 Late Mate of the ... Earnest, 184 tons	45388	S. Shields	5 Feb. 1846

Fenton James	2nd	23	Enterprize, 313 tons (as mate)	158498	Liverpool	16 Mar. 1846
Fergus C.S.	1st	...	.....	.....	Glasgow	19 May —
Fletcher, John	3rd	38	Brothers, 155 tons... (as mate)	.....	S. Shields	12 Sept. —
Foster, Thomas	2nd	30	Hopewell, 268 tons	.....	S. Shields	3 Sept. —
Freeman, Ben.	2nd	22	Duchess Northum- berland, 541 tons...	329040	London	13 May, 1847
Freer, William	2nd	29	Curraghmore, 381 tons, (as mate)	34767	London	26 May, —
Garnock James junr.	1st	25	Hope 330 tons	.....	Liverpool	20 Feb. —
Gibb, George	3rd	36	Grantham, 227 tons	.....	S. Shields	20 Aug. 1846
Giffney, J. R.	1st	34	Angerona, 731 tons	.....	Liverpool	9 Jan. 1847.
extr	...	...	.....	.....	.....	.....
Gowland, Josh junr.	2nd	27	Granger, 318 tons... (as mate)	14087	S. Shields	19 Mar. 1846
Gray, William	1st	...	Vera	.....	Dundee	17 Nov. 1845
Gray, W. D.	2nd	24	Orator, 325 tons ... (as mate)	15455	London	29 April, 1846
Grebow, W. H.	1st	35	W. Murray, 146 tons	.....	Liverpool	26 Jan. 1847
Grebow, Henry Frederick	1st	34	Hopkinson, 396 tons	164172	Liverpool	2 Mar. —
Gribble, Charles	2nd	30	Ocean Queen, 737 tons (as mate)	32828	London	4 Jan. —
Grieve, Edm.	3rd	32	St. Lawrence 236 tons (as mate)	.....	S. Shields	17 Feb. 1846
Hadler, Thomas Henry	2nd	24	Viscount Sandon, ... 540 tons (as mate)	129081	London	7 June, 1847
Harons, John	2nd	33	Ruth, 245 tons ... (as mate)	.....	S. Shields	1 Mar. —
Harper, T.	2nd	28	Pomona, 284 tons... (as mate)	.....	S. Shields	18 Jan. —
Harris, G. D.	2nd	27	Vanguard, 346 tons (as mate)	6259	London	15 June, 1846
Harrison, Wm.	2nd	25	Stamfordham, 236 tons	.....	S. Shields	9 April, —
Harrison, Wm.	1st	34	Acadia, 1400 tons...	.....	Liverpool	9 Jan. 1847
extr	...	...	.....	.....	.....	.....
Hart, Henry T.	2nd	27	Africa, 277 tons.....	.....	London	1 June, —
Harvey Wm.	1st	27	Sarah Fleming, 324 tons (as mate)	.....	S. Shields	4 Sept. 1846
Hay, John	2nd	26	Cowan, 241 tons ...	.....	S. Shields	13 Mar. 1847
Heard, Richard	1st	30	William, 181 tons...	.....	Gt. Yarmth	8 Jan. —
Heddle Wm.	2nd	30	Archipelago, 281 ... tons (as mate)	86160	S. Shields	21 Oct. 1846
Hederstedt, W.	3rd	29	Oriental, 1673 tons (as quarter master)	262437	London	19 Oct. —
Hellyer, Edwin.	2nd	...	Kallibokka, 380 tons (as mate)	14449	London	8 Oct. —
Henderson K. J.	2nd	22	.....	.....	Newcastle	25 Mar. 1847
Henry, L.	3rd	23	Placidia, 198 tons...	.....	S. Shields	7 Nov. 1846
Herbert, Henry Arthur	2nd	36	Lee, 120 tons (as mate)	327668	London	28 Oct. —
Hewison, Wm.	2nd	...	.....	.....	S. Shields	26 Mar. 1847
Hind, John	1st	27	Caledonia, 1400 tons	108020	Liverpool	2 Feb. —
extr	...	...	(as first officer)	.....	.....	.....
Hinson T. G.	1st	...	.....	.....	London	6 Jan. 1846

(To be Continued.)

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES,
As determined by the Rev. W. Foster's Anemometer, Stubbington, near Fareham,
Hants.—September, 1847.

Day of Month	A. M.												P. M.											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	WSW												12	12	10	12	12	10						
2																		NNV					NNE	
3																								
4									WSW	5	11	12	12	10	5	5	5	5	5	5	5	5	10	10
5	NNV	10	10	5	5	5	5	10	12	12	22	17	22	22	22	17	13	10						
6																								
7						WSW	10	13	12	15	20	22	22	25	22	25	25	22	20	10	15	10	10	
8				W	10	10	12	12	15	17	20	27	15	12								15	15	17
9		15	17	17	15	12	12	12	12	12	17	20	20	12	20	20	15	12	10	12				
10									SW	10	12	22	22	25	27	25	28	17	12	10				
11																								
12														15	10	10	3	3	3					
13																								
14				10	10	15	15	17	15	12	15	17	17	12	12	10	10			12	12	10	5	5
15				10	12	17	17	15	17	17	20	20	20	17	17	15	15	15	17	10	10	12	10	
16	15	15	12	10																				
17																								
18																								
19							12	15	12	12	12	12	12	12	12	12	10	5						
20																								
21															SW	12	17	15	17	15				
22									W	15	15	5	5	5	5	5	5			NNV				
23					NE																			
24												12	22	22	17	22	17	15	15	3	3			
25								10	10															
26																								
27																		W	10	5	5	5		
28																		WSW	10	5	5			

29						15	12	12	10	10	10	10	10	10	WNE	
30															W	
31																

TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—SEPT., 1847.

A.M.	1	2	3	4	5	6	7	8	9	10	11	12
16	·0172	·0172	·0172	·0172	·0172	.	.	.
22	·0172	·0172	·0086	.	.	.	.	.
25	·0086
Total	·0344	·0344	·0258	·0172	·0172	.	.	·0086
P.M.	4	8	8	8	8	8	8	8	8	8	8	8
4
8	.	·0344	·0344	·0344	·0344	.	.	.	.	.	.	.
Total	.	·0344	·0344	·0344	·0344	·0086	·0086	·0086	·0086	·0086	.	.

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—SEPT., 1847.

Miles	N	NNE	NEENE	E ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
90876	346	507	605	.	209
No. of hours }	.	9	66	.	.	.	.	.	.	24	36	52	.	15
Velo. pr hr. }	.	10	13	.	.	.	.	.	.	14	14	11·9	.	13
Amt. Rain, }	.	.	095	.	.	.	.	.	.	.	·043	·181	.	344

Considering from 6 A.M. to 6 P.M. *day*, and from 6 P.M. to 6 A.M. *night*, we have 1828 miles the amount of wind during the *day*, and 783 during the *night*. ·207 inches the amount of rain during the *day*, and ·073 during the *night*. Total wind 2611 miles, rain ·285 inches. The greatest amount of rain was from N.N.W.

The number of hours during which the rain fell was 18; and the number of hours during which the amount of wind is recorded is 202, during 542 hours it was calm.

To CLEAN GOLD LACE EPAULETTES, &c.—Mix half a dram of liquid ammonia with half a pint of water, wash the gold lace with it, and afterwards wash it with pure water, until there is no smell of the ammonia; by this means, all the bronze or green tarnish about the lace will be removed, as it is owing to the oxide of copper, which will be dissolved by the ammonia; but the ammonia will not touch the gold or silver, or injure the texture of the lace.—*Patent Journal*.

[We hope to be pardoned for deviating in this instance from our general rule in reprinting the above; it may be a hint worth knowing to many of our readers, therefore venture to rest our apology on the motive we have in view.—Ed.]

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

COMMANDERS—R. D. White—W. n. Jones and E. Wilmot on the retired list of 1830.

APPOINTMENTS.

COMMANDERS—R. Moorman to *Hecate*—H. Dumaresq to *Kite*—R. C. Mitchell to *Devastation*—W. Morris to *Arab*—E. Wilmot to *Superb*.

LIEUTENANTS—S. Morrish to *Asia*—N. B. Bedingfield to *Hecate*—H. Warren to *Kite*—G. J. Gardner to command the *Oberon*—C. Haydon to command the *Spider*—H. D. Selby to *Arab*—J. F. Kennedy to *Excellent*—W. Amphlett and H. S. Hillyar to *Asia*—R. Robertson to *William and Mary*.

MASTERS—R. B. Mudge to *Arab*—D. N. Welch to *Trincomalee*.

ACTING-MASTER—E. Skead to *Shearwater*.

SECOND-MASTERS—W. H. Mallard to *Hecate*—W. H. Osmond to *Antelope*—C. Fox to *Victory*—G. Richards to *Kite*—F. T. Jameson to *Asia*—W. G. Sturges to *Oberon*—C. J. P. Simpson to *Spider*.

SURGEONS—W. McCrea to the Banana Islands Hospital—W. Roberts to *Hecate*.

ASSISTANT-SURGEONS—R. P. Sparrow to *Dolphin*—T. J. Breen to *Hecate*—R. Hastings to *Cambrian*—H. F. Williams and H. Slade to the Banana Islands hospital—J. Bradshaw to *Fury*—C. A. Robinson and J. M. Holman to *Asia*.

MIDSHIPMEN—W. D. S. Wortley and T. M. W. Wynyard to *Ocean*—C. H. Johnstone to *Constance*—L. Barstow to *Trincomalee*—W. G. H. Johnstone and J. R. Simcoe to *San Josef*—J. P. Smallpage to *Excellent*—J. G. Cresswell to *Victory*—R. H. G. Helps to *Amphitrite*—F. Parke to *Vengeance*—E. H. Buck to *Vixen*.

NAVAL CADETS—E. W. Price to *Trincomalee*—F. J. Shaw and A. J. Johnstone to *Asia*—P. A. Mackey to *Tralfalgar*—W. D. D. Selby to *Amphitrite*—G. W. O. B. Victor to *Cambrian*.

PAYMASTERS AND PURSERS—F. Gransore to *Arab*—J. Warden to *Excellent*—E. B. Robins to *Hecate*.

CLERKS—H. D. L. P. Bailly to *Oberon*—J. Singleton to *Spider*—S. Fisher to *Arab*—R. Hire to *Vindictive*.

BIRTH, MARRIAGES, AND DEATHS.

Birth.

On the 8th of Sept. the lady of Mr. E. Dunsterville, R.N., of the Admiralty, of a son.

Marriages.

On the 11th Sept., at Ryde, Isle of Wight, C. Tennant, esq., to Gertrude, the eldest daughter of Capt. H. Collier, R.N.

On the 2nd Sept. at Marylebone, T. Frazer, surgeon, R.N., to Emma, eldest daughter of J. D. Watt, esq., Assistant Commissary General.

Deaths.

On the 14th Sept., at Southsea, Rear Admiral Bloye, C.B., suddenly, which circumstance had such an effect on Mrs. Bloye, that in a few hours afterwards causing her demise.

On the 13th Sept., at Tichfield, Commander E. Crouch, R.N., aged 31 years.

On the 1st Sept., in London, after a long and painful illness, Sir R. Dobson, M.D., F.R.S., Inspector of Hospitals.

On the 25th Aug., Lieut. S. Colston, R.N., at Arhurstown, leaving a widow and seven children.

It is with extreme regret we have to announce the death of the Rev. Dr. William Pearson, L.L.D., rector of South Kilworth, in the 81st year of his age. This highly

gifted and talented gentleman, besides leading a life of uncommon excellence, has published several very valuable works on astronomy, which he has presented to the Astronomical Society of London, of which he was the founder and *Father*, in order that after his decease, they may be distributed gratis to the members of that society of which he was for many years the leading member and supporter, and by which as well as by a large circle of friends, his loss will be deeply and sincerely regretted.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory,
From the 21st of August, to the 20th of September, 1847.

Month Day	Week Day	Barometer In Inches and Decimals.		Fahrenheit Thermometer In the Shade.				Wind.				Weather.			
		9 A.M.	3 P.M.	9AM	3PM	Min	Max	Quarter.		Strength.		A.M.	P.M		
								A.M.	P.M.	A.M.	P.M.				
		In Dec	In Dec												
21	S.	29.97	29.91	63	74	52	76	NW	SW	1	2	bm	b		
22	Su.	29.72	29.71	65	66	56	66	SW	SW	4	3	op 2)	o		
23	M.	29.94	30.00	53	59	49	60	N	N	5	5	qop 2)	qbc		
24	Tu.	30.13	30.16	55	53	50	64	N	N	5	3	qo	o		
25	W.	30.15	30.12	59	66	51	69	N	N	4	2	bc	bc		
26	Th.	30.21	30.23	63	67	58	70	N	N	4	2	bcm	bcm		
27	F.	30.32	30.32	59	73	51	75	NW	N	1	1	bcm	bcm		
28	S.	30.36	30.30	60	74	55	74	W	NW	1	1	bm	bcm		
29	Su.	30.20	30.14	59	68	55	69	NW	N	2	2	ber 1) (2)	bc		
30	M.	30.10	30.06	54	63	50	64	NW	W	1	2	bm	bcm		
31	Tu.	30.00	30.04	59	63	55	64	NW	NW	4	3	o	bc		
1	W.	29.92	29.82	56	65	48	66	SW	SW	4	6	bc	qbc 3)		
2	Th.	29.83	29.91	56	58	48	62	NW	NW	6	5	qo	qbc 3)		
3	F.	29.98	29.83	50	53	44	56	W	SW	3	5	op (2)	qop (3 4)		
4	S.	29.85	29.89	50	57	46	58	NW	NW	3	2	bc	bc		
5	Su.	29.87	29.87	49	59	40	60	W	NW	2	2	bcm	bcm		
6	M.	29.88	29.92	51	58	43	60	NW	NW	4	3	bc	bc		
7	Tu.	29.99	29.93	50	60	41	63	SW	W	3	3	b	bcp (4)		
8	W.	29.85	29.88	58	61	53	62	SW	NW	1	2	otp 2)	bcp (3)		
9	Th.	30.10	30.12	53	67	39	67	SW	SW	1	1	bc	bc		
10	F.	30.16	30.18	58	65	52	68	SW	SW	2	3	bc	bc		
11	S.	30.16	30.12	58	64	53	66	N	N	1	1	bcm	bcm		
12	Su.	29.96	29.93	59	66	49	67	SW	SW	4	5	bc	qo		
13	M.	29.82	29.82	62	54	54	67	SW	N	1	3	o	or (3) (4)		
14	Tu.	29.92	29.92	52	58	45	59	W	W	1	2	b	bc		
15	W.	29.95	29.92	55	60	42	61	W	W	4	3	bcmr 4)	bep 3)		
16	Th.	29.41	29.41	59	62	51	63	W	W	8	8	beq	oqr 3)		
17	F.	29.55	29.31	55	54	45	60	W	W	6	5	oqr 2)	or 3)		
18	S.	29.51	29.62	51	53	44	56	W	W	5	5	bc 2)	bep 3)		
19	Su.	29.97	29.96	46	57	38	58	NW	W	2	2	bcm 4)	ber 1)		
20	M.	29.72	29.76	54	61	48	60	W	W	3	4	bc	bcp 3)		

August, 1847.—Mean height of the Barometer = 30 inches; Mean temperature = 56.0841 degrees; depth of rain fallen = 2.33 inch.

TO OUR CORRESPONDENTS.

We are unavoidably obliged to reserve the remaining part of the list of Masters and Mates who have passed examination for our next number.

Our old friend and correspondent "STORMY JACK" we are heartily glad is come to life again, he has our best wishes.

The communication from the "COMMANDER OF THE BARQUE MAIN" shall receive attendance.

Hunt, Printer, 3, New church Street, Edware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

NOVEMBER, 1847.

MARITIME LIGHTS ON THE COAST OF SPAIN.

[An official Notification has been received, intimating the intention of the Spanish Government, by Royal Decree, to establish a new general plan of Light-houses on the Coast of Spain and adjacent Islands. It is to be carried into effect within five years at a cost of 20,000,000 reals (£200,000); authorizing also the imposition of a general Light Tax on every ton, of all vessels entering Spanish ports. The following is a translation of the Report of the Minister of Commerce, with that of the Royal Decree, and the places fixed on for carrying out this important ordinance.]

Ministry of Commerce, Instruction and Public Works.

MADAM.—The service of Light-houses, deficient and imperfect on our coasts and harbours, as it is extensive and well-organised in all civilized states, has succeeded at length in obtaining from Your Majesty's Government the full attention which it has long called for, as an object of the highest interest for the prosperity of our commerce, and not less beneficial to other nations, and even to the whole human race.

Until a recent period, the Light-houses of Spain were left to local superintendence; and to such an extent was the want of system carried, that the vigilance of the Government was never exerted, unless when called upon to enforce the tax intended for their erection and maintenance. It is owing to this deplorable negligence that a nation which was so long reckoned as a maritime power of the first order, and which is yet destined by nature to recover its former rank in that respect, does not at this moment reckon twenty light-houses on its extensive coasts and numerous harbours. It is true, that through the care of those who have more immediately felt the consequences of such neglect, such as our light-houses are, they have satisfied to a certain extent the wants of navigation in the localities where they are situated; but it is not less certain that the interests of general navigation have been hitherto neglected or totally forgotten. This is shewn by the want of light on the

capas and principal points of landing on our coasts, which in the opinion of native and foreign navigators, require it with a decided preference.

The cause indicated being admitted as the principal reason of our backwardness in maritime illumination; it was felt by the Government that it ought to be considered as one of the most important duties of the State; and in order to apply a proper remedy to the incompleteness of the assistance afforded by the existing lights to the security of navigation, the discussion and proposition of fit measures were entrusted to a special permanent commission, which was formed for that effect by Royal Ordinance issued in accordance with the Admiralty Department, by the Department then in charge of Public Works, among which Light-houses are everywhere included.

The above commission, composed of persons competent by their intelligence and consummate experience, have given their opinion in a full and well considered statement, presenting as the result of the continued deliberations which preceded their memorial, a "General Plan of Maritime Illumination for the Coasts and Harbours of Spain, and the adjacent Islands," based upon the most ample local information, united to a knowledge of the aids presented by science to realise, with all the perfection of which it is susceptible, an improvement as important as it is desirable.

In the subjoined statement or summary of the above-mentioned plan, the places are given where it is proposed to establish the 105 lights of all classes intended for the general illumination of the coasts and harbours, which will be aided by a large number of buoys and sea marks, assigned to those sites where it is recognized that their assistance is required for shipping.

With the adoption of this plan it is not however intended to fix the particular point where each Light-house should be placed; because, with the exception of some which have been previously studied in the same localities, and of those now existing, which are inserted in their places in the statement, they require frequent surveys, with a necessary knowledge of local circumstances, to determine the proper points, and at the same time to unite in each proposed case, so far as practicable, the circumstances which may best serve to fulfil the conditions of the adopted plan. Persons in the public service, and other necessary aids, are available for these objects, so that the execution of many lights may be prepared without delay; the plans being formed in anticipation of the funds to be produced by the credit to this effect, which will be included in the general business of the state.

From what is stated, it may be inferred, Madam, that the cost of the new plan of Light-houses cannot be estimated very exactly. Nevertheless, the considerations developed by the Commission in the above-mentioned memorial lead to a result, which if it cannot inspire that degree of certainty which is given by data more approximating to the reality, may suffice to shew that the whole cost of the first establishment will not exceed twenty millions of reals.

But supposing this first sacrifice made, which is light, if compared with the immense benefits it must secure, and not difficult to be made, if carried over the four or five years required by the construction and

establishment of all the light-houses comprehended in the plan, it is indispensable to provide for their good management and preservation, by organizing in the first instance a body of attendants of sufficient skill and intelligence, and by securing at the proper time the additional means necessary to fulfil the object. If the former is easy to be obtained, as little difficulty luckily will there be found in respect to the amount of cost which will be required. The items composing the amount are known, as well from the experience of what has been done in other countries, as from the cost in our own. The sum, therefore, now fixed to cover the annual expense of this important service is 1,200,000 reals.

Your Majesty will observe with satisfaction that so signal a benefit is to be obtained without increasing in a sensible degree the dues which are now paid for similar objects, but under different forms and denominations in all our ports. Their amount in the last year reached to about 800,000 reals, it may, consequently, be expected that when this duty shall be made to bear more equally upon all maritime commerce, native and foreign, although the Treasury cannot at present provide for it by the general produce of other taxes, its produce may be increased, as indicated by certain statistical data, without causing any greater pressure on the generality of contributors, than they now suffer with the irregularities already indicated.

With regard to the small local lights comprehended in the general plan, and some others of the same class which may subsequently require to be augmented, the undersigned minister is of opinion that the case is not yet arrived to determine whether their cost shall fall upon the respective villages or communities, or whether it should be included in the general cost of the Light-houses; but it appears right to state at once the principle of equity which the commission has pointed out for the first case which consists in exempting from the general taxation the boats of the above indicated communities, which shall be under so many tons burden, in compensation of the cost of light charged upon them, and which therefore, in this respect, must be obligatory.

It follows, then, that the execution of the entire new plan of Light-houses will require, at the highest estimate, a first sacrifice of 20,000,000 reals; it is probable, moreover, that the cost of the buoys and sea marks comprised in the same plan, may be covered without adding to that amount.

The undersigned Minister; judging from what has been stated, and considering the laudable example given to us by nations more advanced, in the increase and improvement of those lights which serve by night as a guide to navigators, that they may avoid the hidden rocks and dangers which environ them as they near the land, considering the damage accruing to the national honour from our profiting in other countries by advantages we cannot offer in our own, either to natives or to foreigners; the losses which, under these circumstances, are suffered on our shores, as frequent as in their irreparable consequences they are fatal, notwithstanding the dues paid by all vessels arriving in our harbours to obtain an advantage which they do not receive; and finally, convinced that the proposed measure will satisfy as completely as possible a duty which

stands already as one of those incumbent on the State, has the honor to submit the following draft of a Royal decree to the august approbation of Your Majesty.

Madrid, 13th September, 1847.

To the Queen.

(Signed) ANTONIO ROS DE OLANO.

ROYAL DECREE.

Having taken into consideration the proposition of my Minister of Commerce, Instruction, and Public Works relative to the increase and improvement of the maritime light-houses on the coasts and harbours of Spain and the adjacent islands, I have thought proper to order as follows:—

Article I.—The execution in all its parts of the general plan of maritime illumination for the coasts and harbours of Spain and the islands adjacent is approved, on the basis and with the suggestions contained in the memorial and plans presented by the Special Commission of Light-houses, a general summary of which is subjoined.

Art. II.—For this purpose, the Government will propose to the Cortes, by virtue of the authority which I grant to that effect, that a credit of 20,000,000 reals be assigned, so that, included in the general affairs of the State, the whole may be made effective within the term of four or five years.

Art. III.—In like manner the necessary authority shall be required to establish a general taxation for light-dues upon every ton of vessels arriving in the harbours of the Peninsula and adjacent islands, in lieu of those which are at present levied under the names of *fanal* and *literna*, (lamps and lanterns,) which shall then be abolished.

Art. IV.—My Ministers of Marine and of Commerce, Instruction, and Public Works, shall put themselves in communication, in order that, for the execution of the first of the abovenamed objects, the assistance of their dependents may be readily obtained for all necessary purposes, as well as some vessels of the coast-guard and others belonging to the navy, in command of their respective officers, or of others who may be thereto commissioned, in order that the engineers of the corresponding districts of Public Works may survey the proper lines of coast, to fix upon the points for erecting the respective light-houses.

Art. V.—Under the direction of the Minister of Public Works, and by the general direction of this branch, the organization of the service of the existing light-houses shall be immediately proceeded with, on the basis determined by the Commission in their abovenamed statement; the laying down of plans for new light-houses shall in the same way be gone into, as well as their execution, and the reform of the present lights, in proportion as the Treasury shall disburse the necessary funds.

Given at the Palace, 13th September, 1847,

Signed by the Royal Hand.

Minister of Commerce, Instruction, and Public Works,
ANTONIO ROS DE OLANO.

SUMMARY OF THE PLAN OF MARITIME LIGHT FOR THE COASTS AND HARBOURS OF SPAIN AND THE ADJACENT ISLANDS.
Referred to in the preceding Royal Decree.

Light-houses. First Class.	Light-houses. Second Class.	Light-houses. Third Class.	Lanterns or Harbour Lights.	Encys and Sea Marks.	Remarks.
Cape Machichaco	Monte Ig- naldo in S. Sebas- tian* (1)	Cape de la Figuera*	Entrance of chan- nel of Passages* Isla of Santa Clara	On the bar of the Bidas- soa, and on the Concha de Fuenterrabía In the same channel, and in the bay. On shoal of La Vancha. On the east of the Isle of S. Antonio de Guetaria	(1) If the Light-house of S. Sebastian be re- moved from the castle of La Mota where it now stands, to the place it was formerly, as here proposed, the light of the Island of Santa Clara may not be required.
C. Mayor de San- tauder*	C. Mayor de San- tauder*	Tina May- or (3)	Point de la Galea Castro-Urdiales Santonia, (on the Friars'Rock) (2)	Within the bay Santonia	(2) There has also been suggested a little light on the castle of San Carlos, which may not be necessary when another is placed on the Friar's Rock.
C. de Peñas	Rivadesella	Rivadesella	Isle of Mouro Le Suances Llanes Villariciosa Gijon Aviles Cudillero	In the port of Gijon.	(3) Although this point is here mentioned as the locality of a Light-house, it will be neces- sary to survey the neighbourhood before deter- mining on the most appropriate spot.
Estaca de Vares or C. Orte- gal	Cape Busta Rivadeo	Cape Busta Rivadeo	Cape Prioriño Sisargas Islands C. Villano de Cama- riñas	On Rock of Las Animas. On the Point of Ares. On shoal of Piedra del Puerto (5). On that of Cagarrosa.	(4) The former light has been recently re- placed with a lenticular apparatus of the third order, which produces a fixed light, varied every three minutes with sparks (?) (5) This and the following shoals are in the mouth of the Sada.

Light-houses, First Class.	Light-houses, Second Class.	Light-houses, Third Class.	Lanterns and Harbour Lights.	Buoys and Sea Marks.	Remarks.
Cape Finis- terre (6)			Cape Cé, on the Isle of Corcubion	On Piedra Pulguira. Near the same Cape Cé. On the Little Carroneiro	(6) The Light-house of Cape Finisterre is to be placed on the contiguous Cape Torinana, or on any other point that may appear preferable.
	Cies Islands or Bayona	C. Corro- bedo	Isle of Salvora Mount Campelo in the Isle of Arosa Isle of Ons (?) Point of La Guia, within the mouth of Vigo Bay* (7)	On various shoals of the same Isle of Arosa. On the Piedra Pao, of the bar of I. Pontevedra. On the sandbanks of Bor- neira, and other shoals of the same bay. On the Estelas islands. In the Puerto Real of Bayona. On Cape Silleiro.	(7) There has been a revolving (?) light of the Fourth Class here since 1844, its light is fixed, varied with sparks every three minutes.
Chipiona		Rompido de Cartaya	Ayamonte (2 lights) Christina I. (2 lgts)	On same Prompido (?)	
Tarifa* (9) Ceuta*	Cadiz (8) C. Trafal- gar		Huelva (2 lights) Sanlucar Rota Point del Carnero(?) Isla Verde (?) Estepona Marbella	On bar of Huelva (?) On shoal of Salmedina on the sandbank of El Perro (?) On the point S. of the Diamante, on that N. of the Galera on El Frail; and on the bar of Santé Petri.	(8) The existing Light-house, which has a reverberating light, may be continued without inconvenience. (9) The same may be said as of the light of Cadiz. (10) The situation of this Light-house is to be on the W. of the Castle of Fucugirola, on the tower here named, or any other of the more salient points of that coast.
		Torro de Cala Moral Malaga* 10			

Light-houses. First Class.	Light-houses. Second Class.	Light-houses. Third Class.	Lanterns or Harbour Lights.	Buoys and Sea Marks.	Remarks.
C. Tinoso	I. de Entinas Cape de Gata (11)	Nerja Point or Tower del Llano	Velez-Malaga Adra Almeria Vera Aguilas Cartagena, on the Point of La Navi- dad I. de la Encanzada, (Mar Menor)	On a large stony shoal $\frac{1}{2}$ of a mile S.E. of the castle near the jetty in the bay west of Cape Sacratif.	(11) On the Vela Blanca, or other point which may appear best for the erection of the Light-house.
Las Hormigas, or C. Palos		Isla Plana (Neuva Tabarca)	Cape Santa Pola Alicante, or C. de las Huertas* (12) Villajoyosa (13) Altea Denia (2 lights)	On the Isle of Escumbres, and on place called Trincabotijas. On Cape Falcon, and Isle of La Nava.	(12) The tower of the Mole of Alicante is provisional only, its light is fixed, with a lenticular apparatus of the Fourth Class. (13) The light of Villajoyosa is fixed, and reverberating.
Columbres Islands		C. Cullera Grao de Valencia* C. de Orpessa Alliaques	El Cabanal* Vinaroz*		

Light-houses First Class.	Light-houses Second Class.	Light-houses Third Class.	Lanterns and Harbour Lights.	Buoys and Sea Marks.	Remarks.
C. San Sebastian, or las Hermigas	Bocas del Ebro (mouths of the Ebro) P. de Liobregat	Taragona* Canet	Salou*	At the entrance of the Port (?)	(14) The light of Barcelona may be red.
L. Concejera (or Yviza) L. Formentera		Puntas Grossa (Yviza) I. Dragones	Isla de los Ahorcados (15) Port of Yviza Palma Califiguera (16) Soller*		(15) The light of this island is to be red.
C. Formenton		C. de Pera	C. Salinas Cindadela C. Dartuch Puerto Mahon	At the entrance of the Port.	(16) The light of this Light-house may be white, and that of Palma red: with these and the exteriors of the Light-houses (?) the light of Porto Pi will no longer be required.
I. de Cabrera C. Cabeleria I. del Aire					

Places marked with a * have lights now. (?) This sign and the others found in this table, show that the lights or sea marks proposed or demanded for the sites so marked, are of doubtful necessity.

Her Majesty the Queen (whom God preserve) in approving, by Royal Decree of this date, the general plan of maritime illumination proposed by the Commissioners appointed for this purpose by a Royal Order of the 4th day of January 1842, has thought proper to resolve that it be manifested to the President and other members of the said Commission, that she is satisfied with the zeal and intelligence with which they have fulfilled their commission; and to direct that in due time the publication of the Memorial and other documents presented by the said Commissioners be proceeded with.

I am directed by Royal order to state this to you, to be communicated to the interested parties, and for other proper purposes.

God preserve you many years.

(Signed)

ROS DE OLANO.

Madrid, September 13th, 1847.

To the Director General of Public Works.

CHAT ABOUT THE WINDS.

(Continued from p. 528.)

WE will now take a range towards the Northern Pole; the regions there are replete with phenomena interesting to the navigator; it may, therefore, not be amiss to note here a few of the philosophical inferences with reference to the atmosphere, and the agencies connected with the production of wind.

One writer observes that, at the pole, neither wind, tide, snow, thunder, or lightning, will be found to exist; or, if any, in the smallest possible degree.

No doubt reasons, perhaps alike pressing, *pro* and *con* may be found; but as we have not yet reached the goal, the real facts of course are unknown; much would probably depend on the presence or absence of land.

Another writer,—Dr. Brewster, estimates the mean temperature of the North Pole at about 11° Fahrenheit, which is thirteen degrees warmer than the mean temperature of Melville Island in the latitude of 75° N. The 80th degree has been considered as the parallel of the greatest cold.

Now let us hear our old friend the sea-going philosopher, who has given us the best theory of the Trade winds because the most agreeable with reason, with facts, and with common-sense,—and who has been placed in the Temple of Philosophy next to the immortal Newton. Dr. Halley,—What was his opinion? It was this: that “the *hottest* weather may take place at the poles”! How does he make that appear? From the consideration that the continued heat and light of the sun may

more than compensate for his obliquity. A weak force acting for a long time may produce as great, or greater effect than a stronger force acting for a short time.

The learned Doctors cannot be said exactly to disagree, as the one assumes the mean temperature for the whole year, and the other merely infers an effect during the continued day-season, when the sun does not sink below the horizon. It would perhaps be no hard matter to argue in favour or against either opinion.

Open seas are said to lie beyond the collected masses of ice at either polar circle; and the summer heat, in a local situation, on the eastern coast of Greenland has been found as high as 70° . As the earth's rotary motion is *minimum* at the pole, such may have given rise to the idea of there being no wind around that point; but if the greatest heat, and great cold (over the barrier of ice) are coincident within the Arctic circle in summer, we should expect in that season, a pretty constant movement of the condensed air, towards the heated air of the pole.

Between the 70th and 80th degrees north, a belt of ice and frozen lands encircles the Polar basin; this circle of congelation must give a marked character to the climate of that region, as the ice is never melted but in a partial degree; in the winter it is probably one connected body; but during the summer it has in some parts been found disunited, and varying the position of its outline. If the superior air from the Torrid zone reaches thus far north, it may here be repelled and distributed.

A question naturally arises:—does the atmosphere at the poles attain the same elevation as at the equator? The inference is that it does not; it is impossible to say what its altitude is anywhere, but it is not improbable to believe that its height from the equator to the poles is proportioned in a similar way as the limit of perpetual snow on elevated lands; the seasons would, it may be conjectured, be influential in changing this limit. The question has a bearing on the inferred equatorial stream of air, which, if the above postulate be received as reasonable, would lead us to conclude that a progressive dip of the aerial currents takes place in their passage towards the poles, until they disrupt upon the surface, if a horizontal interchange exists.

We have here reached the region of the greatest cold, and where it has been inferred that the greatest heat may take place. What is heat, and cold? Whatever the constituent principle of *caloric* may be, the sensations of heat and cold are considered by some philosophers as one phenomenon; that is to say: there is no such thing as positive cold; in fact that, it is not an element *per se*, but no more than a diminution of heat, which latter is merely the sensation arising from *caloric* or fire, the true element. It must be owned that the effects of both are very similar in some instances, whilst in others these differ in the extreme: a red-hot iron will take off the skin from the finger, so will an extremely cold bar of iron. Cold congeals water to a porous solid body, heat liquifies or melts this ice. But whether there be but one principle, or whether cold and heat are the sensations of two distinct elements it is pretty certain that they are influential in the movements of the air; and this leads us

to take a glance at that part of the subject which embraces the general winds of the northern temperate zone.

It is important in the consideration of the causes of the winds of the Eastern Atlantic to bear in mind that during the summer, the lands of Europe are warmer generally than the Ocean; and generally, too, warmer in the winter than the lands to the westward.

If the philosophical axiom of cool air flowing into that which is of a higher temperature be correct, and there seems no reason to doubt it as a general consequence—the above mentioned circumstances we may conclude are instrumental in the creation of easterly, as well as the westerly winds, which are experienced on this side of the Atlantic; the propellent and attractive principles are equivalent.

Intervening causes often arise to direct the general directions of these winds; but the alternation of direct easterly or westerly fresh currents of air occur when the main cause of propulsion, on the one side or the other declines, or is in a state of declension: the predominance of either, I imagine, to depend chiefly, if not solely on this circumstance. I have already stated what the mediate influential causes are; but there is another which is locally operative with reference to the sea-winds—the flood tide.

That westerly winds are strong and frequent in the winter season, seems to be owing in some measure to the fact that, the western portions of continents and large islands are warmer than the eastern fronts. The elevated lands of the eastern face of America, in that season, are covered with snow, the cold and condensed air around which is drawn towards the warmer medium over the Ocean, and so progressively onwards to the shores of Europe; for, there is no question about the general temperature being higher on this side than on that of America at this period of the year.

The general effect of the Sun at this period but feebly exerted on the atmosphere is remarkably affected by causes which may be attributed to the disposition, the state or condition of the two continents, Europe and America, and to the difference in time of the first cultivation of the respective lands, which in its regular consequence acts materially on climate. From this last circumstance, may be explained in part, the apparently anomalous fact of the wide difference which exists in the winter temperature of the same parallels of the western continent and of Europe; although it may not be quite so easy to arrive at the cause of the summer heat of the former, even of Canada, being almost tropical.

The north-west winds of that season, come of course from higher latitudes: from lands and seas covered with snow, and frozen. It may be inferred that from whatever point the initial or original impulse occurs, the current of air will soon take or acquire one towards the south-east as it crosses obliquely parallels that are progressively warmer; and as it advances towards Europe the attraction becoming stronger, its strength will be increased. It is quite reasonable, too, to conceive that portions of the current on its southern lateral margin may be drawn aside, and flow more southerly, and even westerly, whilst the main stream

is pursuing its original settled course by the energy of the propelling force.

There is, I have little doubt, a certain analogy between aërial and Ocean currents; and the air of the lateral limits of a wind may be expected to eddy, or take curved directions.

These inferences, slight as is the notice of them here, may serve to reconcile to reason some of those versatile movements of the air which are so often perplexing to the mariner. It may be possible, too, for a north wind without any break on the continuity of its stream ultimately to assume a direction from the north-east, or even from the east, when passing over land, the surface of which is unequally heated.

I cannot pretend, however, to dip very deeply into the matter, but, what I venture to state here is based upon experience and sober thought; the reader will compare his own practical knowledge and reflection with these, and decide for himself.

It must be observed, and the fact is indisputable, that the westerly wind of the Eastern Atlantic does not always originate on the American side; at different times of the year, it often commences on the shores of Europe and is regressive; and the east wind though sometimes blowing across from Britain to America, oftener flows no farther than from one to five hundred miles from our island. We should naturally look to the originating principle of the motion at the fountain head for an explanation of this difference; there, no doubt, a chief in the category of causes acts its important part, but there may be also intermediate agents busy. The continuity of the current across the whole breadth of the ocean seems in a great measure to be dependent on the rigour of the propelling cause and its lengthened continuance, and *vice versa*; but light easterly breezes are often produced by local causes, and are but temporary.

It seems evident that when condensation is contained for any length of time by a fall of temperature at the source, the current of air induced will be vigorous and push on, carrying with it a large amount of its frigorific principle which is to ensure its prolongation. Now if we consider this active current as a *vein* of wind, we may reasonably infer,—*malgri* the “Northern Athenians”—that it loses very little of its cold intensity by imbibing *en avant*, heat from the medium into which it is supposed to pour.

In such a case I think whilst the impetus is unimpaired, there is little mixing of the cold vein with atmosphere before it, we may fairly imagine that, as it pushes rapidly on it rather thrusts aside the air immediately in advance, and does not thoroughly mix until its force flags, and its breadth spreads abroad. I argue thus from the marked chilly and raw sensation imparted by a shift of wind from westward to eastward, and generally this continues to be sensibly felt until it ceases, or a change of wind takes place. If it lost its frigorific quality and became equal in temperature, unless the initial force continued to increase, it is probable that the current of air would fall short, or, spreading, cease altogether. In light winds this seems likely.

As far as I have been able to search out the truth, I should lay down the 40th meridian, or thereabouts, as the imaginary line of division where the eastern and western influences meet. Westward of this longitude the polar ocean currents and drift ices appear to confine themselves, and no doubt have a certain effect on the temperature of the surface air. The great Ocean stream of Florida may also be considered as another line; to the northward of this current, especially on the banks, fogs are more prevalent than to the southward, as also westward of its course parallel to the Continent. In the Atlantic between Iceland and Newfoundland, northward of the parallel of 50° in the winter, although the winds are strong, the weather is generally finer than in the space between that latitude and the Florida current; but it would seem to be a mistaken idea that, from the dryness of the air towards the pole, gales of wind are not frequent; calms do not generally prevail in those regions. In two entire years Captain Sir John Ross experienced only 2205 in consecutive hours (96 days) of calm; so that there were 634 days in which wind was felt. From the same experienced authority we learn that the westerly winds there, were nearly as 2. to 1., to the easterly winds.

In the winter of the Northern hemisphere there is an active agent in operation for the distribution of the air, and which breaks in upon the regularity of the north westerly winds of that season. The circular hurricane makes its transit across the North Atlantic from the American shores towards Europe, and the atmosphere becomes in commotion by a succession of these progressive meteors. The recurrence of these violent tempests are much more frequent at this season in the higher latitudes than is imagined in England; and, in consequence of a variation in the line of their path, it is probable they sometimes come in contact, break up, and cause great diversity in the direction of the winds, and the temporary fierce gales so often, at this season, experienced by navigators. I may here express a hope that Mr. Consul Hunt, at the Azores, has continued his valuable observations on these storms, for, on account of their perilous nature, too much cannot be written about their mode of action, &c.

There is a property in aerial currents that is very curious. Even when moving briskly opposing winds often balance each other. It had appeared to me as highly probable that this effect occurred only when the two winds were of equal force, and their temperature alike; but I found subsequently that, however reasonable this might be, it could not be pronounced as invariable, as the fact is certain, that whilst a strong gale has been blowing from the west outside of the English Channel, a light easterly breeze spread over the land; its limit being a little to the westward of Scilly. Again, two ships (I was in one) have sailed, parallel to each other, about 60 miles apart, towards England, and arrived the same day at Cowes; for a week before making the land, one had a fresh south wind, the other an equally strong north wind. Whether a calm intervened I do not know, but such is not improbable; yet, I have

dropped suddenly, without the slightest warning or indication of change, from a furious south gale into a north one, every whit as ferocious!

There is a general effect without, as well as within the tropic in the direction of the winds partaking of the nature without the regularity of the monsoons, from the sun's place in the different seasons: but local agencies are ever in action to break in upon the effect, which otherwise would be more uniform.

Thus, after the Autumnal equinox, when pluvial discharges are frequent in the middle latitudes, the atmosphere becoming suddenly cooled by electricity and evaporation, over the ocean, a movement of the air takes place towards the warmer atmosphere of the lands to the N.E.; the space of ocean affected may be roughly taken as lying between the English Channel, the Azores, and the Cape Verde islands. These 'fiery' south-westers* are most perplexing, between Finisterre and Porto Santo, up to the end of December in some years; for, although you may start with a fine slant of easterly wind, it often takes its leave at least of the Biscayan Gulf, and is succeeded by the south-westers. I have been *five weeks* reaching Madeira! After the fury of the first series of these gales has expended itself, you will sometimes obtain the advantage of an easterly spirit from the snow-capped Pyrenees, which may carry you onwards for a few days, but it seldom lasts long, as the south-westers are often renewed abreast of the Strait.

If we turn our view to the eastward, and north-eastward, and north, we shall find the agencies that give motion to the air, in active operation. The lands and the ocean lying in those quarters are for the most part bound up by frost; in the winter the temperature is very low, and the air becoming condensed is eager for a race towards the Atlantic, where the general atmosphere is warmer as far as the 40th degree west. At this season N.E. and E. winds occur, and sometimes this force increases to a gale; we often, too, experience S.E. storms, which probably have their origin on the snowy mountains around the Black Sea. I am of opinion that if there were not counter-acting causes on the western side of the Atlantic, these easterly winds would predominate at this season. In point of general strength the westerly winds exceed the easterly, and the result is that they force their way to our coast, and are more constant than the others. But I believe that often the east and north-east winds felt on our shores, commence from a different point than that held when they reach us; that is to say: they follow a curvilinear course. The light easterly breezes of this season, as of other portions of the year, I have as little doubt, sometimes originate locally in the North Sea, or even on the land, and are regressive, as well as progressive. The general atmosphere of the higher latitudes being of a more uniform temperature than that over the western parts of Europe, and from the fact that extreme cold stills the air, it may often be profoundly calm remotely whilst

† So remarkably violent and surcharged with moisture are these gales that the seamen have a cap named after them.

an easterly wind is blowing over Great Britain, so that while we imagine the cause distant, it is at our threshold.

The alternation which is experienced in England of easterly and westerly winds, may depend in a great measure upon purely local causes; but the continuance of a wind would seem to be mainly regulated by the vigour of the propelling course. Our north wind may perhaps be attributed to falls of snow on the Scotch hills, and to the attracting warmer air in the south of England; nevertheless I think it quite possible that a diffusion of cold air may reach us from the Boreal region, although this is denied by the Savans of the Caledonian capital.

When the Vernal equinox occurs, and the sun advances in the northern signs, caloric exerts its power; this period seems to produce a general crisis,—the day on which the glorious Wind God mounts his rostrum, and distributes his commands to the genii of the storm—a universal stir takes place, and the whole ærial world is in commotion! How strikingly does this display the influence which the place of the great luminary exerts over the atmosphere: to doubt it would amount to heresy in science.

The snows and much of the ices of the north and east, now begin to melt, evaporation exerts its activity, and the movement of the air from those quarters becomes more constant; sometimes blowing uninterruptedly for the comparatively long period of fourteen weeks, varying in force more than in direction; it is evident to use a simile, that the hand at the bellows must be nervous and strong. This is *our* eastern monsoon, and as far as the human frame is concerned, the worst feature of our ever varying climate: indeed the doctors affirm that it is the only *regular* thing to be looked for in it!

Throughout the year an occasional soft south breeze blows in England; a circumstance that is a little curious considering the proximity of France. It probably originates in the Channel; and when not there, from some sudden atmospheric change over one land or the other, or over both.

Our valued and talented "Trans-Atlantic Friend", I perceive by the *Nautical*, has drawn up an "Ice Chart". Such would prove a useful assistant to the Navigator; for, what with hurricanes, and ice-fields and huge bergs, the portion of the Atlantic where these formidable checks to free navigation are met with, is one of the most perilous of the Ocean. It is well timed, on account of the recent losses. A chart of the perennial winds, and the monsoons would also be of great value, the seasonal variations may be shown by shades, or lines; detached letter-press descriptions are certainly of use, but a chart, by giving the whole as a picture, at one view, would be more valuable. I take the liberty of commending this to the talented officers of the Hydrographic Office, whose silent industry for the benefit of Navigation cannot be too highly applauded; and with this sincere tribute to their talents, I, as a humble gleaner, close my chat.

At a meeting in Cambridge, the address of the President Sir J. Herschel has this important information:

“A ship is an itinerant observatory; and, in spite of its instability, one which enjoys several eminent advantages, in the uniform level and nature of the surface, which eliminate a multitude of causes of disturbance and uncertainty, to which land observations are liable. The exceeding precision with which magnetic observations can be made at sea, has been abundantly proved in the Antarctic voyage of Sir James Ross, by which an invaluable mass of data has been thus secured to science. The voyage has also conferred another and most important accession to our knowledge in the striking discovery of a permanently low barometric pressure in high south latitudes over the whole Antarctic ocean, a pressure actually inferior by a considerably more than an inch of mercury, to what is found between the Tropics.

“A fact so novel and remarkable will of course give rise to a variety of speculations as to its cause; and I anticipate one of the most interesting discussions which have ever taken place in our Physical Section, should that great circumnavigator favour us, as I hope he will, with a *vivâ voce* account of it. The voyage for the further prosecution of our Arctic discoveries under Sir John Franklin, will bring to the test of direct experiment a mode of accounting for this extraordinary phenomenon thrown out by Colonel Sabine, which, if realized, will necessitate a complete revision of our whole system of barometric observation in high latitudes, and a total reconstruction of all our knowledge of the laws of pressure in regions where excessive cold prevails. This with the magnetic survey of the Arctic Seas, and the not improbable solution of the great geographical problem which forms the chief object of the expedition, will furnish a sufficient answer to those, if any there be, who regard such voyage as useless. Let us hope and pray, that it may please Providence to shield him and his brave companions from the many dangers of their enterprise, and restore them in health and honour to their country.”

To which I am sure there is not one honest heart among seamen but will cheerfully respond—Amen.

THE CONTRACTION OF THE WHIRLWIND.

SIR.—There does not exist, I believe, any doubt of the hurricane meteor expanding in its progress, but there has been no established proof of its contraction, although in one or two instances which occurred in the West Indies, there was reason for believing that it did so, or else made a local detour.

Mr. Piddington in his interesting account of the storm experienced by the brig Charles Heddle,* northward of the Mauritius, states his opinion that there is a centripetal action of the wind in these storms (agreeable with the Redfield theory,) and he adds:—“Our present result is evidently to show this sort of incurving, and the diameter of the storm was a decreasing one.” I do not recollect to have seen his reasons for the latter.

* For an account of this hurricane see *Nautical Magazine* for 1846.

I have gone through the details of this hurricane, myself, by the aid afforded from the log, without referring to Mr. Piddington's remarks; but I did not arrive at any decided proof of the contraction of the meteor. It is indeed, quite evident that the radii of the brig's circuits rapidly diminished after the second round; but that circumstance cannot, I imagine, be taken as an evidence of the storm circle having contracted. The exit of the vessel was not a confirmation, clear of all doubt, of the fact; there were other circumstances wanting to place that beyond dispute. Nevertheless Mr. Piddington may be correct.

If such an action takes place,—and I believe that it does, I am of opinion that it occurs when the heat and moisture within are greatly diminished; for, whilst these continued, or increased, there would probably be a tendency in the meteor to expand; so that such a phenomenon would be more likely to happen in the temperate latitudes than within the tropics, as well as the diminished force of the wind.

There are six modes of accounting for the brig's exit,—and hence the difficulty of arriving at a just conclusion without collateral proof.

1. By the contraction of the meteoric circle. 2. A sudden increased rate of the progressive velocity not due to current. 3. A change of route of the meteor to the right. 4. Alteration in the *set* of the current, by which the vessel was affected, and the meteor not influenced. 5. The meteor disorganized, or dissipated. 6. The entire meteor drawn upwards clear of the ocean surface, so that the great whirlwind ceased below, though it may have continued above. Here are considerations enough to puzzle!

There is some support to No. 3, from the fact that, at 1h. P.M. of the 27th, the wind backed from E.b.S., to E.N.E., varying to N.E., and the brig got clear of her long imprisonment.

With respect to the spiraltic action of the wind, my belief is that it is generally confined to the true hurricane zone,—the great whirling stratum of Mr. Redfield, and that it is scarcely appreciable near the margin of the storm-circle.

One effect of circle-sailing in a storm of this nature, is, to incline a scudding vessel off from the margin. In the Charles Heddle's gale, as the wind veered, the vessel's helm was *ported throughout*, so that the tendency of the prow was to the right-hand, or inwards towards the centre of rotation; and when we consider the difficulty of steering a vessel in a heavy, lashing, and following sea, and a constantly, though gradually, changing wind, those circumstances, collectively, would seem sufficient to account for the brig having been drawn inwards 38 miles in 120 hours, without noticing the corresponding inclination of the waves inwards, or the probable effect of the south-west current, on the vessel, in the north-east quadrant of the circle.

If we look at the *trace* of the circuits, we shall find that the minor axis of all except the first, lies in the direction of N.E., and S.W.

The object of this communication however, is, briefly to state that I was gratified by a sight which I had long been looking out for, the contraction of a whirlwind. In the month of August last whilst walking

on a wide and dusty road, a minor whirlwind suddenly arose before me. The diameter was about 7 or 8 feet only, but it was a perfect circle, and clearly defined from the dust it took up in its progress. The gyration was from right to left.

Whether it was formed on the surface or above, I am unable to say, but, its appearance was instantaneous, and its maximum dimension was then. After whirling, eccentrically, for a second or two, on the spot, it started off to the E.N.E., very rapidly, and gradually diminished to a small column or tube, which appeared to ascend, and soon entirely vanished. I leave the application of the phenomenon to the analogous meteor of the hurricane of the ocean, to others.

Every thing which is likely to throw additional light on the *modus operandi* of the great oceanic whirlwind, however apparently trifling, will be welcome to those who take an interest in its development.

I see advertised, a new work under the sanction of authority, which recommends scudding under sail in hurricanes;—no doubt the practical experience of the author on the ocean and a thorough knowledge of the operations within the circle, will guarantee its value.

STORMY JACK.

SAILING DIRECTIONS FOR THE NORTH CHANNEL INTO MORETON BAY.

(From the *Moreton Bay Courier*.)

CAPE MORETON is the north-eastern point of Moreton Island, and is visible from a ship's deck at the distance of eight leagues. When first seen from the southward, it appears to be detached, as the land between it and the higher parts of the island is very low. With the exception of Flinders Rocks, which lie N.N.E., distant three miles from the north projection of the cape, there does not appear to be any outlying danger.

Vessels entering Moreton Bay by the north channel, should, in coming from the southward, pass about a mile to the northward of the Cape, and steer W. $\frac{1}{2}$ N. until the N. W. extreme of the bushes at Cumboyuro Point bears S.b.E., and the northern extreme of Cape Moreton E.b.S. $\frac{1}{2}$ S.; the depth will then be $7\frac{1}{2}$ fathoms (S.W.) and the outer buoy at A will bear S.W. $\frac{1}{2}$ W. about a mile and a third distant. The Glasshouse Hills will be seen, in clear weather, with the highest (Beerwa) bearing W. 4° S.; from this point a course about a degree to the southward of W.S.W. will carry a ship one-third of a mile to the northward of the buoy at A. Stand on this course until the buoys at B. and C. are on with Mount Tempest, bearing S. 38° E., and the north extreme of Cape Moreton, E. $\frac{1}{4}$ S., you will then be to the westward of the East Banks, and may steer for Moreton Island, by keeping the buoys and Mount Tempest a quarter of a point open on the port bow. The breadth of the channel between the east and west banks is about a mile.

Cumboyuro Point is bold of approach, and may be passed at a cable's length distant; stand past it until the extreme of the bushes bears N.,

and then steer S. until the Ship Patch at Tangalooma Point bears W.N.W. a mile and three-quarters distant; when a S.W. $\frac{1}{2}$ S. course may be steered to an anchorage off the mouth of the Brisbane, in 4 fathoms, muddy bottom, with the highest trees on Mud Island bearing W., and Point Uniacke S.b.W. $\frac{1}{2}$ W.

A direct course to an anchorage off the Brisbane may be steered from Cowan Cowan Point, by passing to the westward of the middle bank off Tangalooma. The middle bank bears W.b S. $\frac{1}{2}$ S., and is two miles and a half distant from Ship Patch. The shore between Cowan Cowan and Tangalooma is fronted by a narrow bank, upon parts of which there is not more than 4 or 5 feet water; the south part of this bank is about a mile off shore. There is good anchorage inside it, under Tangalooma, and a clear passage in, by passing between its south extreme and the Ship Patch. There is good anchorage in Yule's Road, off the watering place, midway between Cumboyuro and Cowan Cowan, and about a quarter of a mile from the shore in 10 and 12 fathoms, where wood and water can be easily obtained. Whalers would find this a most convenient place for taking on board either of these articles,—the water is supplied by a stream running into the sea, and wood can be cut within fifty yards of high water mark. The soundings are reduced to low water, spring tides; the rise from 3 to 7 feet; strong south-easterly winds cause the greatest rise; and during the prevalence of westerly winds in the winter, it is at times scarcely perceptible. The general set of the tide is the flood to the south, and the ebb sets the ebb to the north; but in some places the direction of the stream is varied by the shoals.

In the channel between the east and west banks the first of the ebb sets strong to the N.E., over the east banks; after half tide it takes a northerly direction, and latterly about N.N.W. it runs E.N.E. through Freeman's channel.

Coasters and steamers drawing 12 feet water, may use Freeman's channel with safety, by keeping a quarter of a mile off the sandy beach on the north shore of Moreton Island; they should not stand to the southward until Cowan Cowan is well open off the extreme of the sandy point at Cumboyuro. In going out by Freeman's channel a course should be kept to the northward until the north extreme of Cape Moreton is open to the northward of the sandy beaches; but the eye is the best guide for this channel.

As the eastern limit of the north banks has not been ascertained, it will be advisable, in vessels coming from the northward, that Mount Tempest should not be brought to bear to the eastward of S.b.E. until the north extreme of Cape Moreton bears E.S.E., a ship will then be on the channel course, and may steer W. $\frac{1}{2}$ N., and follow the foregoing directions.

The soundings in the channel between the east and north banks will decrease gradually from 7 to 5 fathoms, and after rounding the buoy at B. they will increase to 10 and 12 fathoms, which depth will continue until abreast of Tangalooma Point.

Description of the Buoys.—A. Black, with small beacon; B. Chequered Black and White, no beacon; C. Red, no beacon.

J. C. WICKHAM, *Commander R. N.*

The bearings are magnetic.

Note.—Although the buoys may not be laid down for a few weeks after the publication of these Directions, still by taking the bearings of the different points named with accuracy, and paying proper attention to the set of the tide a vessel may be conducted through the channels with perfect safety.

CROSSING THE EQUATOR.

Barque Johanna, London Docks, Sept. 16th, 1847.

SIR.—On my outward voyage to the Cape of Good Hope, I left Porto Praya, St. Jago, on the 29th Nov., 1846, intending to cross the Line in about 22° W. In lat. 4° 23' N. got as I supposed the commencement of the S.E. trade at about S.S.E. to S.b.E. I then kept the vessel upon the port tack, thinking we should find the wind veer more easterly as we got more to the southward, particularly as in my last voyage out in the Plumstead, at the same season of the year and same position, I made a quick passage across the Line, and through the S.E. trade; I supposed by keeping to the westward.

This voyage the wind hung so much to the southward, and the current so strong, that I was fearful of being set to the westward of Cape St. Roque; being carried by the current as far as 29° W.; in 2° N. I deemed it prudent to tack to the eastward on the 10th December. I am confident I lengthened my passage fully ten days by keeping too long on the port tack, in expectation of the wind veering more easterly, as in long. 22° W. I experienced very little equatorial current, and each day as we made more westing we found the current increase in strength.

I should think in crossing the Line vessels bound to the cape of Good Hope would get quicker across by not going to the westward of 22° W., as on my homeward voyage I crossed the Line in 19° W. in June last, and found very little set of current to the westward.

I am induced to send the above remarks to you as they may be of use to some of my brother masters, and by way of contributing my mite to your valuable publication to which I have been a subscriber from its first commencement.

On my homeward voyage on the 13th July last as two of my men were on the flying jib-boom furling the sail they reported a rock close upon the lee bow just awash; it was some ten minutes before we on deck could understand what they said, it being thick weather, with drizzling rain, and blowing fresh: they were perfectly sure it was a rock,

and if it be one it is in a dangerous position for ships passing the Western Islands close to Fayal. It was 5 A.M. when the rock was reported, and at noon we had Point Rosales, St. George, S.S.W. $\frac{1}{2}$ W., and Graciosa middle N.E.b.E., making a run from 5 A.M. till noon E. $\frac{1}{2}$ S. thirty-five miles, the above bearings are per compass.

I am, &c.,

W. FALCONER.

The experience of Captain Falconer is in perfect accordance with Captain Horsburgh's remarks, on the subject of crossing the Equator. In his East India Directory (5th edition, page 29) he observes "that ships crossing the Equator far west, and then meeting the S.E. trade hanging far from the southward, have made the Brazil coast about St. Roque or farther to the westward, which greatly prolonged their voyage". He then adds that, "on whatever side the Cape de Verde Islands are passed, the most eligible position at losing the N.E. trade is *probably* from long. 18° to 23° W."

With respect to the reported danger near the Azores, we cannot but think that it must have been a wreck or other floating object. Such things we know have been frequently mistaken for rocks, to which indeed they bear so close a resemblance, that even the most experienced eye may be deceived when judging solely from a view of them in passing. We would strongly urge on our friends in the mercantile navy the desirableness of giving these objects a rigid examination by lowering a boat, when practicable, and placing the matter beyond a doubt by personal examination. In the present case we can scarcely conceive the existence of a rock possible so near the Azores after the frequent traversing of the locality by Captain Vidal in his recent survey of that group.—ED. N.M.

THE HELDER, OR, GREAT NORTH HOLLAND CANAL.

At a Meeting of the Institution of Civil Engineers, February 28, a supplement to the papers on "the Helder or Great North Holland Canal," by Mr. G. B. W. Jackson, was read. It contained a description of the harbours and works at Nieuwediep, which might be considered as legitimately connected with the Helder canal, inasmuch as they were constructed with a view of affording shelter to vessels of war and merchantmen navigating the North Sea. The banks, or shoals, situated at the mouth of the Marsdiep channel, act in a peculiar manner; they narrow the entrance, resist the undue influx of the tides, thus preventing injury to the coast of the Zuyder Zee; they oppose difficulties to the entrance of hostile fleets, as the navigable channels run within range of the protecting forts; and they assist in maintaining the velocity of the currents which keep the channels at their usual depth. On the coast of Holland, the ebb-tide continues to pass off along the Noorder-gat a full hour and a half after the tide has commenced flowing up along the Schulpen-gat; this can only be accounted for by supposing that the tide runs up from the south-west, and enters the Schulpen-gat, whilst the ebb still continues, in consequence of the draft of the tide northward along the coast. The Schulpen-gat and the Landsdiep may, therefore,

be termed the flood-channels; whilst the Noorder-gat may be considered the ebb-channel. Upon these spots, whose preservation was of such consequence to the country, the Dutch have lavished their best care, and exercised their ingenuity.

The shore-works consisted chiefly of groynes, composed of timber piles and fascines, with stone covering. The average length was two hundred yards, with slopes of about one in eight or ten. In consequence of the report of the commission appointed in 1780, the engineers Brunnings and Goudrai, were instructed to proceed with the formation of a warping bank of fascines, 7360 feet long, with double planking guard to accumulate the sand, in order to fill up the interstices of the fascines, and thus preserve them from decay. A breakwater, also, 1850 feet in length, 73 feet wide, at three feet below high water, with slopes of one to one. This was also formed of fascine beds, weighted with 2000 lbs. of stone, and 4000 lbs. of tiles upon every superficial area of 144 square feet. The upper surface was covered with matting, and made convex, the centre being one foot, and the sides three feet, below the level of high water. Hurdling was then used, and the whole was covered with blocks of stone weighing from 1500 lbs. to 1800 lbs each. An additional length of 2080 feet was subsequently built, the warping bank being completed, and by means of these works, the ebb-stream was increased to such an extent as at once to deepen the channel eighteen inches, although the bed was of clay. In 1783, dredging was resorted to, and, with the action of the stream, a depth of nineteen feet was arrived at. The whole length of the proposed harbour was then dredged to a depth of seventeen feet under high water level. Another warping bank of 3675 feet in length was then constructed, with numerous groynes to arrest the sand, and preserve the coast. A quay-wall and jetty were then added; the piles composing the latter were covered with sheet-lead between high water level and one foot below the ground, in order to preserve them from the ravages of the *Teredo Navalis*,* which, however, it is the popular opinion, may be also prevented, by driving the piles through fascines. A portion, sixty feet in length, of the breakwater was torn away by a storm; this slip was filled up with large stones, but they were ineffectual, and fascines were ultimately had recourse to for repairing the breach. The depth of the channel was thus increased to nearly thirty-five feet, so that frigates could pass with safety. In 1789, one hundred and fifty-one vessels were lying there at anchor, fourteen of which were men of war, and four were East Indiamen. The basin is 1292 feet long, and 645 feet wide, with large storehouses, dock buildings, fortifications, &c., of the most solid description, and thoroughly complete for a naval arsenal. The details of every part of the works were given. A special vote of thanks was passed to Mr. Jackson for the paper.

* An interesting account of *Teredo Navalis* will be found in the voyage of the *Chanticleer*, Vol. I. p. 122.

SHIPS AND VESSELS BURNT AND DESTROYED, and others which were on fire, but most providentially saved.

WE have been favoured with the following list of ships and vessels which have been destroyed by fire within the last 8 or 9 years; and with reference to a paper on Spontaneous Combustion, published in our last, it appears that not a few met their fate from that cause, while others with a dreadful sacrifice of human life have been destroyed from the disgraceful conduct of drawing off spirits below hatches with a naked light. The account has been furnished by Mr. Charles Biden, master attendant at Madras, together with some interesting but lengthy remarks.

Steam Vessels destroyed and on fire.

H. C. steam ship Madagascar, Captain Dicey, 1841.—Burnt through spontaneous ignition at sea, off the south-east coast of China, captain and passengers escaped, but three out of four boats were lost, with 57 of this vessel's crew. Survivors after much peril in an open boat, were doomed to endure a harrassing captivity in China, but were rescued from that miserable state.

Steam ship Erie, on Lake Erie near Buffalo, 203 passengers on board, 175 fell victims to the devouring elements of fire and water, 1841.—This dreadful event was occasioned through some negligence in the stowage of turpentine and varnish, which caught fire, and spread with such rapidity that nothing could check it.

H. M. steam vessel Carron.—On fire through spontaneous ignition, compelled to cut scuttles, and rip up the deck over the bunkers; fire subdued.

American steam frigate Missouri, Captain Newton, August 20, 1843.—Burnt at Gibraltar, spontaneous ignition of her coal supposed to be the cause, most strenuous exertions made by British men-of-war to save her; crew escaped.

Robert Napier steamer from Londonderry to Liverpool, July 24, 1844, 578 tons.—Took fire between Port Rush and Bolby Castle; cargo saved, no lives lost.

The steamer Shannon, Plymouth, December 1846.—Prompt assistance from the Dockyard, and the shore saved the vessel and all on board, cargo, coal, and sundries; it was supposed that spontaneous combustion was the cause of the accident. Beams much burnt and other damages sustained.

H. M. steam ship Shearwater, in March 1847.—Stationed at Oban, coast of Africa, fire broke out first in one bunker then in another, and was not quenched until great damage was done; the commander at one time thought of scuttling her and running her on shore.

Steamer Experiment, from Sunderland to London, April 30, 1847.—

Burnt off Aldborough, fortunately the steamer Clarence was in company, and saved the passengers and crew, in all 80 souls. Experiment was seen to go down after the rescue.

Steam ship Grana-Uile between Liverpool and Drogheda, April, 1847, 245 tons.—Burnt at sea, cargo chiefly grain, but she had on board a number of bales of flax. Captain Boden and several other persons lost their lives.

Steam ship Soho, 1847, cargo hemp, flax, and sugar.—In the St. Katherine's dock, smoke and flame issuing through the fore hatchway. Scuttled her, and with prompt assistance, engines, &c, from shore, the fire was subdued, but she received much damage.

The following intelligence may afford some clue to the fate of that splendid steamer the President, missing in 1839. Captain Sawyer of the brig Augusta, states that he fell in with the wreck of a large ship, burnt so near the water's edge that he could not ascertain her name, one quarter was under water, and the other was much charred and burned. The presumption of many here is that it was the hull of the long missing President, and that she was burnt, and not destroyed by the ice.

The Augusta is 24 days from Trinidad, Captain Sawyer is quite sure that it was the hull of a large steamer that he saw, and equally sure that she had been on fire. He bore close down upon the wreck on the 24th of June 1840, when in lat. 33° 30' N., long. 57° 30' W.—*Philadelphia Paper*.

Ships laden with coal, some destroyed, and others partially burnt.

Ship Palestine, Captain M'Lean, bound to Aden, at sea, February 4, 1844, in lat. 26° S., long. 58° E.—Coal laden, on fire by spontaneous combustion, every effort failed to get the fire under, crew took to their boats, one boat picked up by the Solway, all were providentially saved.

Dromore, August 6, 1845.—Off the Cape, barque Crishna providentially hove in sight, captain and crew abandoned their ship, and were landed at the Cape by Captain Sharp of the Crishna.

Royal Consort, September 12, 1845.—Off Calcutta, burnt to the water's edge, cargo rum and sugar, supposed that coal on board had ignited, as the fire originated in the fore hold which was full of coal.

Achilles, 448 tons, John Thomson master, September 16, 1845, from Leith June 23, and Tristan D'Aamba August 31, bound to Calcutta, arrived at Simon's Bay September 16.—This vessel when in lat. 38° 50' S., long. 21° 30' E., discovered that spontaneous combustion had taken place in the hold, and on arrival in Simon's Bay the whole cargo was in flames which rendered it necessary to run her on shore, when the fire was subdued by scuttling the vessel and landing the cargo.

Barque Madonna from Portsmouth to Ceylon, October 1845.—Cargo coal; on suspicion of fire threw overboard about 60 tons, and applied much water, smoke and heat still visible, she bore up for Table Bay where she was run on shore, unladen, and subsequently hauled off, first

indication of fire on 26th September, arrived in Table Bay October 3rd, 1845. Tory, Captain Row fell in with Madona on the 29th, and kept company with her.

Lady East, November 1845.—From Liverpool to Singapore, laden with 600 tons of coal, fire by spontaneous ignition, was discovered off Acheen Head on the 14th of November, unremitting exertions during five days and nights, subdued her fire and she put in at Penang early in December 1845.

Barque Ann Grant, Captain Foreman from London to Bombay June 1846, left London early in December, she landed 700 casks of beer on 22nd of April at Caunanore, cargo 354 tons of coal, and 700 casks of beer on account of Honourable Company, when off Goa on 30th of April smoke was discovered to issue from the hold.—Coal had ignited, ship was in danger, but captain and crew by great energy and perseverance carried her safe into port and were rewarded by the Underwriters at Bombay by the presentation of 1000 reals. and a letter of thanks to Captain Foreman and his crew, who were at one time nearly exhausted; combustion was so powerful that after she was scuttled and ground on the mud bank Mazagon, the smoke did not cease until the water reached the beams in the hold.

The Ship, Erin, of Liverpool, July 19, 1846, with coal from Newcastle, and bound to Quebec.—Spontaneous combustion, the ship had been upwards of a fortnight at sea when the first alarm of fire arose from intense heat from the main hold, all hands were employed to work down to the locality of the fire, which suddenly increased; attempts were then made to stifle the flames, but within two hours they burst through the decks, the ship was then abandoned and soon after sunk. In the course of the succeeding night the crew were picked up and carried to Quebec, where they arrived on 27th of July, 1846.

Barque, Madura, Captain Hope Smith, from London, July 23, 1846, reached Aden November 28, cargo 520 tons of West Harley coal shipped on board in the West India Docks, fair weather throughout the passage.—On the 30th of November smoke from the hold was first discovered; with prompt assistance and incessant working for days and nights to the locality of fire, it was got under on the third day. The fire originated on the starboard wing within a few feet of the lining; ship was scuttled and plugs were not closed till she had seven feet water in the hold.

H. M. S. Tortoise, at Ascension March 1847.—Fire broke out among the coal; after incessant labour during four days and nights assisted by the garrison, her hold was cleared and the fire subdued, but not till nearly all her beams were burnt from 3 to 5 inches through.

Ships burnt by drawing off Spirits.

Ship, Abeona, in lat. 4° 30' N., and long. 25° 30' W., on the 25th of November 1820, the flames spread with such rapidity that before the launch could be hoisted out the tackles were burnt.—By the carelessness

of the mate who took a naked candle in the store room. Out of a crew of 21 persons and 141 emigrants, (total 162 persons) only 29 were saved, and they were picked up by a Portuguese vessel from Bahai and carried to Lisbon.

Ship, Hibernia, in lat. 4° 40' S., long. 20° 30' W., on the 6th of December 1833, passengers and crew, men, women, and children, 232 souls, survivors after great suffering and hardships for 7 days and 6 nights were picked up by the brig *Lotus*, and carried into Rio Janeiro. —Second mate engaged in pumping off liquor in the ship's hold, with a lighted lamp; spirits caught fire, and the flames spread with such force that 84 persons only could be saved in three leaky boats, and 162 were abandoned, and perished by the devouring element of fire and water.

Lucretia, Captain Scott at Sydney, 1839.—Caught fire in the spirit room and destroyed, steward suspected, but the real cause was not known.

Brig, Jamestall, May 27, 1840, lat. 40° N., long. 28° W.—Burnt at sea through a lighted candle falling on some spirits, crew 13 in number in two boats picked up by ship *Orient*, Captain Taylor much exhausted having been 5 days and nights in the boats.

Ship, India, Captain Campbell, from the Clyde to Port Philip with emigrants, crew and passengers 216 persons, destroyed on 19th July 1841.—Burnt at sea in lat. 16° S., long. 33° W., by broaching spirits with a light, captain, passengers, and crew 198 persons saved by the generous and humane exertions of Captain Lecogaunt of the French ship *Roland*, and landed at Rio Janeiro, but 18 persons perished by this calamity.

Ship, David Scott, at the Mauritius, 1841.—Burnt by drawing off spirits with a light; notwithstanding every assistance from men-of-war and other vessels, she was abandoned, cast adrift, destroyed, and sunk in deep water.

Ship, Brooke, Calcutta, 1842.—Drawing off spirits, by great exertions the fire was extinguished and ship saved.

Peninsular and Oriental Steam Navigation steamer Oriental, May 10, 1842.—At sea, on fire drawing off spirits, fire speedily got under.

Ship, Lord Lyndock, Captain Canney, from Penang to Madras, in July 1843, with a detachment of native troops on board.—On fire, caused by the steward, broaching spirits for ship's use with a light in the hold, prompt assistance got the flames under in less than 5 minutes.

Isabella, Cooper, September, 1844, Calcutta.—On fire, strong reasons to suppose the fire originated through the clandestine broaching of spirits by some of the crew, ship injured but saved.

The Aberfoyle, September 24th, 1845.—On fire off Calcutta, through drawing off spirits with a light; saved by prompt assistance, and the active energy of the Master-Attendant's Department and Capt. Stavers of the Docking Company. Noble conduct of the chief mate, who volunteered to go below and bring up a barrel of gunpowder. Ship and masts much injured, and some cargo thrown overboard.

The barque, Swan, Capt. Williamson, from Baltimore to Liverpool,

400 or 500 tons, off the Western Islands, in May, 1847.—Cargo, tallow and hides; drawing off spirits with a naked light, flames spread with such rapidity that out of a crew and passengers (18 persons) only 7 escaped, they were picked up at sea, and carried to Wick. The captain and mates were amongst those who perished.

Uraguay.—Doubtful.

Mars.—Doubtful.

Ships and Vessels Burnt, and on fire with Cotton, Linseed, Hemp, Wool, and other Cargo.

The ship, Dispatch, Capt. Pritchard.—When all hopes had vanished Capt. P. ordered the launch out, and put water and provisions in her; the passengers, an officer, and some of the crew were allotted to this boat, and she hung astern until Capt. P. abandoned the ship in the jolly boat: both boats kept close to her till 5 A.M. on the 12th. On the night of the 14th lost sight of the launch, and at 8 P.M. on the 16th the jolly boat was picked up by the Governor Bourke. Capt. P. was cordially received, and carried with his companions to Sydney; saved, the captain, Mr. Bentley, surgeon, and five of the crew; missing; Mr. and Mrs. Street, 2 children, 2 European females, and 15 of the crew.—Cargo, wool. A strong smell of fire was the first indication at 8 A.M., when a dense volume of smoke arose; when the scuttle was taken off; hatches and scuttles caulked down immediately. At midnight flames burst up the companion. The vessel was then in lat. 33° 27' S., long. 161° 40' E. The rendezvous appointed was Lord Howe's Island; the Governor of Sydney dispatched the Prince George, revenue cutter, to search for the launch, whether they were ever heard of I cannot discover.

Ship, James Pattison, Capt. Cromarty, burnt off the Western Islands, 29th of September, 1840.—Spontaneous combustion; cargo, cotton; strenuous exertions were made to get the fire under; abandoned when masts and rigging were in flames. All hands saved by the *Norval* of Greenock from St. Johns, and bound to Leghorn.

The Whaler, Francis, Inber, burnt on the 24th of April, 1840, off the Mauritius.—A large quantity of oil on board, which made it impossible to check the flames, and in a short time she was a total wreck: cargo saved.

The Robert Haines, Capt. Blasgrow from Sumera to Daneram, destroyed by fire, December 5th, 1841.

The Sylvia, from Celta, Sept. 22nd, 1841.—Burnt; crew escaped.

Ship, Australia, Capt. Yale, from Leith to South Australia, February 3rd, 1841.—Destroyed by fire 600 miles from the Cape of Good Hope. Passengers and crew saved.

American ship, Republic, at the Mauritius, 1841—Fermentation of her cargo, linseed. Batteries opened upon her, and she was scuttled and sunk; crew saved. Eighteen shot struck her between wind and water.

Ship, Lady Raffles, Capt. Osborne, loading for London, destroyed in

April 1842.—Burnt at Sydney, smoke first seen by the Harbour Master; cargo, wool, hides, oil, and rum; ship was scuttled, and the most strenuous efforts were made to save her. No cause assigned for this loss.

Ship, Tartar, Capt. Byron, June 21st, 1842, at Southampton, and ready to sail to Vera Cruz.—Laden with warlike stores for the Mexican Government, every assistance was rendered from the shore, but shells were bursting in every direction, she was totally destroyed. No lives lost.

Ship, Georgia, Capt. Mitchell, Calcutta to London, 1841, off Madagascar, April 1st, 1842.—Burnt in the Indian Ocean, the captain and part of the crew saved by the ship *Thomas Sparks*; one boat with crew missing for some time, but all were providentially saved.

Ship, Harriet, 396 tons, Capt. Beach, nearly laden at Calcutta for London, April 19th, 1842.—Caught fire about 1 P.M., general cargo and much saltpetre, and such was the rapidity of destruction, the captain, officers, and crew were compelled to jump overboard.

Ship, Vansittart, Capt. Lyon, 1500 tons, ready for sea, and bound to China.—Burnt at Bombay, September, 1842, fire discovered at 2 A.M. June 3rd, 1842,. Every assistance given by steam vessels, &c., but this fine vessel was destroyed under very suspicious circumstances. Several lives lost.

Ship, Cornwallis, June 1842.—Burnt in Bombay harbour; cotton laden, and ready for sea; a strong impression that this fine old ship was wilfully set on fire.

Ship, Adelaide, June 27th, 1842.—Burnt in Bombay harbour, under very suspicious circumstances, she had been on fire a few days before this fatal event, and consequently every care was taken with fires and lights.

Ship, Thomas Grenville, Capt. Thornhill, 1000 tons, August 1842, —Cargo, opium and cotton, bound to China; burnt in Bombay harbour. under a strong and well grounded belief that this vile act was wilfully done.

Ship, Belvidere, Capt. Stephenson sailed from Bombay towards China on the 14th September, 1842.—Burnt at Singapore cargo, cotton; on the 19th October, 1842, under such extraordinary circumstances that legal measures were instituted.

Ship, Diana, Capt. May, 600 tons, homeward-bound whaler.—This ship was blown up at St. Helena in a very mysterious manner in 1843; supposed that a train had been laid to her magazine by some dastardly incendiary.

Dart Susa, 189 tons.—Burnt at Amsterdam, July 6th, 1840; crew escaped.

Jessey, country ship.—Burnt at Calcutta 1842.

Jemima, from London to Tampico.—Burnt in lat. 35° N., long. 18°, 22nd Feb., 1842.

Australia, 1841.—Burnt at Maranham, two persons lost, 14th Mar., 1841.

Ships, Earl Percy, 320 tons, 1842, *Potts*, 105 tons, *Fawn*, 78 tons,

1842, *Enterprize*, 102 tons, 1842.—Reported at Lloyd's as having been destroyed by fire at sea. Crew escaped.

Hope, light vessel. 1842, Sangor.—On fire, suspicion against some of her crew, saved.

Sarah and Eliza whaler of London, Capt. Billinghead, May 22nd, 1843.—Burnt by the natives in the South Sea. Crew escaped.

Ship Stag, in Sept. 1843.—This vessel was burnt by the natives: the disaster was reported by the brig *Star*, Capt. Jones; was stated that the master and mate jumped overboard and were drowned, and that the rest of the crew were massacred by the natives.

Olive Branch, Capt. Foster from ——— to London, November 5th, 1843.—Destroyed by fire, crew saved.

Mary and Isabella, from Sunderland to Murray Firth, April 23rd, 1843.—Burnt at sea, crew escaped.

Barque Louisa, Bombay harbour, December 1844.—On fire in the forehold; cargo, cotton. Saved by timely assistance, uncertain whether by design or accident. *Louisa* not much injured.

Ship Cambridge, January 7th; 1844.—Burnt at Plymouth, cause not assigned.

Ship Woodall, of Liverpool, being towed from London Docks, bound to Calcutta, and Sydney, April 24th, 1844; was discovered to be on fire off Tilbury Fort, Gravesend, and from the rapid increase of the flames was scuttled so soon as all on board could be taken out of her. No reason assigned for this disaster.

Larkins, Capt. Hibbert, Madras Road, August 1844. Partly laden with cotton; spontaneous combustion; fire subdued, two hold stanchions burnt.

Ship Scotland, owners, Messrs. William Manes and Co.—A valuable cargo from India was totally consumed by fire at Glasgow, December, 1844. No particulars of this event.

Ship Henry, Capt. Finlayson, February, 1845.—Caught fire when taking in coal off Blackwall, cast off from her moorings, and towed some distance by a steamer, when she was cast off and ran aground on the Isle of Dogs. Fire supposed to originate through carelessness with lights in the hold; ship destroyed.

Harlequin, September 20th, Sandheads.—With much treasure, fire supposed to be accidental; burnt to the water's edge and sunk.

Futtay Mobarach, Capt. Moore, Bombay harbour, July 1845.—On fire, cargo cotton and opium; fire quenched; crew strongly suspected of setting the cargo on fire.

A Ship burnt off Western Islands, June 1845.—Passed by the Argyle, too much sea to lower boats; vessel burnt and sunk; no tidings of what vessel, or whether crew escaped, but subsequent accounts render it probable that she was the Ten Brothers bound to Liverpool, and laden with cotton, and that the crew had escaped.

American ship Virginia, May 6th, 1845, off Calcutta; cargo, linseed oil and saltpetre.—Burnt at the Sandheads; fire discovered by the man at the helm; so sudden was the entire destruction of the ship that the

captain and crew were compelled to jump overboard, and were picked up by boats of vessels at hand. Supercargo drowned.

The C. C., Capt. Blair, belonging to R. and J. Henderson, of London, 440 tons, June 21st, 1845, at sea in lat. 14° 17' N., long. 114° E., fire discovered at 3 P.M.—Cargo, rice and rattans; one of the passengers declared no light had been below hatches; the smell of fire was evidently that of burning rattans, when ship rolled caused the fire. *The Judith* from Liverpool in company saved all hands. Ship was in a blaze in 20 minutes after fire was discovered.

The Charlotte, Capt. Leebshazer, Bombay, May 20th, 1845.—Partly laden with cotton, prompt assistance from other ships got the flames under. Suspicion attached to the Lascar crew.

The ship Drongon, at anchor in Middle Ground, Bombay, March 1845.—Discovered to be on fire under the fore-castle, she had cleared out, and was bound to China; fire extinguished; strong suspicion against some of the crew.

The ship Magnay, Kelso, master, of Liverpool, off the Cape de Verde Islands, in June 1845.—On fire; all attempts to subdue the flames having failed, crew took to their boats, and on the third day were picked up by the *Benin* bound to coast of Africa; fire originated in the hold among the stores, cause unknown; captain and crew were transferred to *H.M.S. Rapid*, and landed at Plymouth, they lost every thing.

The ship Bombay Castle, Capt. Frazer, burnt off Sangor Island, 27th May, 1846, burnt till daylight, captain, passengers, and most of the crew saved by vessels in company.—Bound to China; cargo cotton, fire discovered about midnight; every reason to believe the loss of this fine ship was owing to the diabolical conduct of some of the crew. Several lives lost—Lascars who took to a raft.

Barque Achilles, Capt. Globe, burnt at sea on 24th of April, 1846, lat. 21° S., long. 70° E.—Laden with jute, indigo, and sugar, crew reached Rodrigues with some difficulty in the long boat, and were carried into the Mauritius in the *Ariel*. Spontaneous ignition supposed to be the cause of this disaster.

Brig Cuning.—Destroyed by fire, in the straits of Magellan, on the 16th of December, 1846, brig sunk in 7½ fathoms; no cause assigned. The carpenter and two seamen supposed to be lost.

Ship Elizabeth Walker, Capt. Gillies from Bombay to China, burnt on the 11th of October, 1846, off the Anambas, China Sea.—Left Bombay on the 10th of September; cargo, cotton; fire discovered in the captain's cabin, the moment he opened the door the flames burst upon him, which must have originated under the cabin; rigging caught fire in twenty minutes after the discovery of the fire, and the decks were in a blaze; all efforts to save the ship were fruitless, and the crew took to their boats, they were fortunately picked up by another vessel, which put them on board the *John Bull* bound to Singapore. No cause assigned, but supposed to arise from spontaneous combustion.

The ship William, Rathbone, from Calcutta to London, burnt at sea, on 9th May, 1846, in lat. 32° N., long. 36° W.—The ship had a quan-

* This is a strange title for a ship, but so she was registered.

tity of jute on board, and for several days before the fire was discovered, intense heat had proceeded from the hold, but the first alarm was raised by a boy, who first discovered a quantity of smoke issuing from the fore hold, efforts were made to subdue the fire by scuttling, &c.; but when they were found of no avail, three boats from the Agincourt, Captain Nesbit, came to the rescue of the crew, and the William Rathbone was abandoned; soon after the ship was in a blaze. No other cause assigned than spontaneous ignition.

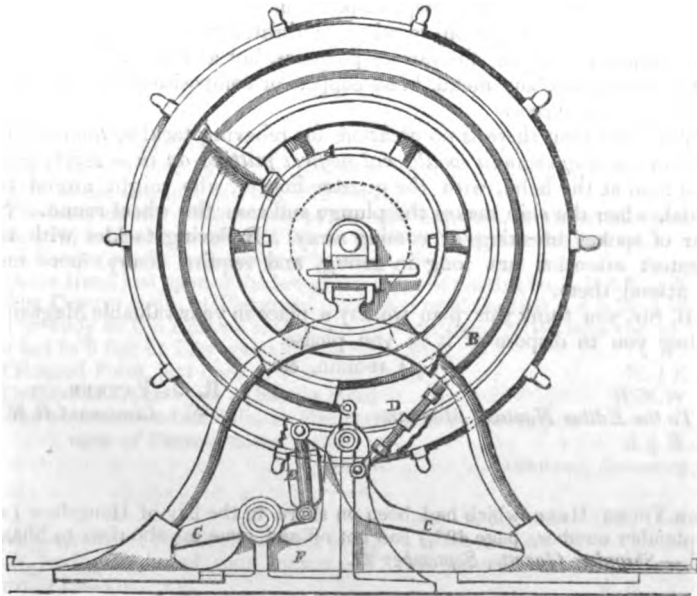
Barque Sulimony, February 28th, 1841.—Off Kiddipore dockyard, caught fire, which was soon subdued: commenced among some bales. No one suspected of evil intent.

Ship Charles Grant, Bombay bound to Calcutta, June 1st, 1847.—Cargo, cotton; caught fire in the after hold which was speedily subdued. No clue discovered as to the cause of this act.

Barque Mars, off Calcutta, March 19th, 1847.—Cargo principally inte and linseed, prompt efforts to subdue the fire without effect, she was burnt, scuttled, and sunk; some suspicion that drawing off spirits was the cause; and on the other hand it was thought to arise from spontaneous combustion.

(To be concluded in our next)

PATENT COMPRESSURE FOR STEERING WHEEL, *to prevent accidents to the Helmsman, and to secure the Rudder against violent shock.*—By Lieut. R. J. Fayer, R.N.



Reference to Plan.—A. Break wheel; B. Wood break with wrought iron strap; C. Wrought iron levers; D. Screw for tightening break as the wood wears, or the frost to relax, or hot sun to tighten; E. Balance weight; F. Metal support for levers. (Any metal will answer the purposes, brass or composition.)

London, June 1847.

SIR.—I have had during my command three of the largest Steamers yet sent across the Atlantic, viz: Liverpool, 1200 tons; President 2366 tons; and Forth 1800 tons, and found difficulty with the helm in severe weather head to, the wheel not unfrequently getting the better of the helmsmen, and in some instances throwing them over the wheel and seriously injuring them. In the Liverpool in the Gulf Stream in a severe gale more than once these unpleasant and dangerous events occurred. The revolutions of the wheel (paddle) were just sufficient to keep the ship head to. It is not only the danger to the men at the helm, and the violent action of the wheel flying round in a heavy plunge, but the *pinbles* also; the great matter I had to consider was, how to keep possession of the wheel, which with all the relieving tackles could not be done. I have suggested the plan herewith sent, and which has been seen by several distinguished officers and seamen. You will observe it acts sympathetically, *i.e.* any degree of compression may be obtained, so that there is no necessity for sudden stoppage, but to ease through the brakes. The man steering places his foot on the Pedal end, obtains any pressure required, even to a stoppage. Thus in any stern board evolution the rudder may be, *steadily* kept in position.

The screw D, I put on to relax or tighten the Band as required. Iron is mentioned for the various purposes, but as that is objectionable to the compasses, any metal, brass copper, or composition will be made to answer the purpose.

With this plan there is no occasion for relieving tackles, *though as a precaution any seaman would not neglect putting on in a severe gale.* The man at the helm, with the quarter-master, who might attend the Pedal, when the ship makes the plunge and ease the wheel round. No fear of spokes breaking or coming away. Relieving tackles with the greatest attention are long in acting, and require many more men to attend them.

If, Sir, you think this plan worthy a place in your valuable Magazine, I beg you to dispose of it as you please.

I remain, &c.,

R. J. FAYRER,
Lieutenant R.N.

To the Editor Nautical Magazine.

THE YOUNG HEBB which had been on shore in the bay of Hangchow (see September number, page 498,) had got off and gone up the river to Shanghai.—*Shipping Gazette, September 27.*

NAUTICAL NOTICES.

Trinity House, London, September 22nd, 1847.

WRECK OFF DEAL CASTLE.—Notice is hereby given, that a Green buoy marked with the word *Wreck*, has been placed about 20 fathoms to the eastward of a vessel sunk in the track of shipping, and in the anchorage off Deal Castle.

The buoy lies in $7\frac{1}{2}$ fathoms at Low water spring tides, and about one mile from the shore, with the following marks and compass bearings, viz :

Upper Deal Church in line with the south end of the South Barracks at Deal	W.N.W.
St. Margaret's Church in line with the Preventive Station House at Kingsdown	S.W. $\frac{1}{2}$ W.
By order,	J. HERBERT, <i>Secretary.</i>

Trinity House, London, September 23rd, 1847.

FLOATING LIGHT, BAHAMA BANK, OFF RAMSAY, ISLE OF MAN.—Notice is hereby given, that in compliance with the request of the Ship Owners, masters of vessels, and other persons interested in the navigation between the Isle of Man and the coast of Cumberland, a Floating Light-vessel, the equipment of which will be completed in a few weeks, will be moored off the Eastern part of the shoal called the *Bahama Bank*, off Ramsay Bay.

Mariners will observe, that on board this vessel *Two Fixed Lights* will be exhibited on separate masts, and that it will be thereby readily distinguishable from the neighbouring Shore lights on the Isle of Man, and on the English and Scottish coasts.

Notice of the night on which the Lights on board this Vessel will be first exhibited, together with all needful particulars in respect of the exact position of the latter, will be hereafter published.

By order	J. HERBERT, <i>Secretary.</i>
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Trinity, House, London, October 8th, 1847.

WRECKS AT FISHGUARD.—Notice is hereby given, that Green buoys, marked with the word *Wreck* have been placed to mark the positions of two Sunken vessels at the entrance of Fishguard Creek.

The buoy on the *Western* side of the said entrance, is placed 22 fathoms N.E. $\frac{1}{2}$ E., from the wreck, and lies in 7 feet at Low water spring tides, with the following marks and compass bearings, viz :

Dinas Head just open of the low grassy point of Castle Head	E.b.N. $\frac{1}{2}$ N.
The Custom house at Fishguard, just open of Slade Hill	S.b.W. $\frac{1}{4}$ W.
The buoy on the <i>Eastern</i> side, is placed 23 fathoms N.W. from the wreck, and lies in 9 feet at Low water spring tides, with,	
Crincoed Point, just open of Penmoel Point	N. $\frac{1}{4}$ E.
Duffin Farm, just open of Saddle Head	W.N.W.
The easternmost Limekiln, at Fishguard Lower Town, just open of Penmanmavoc Point	S. $\frac{3}{4}$ W.
By order,	J. HERBERT, <i>Secretary.</i>

Naples, September 25th, 1847.

All Captains of vessels bound for any port in his Sicilian Majesty's dominions, having on board spun cotton of French manufacture, in order to be
NO. 11.—VOL. XVI. 4 G

admitted into such ports, must be provided with a certificate from the first authority, affirming that such cottons are so manufactured, which certificate must be attested by the Consul or Vice-consul of his Sicilian Majesty, in order that upon their arrival they may be admitted to free pratique.

H. S. MINASTI,

Sicilian Consul General.

Consulate General of the two Sicilies, London, October 14th.

KINGSTOWN HARBOUR LIGHT, East Coast of Ireland.—The Corporation for preserving and improving the port of Dublin, hereby give notice, that on and after the 1st of October next, the Light hitherto shewn from the Timber building on the East pier of Kingstown harbour, Dublin Bay, will be discontinued, and a Light exhibited from the tower built on the pier-head, which will thenceforth be illuminated every night from sun-set to sun-rise.

Specification given of the position and appearance of the Tower, &c., by Mr. Halpin, the Inspector of Light-houses:—The New Tower is in lat. $53^{\circ} 18' 10''$ N., and long. $6^{\circ} 7' 45''$ W., and bears from North end of Kish Bank, N.W.b.W. $\frac{3}{4}$ W., distant $6\frac{3}{4}$ sea miles; from South end of Burford Bank, W.b.N. $\frac{3}{4}$ N., distant $3\frac{3}{4}$ sea miles; from Poolbeg Lighthouse, S $\frac{1}{2}$ W. distant $2\frac{1}{2}$ sea miles.

The Tower is erected in the centre of the East pier-head, it is of circular form, as also the lower building around. The outer walling granite.

The Light will be at an elevation of thirty-seven feet above the level of High-water springs, and will, in appearance, be similar to the present Light, viz:—a Revolving Light, presenting White and Red faces alternately, attaining their greatest brilliancy at equal intervals of thirty seconds. The Light will be shewn in all directions in which the present light has heretofore been visible; kept open, it will lead clear of the Muglins Rock s.

Until the erection of a Light on the West pier-head the small Fixed Red Light in the temporary timber shed on that Pier will be continued as before. Bearings stated are Magnetic—Variation 27° W.

By order,

H. VEREKER, *Secretary.*

Ballast Office, Dublin, September 9th, 1847.

LIVERPOOL.—The Trustees of the Liverpool Docks and Harbour do hereby give notice that the following changes in the Lighting, Beaconing, and Buoying of the Northern approaches to this Port will take place on and after the night of Tuesday, the 2nd of November, 1847.

Crosby Lighthouse.—A new light tower has been erected nearly half-a-mile N.E.b.N. of the present Crosby Light-house. The light therefrom will be exhibited, for the first time, on the evening of the above date, and be continued every night from sunset to sunrise.

The light in this tower will be stationary, of a Red Colour, elevated 96 feet above the sea at half-tide level, and will be visible between the bearings of S.S.E. and N.E.b.E. $\frac{1}{2}$ E., which limits will indicate respectively when a vessel is westward of Mad Wharf, and when she is abreast of the Crosby light vessel, and ought to shape her fairway course up the Crosby channel.

The Formby light vessel will be moved 170 fathoms N.b.W. $\frac{1}{2}$ W. of her present position, into 35 feet at low water. When brought in a line with the New Crosby Shore light, she will lead in from seaward through the Victoria channel, on a course of S.E.b.E. $\frac{3}{4}$ E.; and when brought in a line with the

Crosby light vessel, she will lead in through the Half-tide Swashway, on the bearing of S.S.E. $\frac{3}{4}$ E.

Crosby Beacon—The Crosby Shore beacon will be moved nearly half-a-mile N. $\frac{1}{4}$ E. of its present position, on a line with the Crosby shore light and Formby light vessel.

The Bell beacon will be moved about 170 fathoms S.W. of its present position, into 35 feet at low water, with the Formby light vessel and Crosby shore light in one, and bearing from the N.W. light ship N.E. $\frac{1}{4}$ E. four miles.

V. 4. Red (Can) buoy, with Perch, will be moved nearly a quarter of a mile N.W.b.N. of its present position, into 21 feet at low water. Formby light vessel bearing N.E.b.E. about one-sixth of a mile. C. 1, Red (Can) S.S.E. $\frac{3}{4}$ E. nearly one and a half miles.

Formby N.W. Sea Mark will be moved one and one-eighth mile N.N.E. $\frac{1}{4}$ E. of its present position, and a new beacon will be erected on Mad Wharf.

These beacons, when brought in one, on the bearing of S.E.b.E. $\frac{1}{4}$ E., will lead from Formby N.W. buoy up the fairway of the entrance of the Old Formby channel.

WILLIAM LORD, *Marine Surveyor*.

By order of the Dock Committee,

DANIEL MASON, *Secretary*.

Dock-Office, Liverpool, Sept. 16th, 1847.

NEW HARBOUR AT LOWESTOFT.—Rules and Regulations for Vessels entering.

1. All vessels bound into the new harbour will hoist an Ensign at the peak, and if requiring the services of the Steam-tug, a flag or burgee at the mast head. Vessels on shore, upon the sands, or in difficulties, requiring the assistance of the Tug will hoist a flag at the mast head.

At night the signal for the Tug will be two lights where best seen, a single light being the signal for a pilot.

2. To facilitate the entrance into the harbour by night, two red lights are shown, one on each pier head, and kept burning from sunset to sunrise. At the entrance of the inner harbour two green lights are shown, which brought in a line vertical, leads into the inner channel, but vessels must not approach the bridge until the lower light is changed to red, which is the signal that the bridge is open. Sailing out at night, one green light will be shewn, which will be changed to red when the bridge is open.

3. A Red flag will be hoisted on the look-out station of the inner harbour when the gates are open, and kept flying during the time vessels can enter the inner harbour; vessels may enter the outer harbour at all times of tide, but they are not to attempt to enter the inner harbour unless the red flag is hoisted by day, and the two green lights shewn by night.

Previous to closing the gates a Black ball will be hoisted.

4. Vessels are not to anchor in the fairway, but between the buoys in the outer harbour and the piers, and moor by running out a stern hawser to the places appointed for that purpose.

5. Masters of vessels requiring to beach for the purpose of examining or cleaning, are to apply to the Harbour Master for permission.

6. A convenient Fish wharf being provided on the north side of the harbour, no fish will be allowed to land elsewhere.

7. The discharge of fire arms is strictly prohibited in the harbour.

8. Any person who shall throw overboard any ballast, ashes, dirt, or rubbish, or shall heat or boil any pitch, tar, rosin, turpentine, oil, or any combustible or inflammable matter, will be punished according to law.

By order of the Board,

WILLIAM S. ANDREWS, *Harbour Master*,

Harbour Master's Office, August 28th, 1847.

STRAITS OF GIBRALTAR.—Messrs. Longlands, Cowell and Co., Agents for Lloyd's of England, France, Austria, Belgium, Hamburg, &c., feel it their duty to call the attention of British, as well as Foreign Captains, to the utility of hoisting the Private signals of their respective vessels, or their Numbers by Marryatt's Code, when passing in or out of the Straits, by which means the said Agents will be enabled to report their vessels to Lloyd's, for the information of the Owners and others concerned.

Lloyd's Agency Office, Gibraltar, Sept. 2nd, 1847.

MARKS ON THE SHOALS AND SANDBANKS BETWEEN THE KOHL (COAL) AND HELSINGBURG.—The Swedish Government has, under the 31st of August this year, made known that the following marks, (black painted polea with white wifts at the top) have been laid down, and will be taken away some time in November this year; they will in future be laid out in May, and taken away in November every year.

(All the below mentioned bearings are magnetic :—)

1st.—Off the Skars or Norrskarsbaden, to the S.W. of Nyhamn in 5½ fathoms water, about one and a half cable's length from the shoal. Kohl Light bearing N.b.W., and Wasby Church S.E.

2nd.—Near the Molleground off Hoganass, to the W.S.W. of the shoal in 5 fathoms water, at about two cables length off. Kohl Light bearing N. and Wasby Church E.b.S.

3rd.—Near the Jungnassbaden off Lerberg W.N.W. of the shoal in 5 fathoms, and about two cables length off. Wiken Church bearing S.S.E. and Wasby Church E.b.N.

4th.—Near the Svinebaden (Swinebottoms)—North of Wiken W.b.N., from the reef, at about two cables length, or 4½ fathoms water. Wiken Church bearing S.E., and Wasby Church N.E.b.E.

5th.—Near the Grollegunden N.W. of Kulla Gunnarstorp, W.N.W. of the shoal, at about half a cable length from the same, in 4½ fathoms. Kohl Light bearing due north, and Kulla Gunnerstorp S.E.b.S.

CHAPMAN, NORRIS, AND CO.

Elsinore, Sept 11th, 1847.

LIGHTHOUSE ON MINÔT'S LEDGE.—Our readers are aware that an appropriation was made at the last session of Congress for placing a light on this dangerous rock. It lies fifteen miles S.E. from Boston light, and nearly three miles from the nearest land. S.W.b.W., in shore, are numerous single rocks and ledges, many of them covered at high water, the whole known as "Cohasset Rocks," and being in the direct track of vessels bound into Boston from the south, are exceedingly dangerous. At the suggestion of Capt. W. H. Swift, the eminent topographical engineer (under whose superintendence the work is now progressing), the 5th auditor decided to erect upon the outer Minôt a wrought iron structure, consisting of nine piles, eight inches in diameter, at the base, tapering to five inches at the top, one in the centre, and eight in a circle of 25 feet in diameter, falling into a circle of 14 feet at the top, and 50 feet high; each pile to be placed 5 feet into the rock, and securely wedged and braced a suitable distance with heavy bars of wrought iron. Upon the top of these piles a cast iron frame or spider, weighing nearly five tons, is to be firmly secured. Upon this spider a house for the keeper is to be built, above which the lantern will be constructed. This is the first attempt ever made to build a lighthouse of this description, and if completed, it will be second to none on our coast in importance. The yearly

losses upon these and the surrounding rocks, for the last ten years, have been sufficient to erect and maintain the light now proposed. After several forfeitures on the part of others, the work has now been undertaken by B. Pomeroy, Esq., of Stonington, Conn., who has had considerable experience in work of this kind.

The rock is covered at high water to the depth of 10 or 12 feet, and in very low tides is only exposed from 3 to 4 feet. Some idea of the difficulty of the work will be apparent from the fact, that a landing can only be effected in pleasant weather, after a continuance of westerly winds; and the preparatory works be done in from 2 to 3 hours, at low water only. Boats cannot lie alongside the rock at any time, and a landing cannot be made without much care and some danger. An easterly wind, however light, raises a sea which renders it impossible to approach the rock, and it is calculated that in heavy eastern gales the sea will break nearly to the top of the spider. No lighthouse in the world is as much exposed to the action of the sea as this will be, and it is supposed that none is so well calculated to resist its fury. Mr. Pomeroy has invented an apparatus for drilling the holes, which are to be 12 inches in diameter at the top, that promise to do the work with accuracy and dispatch.—*New York Express, August 23.*

GIBALTAR.—August 31st: His Excellency the Governor has received the following official notification from her Majesty's Vice-Consul at Tangier:—“The Rose was chartered at Gibraltar for Casa Bianca, but the master not finding such a town marked on the chart, made for Cape Blanco, where upon his landing with part of his crew, he and they were stopped by the authorities, and brought prisoners before the Sheik of the district, by whom they were, however, liberated on the representation of Mr. Redman, her Majesty's Vice consul at Mazagan, and the Rose proceeded on her voyage. It should be particularly observed that “Casa Bianca” does not appear in most of the charts, the real Moorish name of which is “Dar-el baida” or “Anafa”, both which appellations are inserted in all the common charts. Her Majesty's Vice-Consul recommends, in addition, that all ships and persons going to the west coast of Barbary, should pay strict attention to the notice of the late Consul-General, Mr. Drummond Hay, which was published in the *Gibraltar Chronicle* of the 21st September 1843, by authority, in order that such perilous occurrences may be avoided.

Trinity House, Dundee, Oct. 1st, 1847.

NAVIGATION OF THE RIVER TAY.—Notice is hereby given, that an additional buoy has been moored on the Gaa, to the northward of the present three black and white chequered buoys on that sand, the position of which is as follows:—

The two light-houses at Buttonness are a little open to the eastward, and No. 3, red buoy, on the Albertay Sand, bears S.b.W. $\frac{1}{2}$ W. The chimney of the Vitriol Works at the extreme west-end of the village of Carnaistie, being in line with the east-end of the Sandy Down.

This additional buoy is black and white chequered, and lies in $3\frac{1}{2}$ fathoms at low water, spring tides.

Mariners will take notice, that the N.E. side of the entrance is now marked out by four black and white chequered buoys on the Gaa; No. 1, or the Seaward Buoy, having a staff and ball on the top of it; and the buoy now moored, being the fourth buoy, having a black top.

By order of the Corporation,

ROBERT TASH, *Master.*
JAS. M'EWEN, *Secretary.*

LIGHT HOUSE OF THE ISLE OF CHAUSEY.—(*Department De la Manche.*)—A white light varied from 4 to 4 minutes by red flashes. Mariners are informed that from the 15th of October instant, a white light with red flashes at intervals of 4 minutes, will be exhibited, throughout the night, from the summit of the tower recently constructed at the southern extremity of the Great Isle of Chausey (Manche) in place of the ancient signal.—Lat. $48^{\circ} 52' 13''$, long. $4^{\circ} 9' 35''$, (Paris.)—Elevation of the light above the ground 17 metres; above the sea 37 metres; and visible at a distance of 15 geographical miles.

LIGHTS OF THE LOWER SEINE, OF POINT DU HODE.—Fixed white lights. From the 1st of October instant; the fixed light of the Point du Hode, visible at a distance of 4 geographical miles, will be replaced by a light exhibited upon the little tower recently constructed at some metres to the east of the old one. This new light will be visible at a distance of 8 geographical miles.

LIGHTS OF TANCARVILLE.—From the same day, the light of the Point of Tancarville will be replaced by a light also fixed, and exhibited upon the little tower recently constructed at 145 metres to the N.E. of the old one. This new light will be visible at a distance of 8 geographical miles.

BOTTLE PAPERS.

“July 15, 1847. At sea, barque Britannia, of Whitby, Richard Breekon, master, from Quebec to London. Lat. $45^{\circ} 40' N.$, long. $55^{\circ} 20' W.$ ”

“This was thrown overboard in order to ascertain, if possible, the set and drift of the current, whoever picks it up will be kind enough to transmit the same to the Editor of the *Nautical Magazine*, London, and oblige

Yours, truly,

RICHARD BREEKON.”

We return our acknowledgments to Messrs. Shea and Murphy, of St. John's, Newfoundland, for their attention in forwarding to us in a letter, dated 15th Sept., 1847, the above document, picked up on the 1st Sept. on the S.W. coast of the island, by one of their vessels.—ED. *N.M.*]

Mr. Breckon has also our thanks for his remembrance of us.

By the attention of the French Government in transmitting to the Admiralty a bottle paper, which was picked up off the “Seven Islands,” Coast of France, we are enabled to acknowledge it. “Ship Walpole, from London to New York, Nov. 1, 1816. Lat. $48^{\circ} 55'$, long. $17^{\circ} 18''.$ ” Reverse, “Francis Winsor, mate, written at 12 o'Clock at night, in the dark.”

IMPORTANT TO SEAMEN.—At the Liverpool Police Court, on Saturday, Captain Kennedy, of the ship *Gauntlet*, of that port, appeared before Mr. Rushton and Mr. Potter, to show cause why he refused to pay William Alcock the sum of £19. 1s, due to him for wages. The case had been before the Court, but had been postponed. Alcock, upon being sworn, stated that he had been the chief mate of the *Gauntlet*, and that he had sailed from Liver-

pool to Acajulta, at £4. 10s. per month. The moment the ship had left Liverpool the Captain ordered a quantity of brandy to be brought to him, and from that time he was continually drunk. Five days before arriving at their destination, the captain's conduct was such that it was found necessary to put him in irons. This was done at his own request. He had attempted to shoot one of the crew, and the mate had taken the pistol from him. He had threatened to take the ship to the coast of Brazil, and sell both her and her cargo. Upon cross-examination by Mr. James, the complainant stated that he and several others of the crew had been placed in irons for mutiny, and brought home prisoners by the brig *Fifteen*, Capt. Chaffe. The complainant and the second mate and carpenter, had been examined by the British Consul at Acajulta. The log-book had been altered in some places a month after the entries had been made, and the mate contradicted some of the evidence which he had given at the time of his examination before the British Consul. William Gamble, carpenter on board the *Gauntlet*, said that the captain was seldom sober. When off Cape Horn he came on board with a pistol, and swore he would shoot a man who was on the yard arm; but W. Alcock stepped behind him, took the pistol from him, and fired it off over the star-board quarter. The steward had another loaded pistol on the companion to hand to the captain. The second mate, in the course of his evidence, stated that the captain said he dare not proceed to his destination because of his conduct to the lady passenger. He told the men that he would tell her that he would put a light to the powder if she would not forgive him; and then, said he, "We'll all go to h— together." The second mate was next called, and he repeated the statement that the captain was seldom sober; but he denied the carpenter's statement as to certain words which the captain was alleged to have uttered when he threatened to shoot the man who was on the yard-arm. Mr. Rushton said it was quite clear there was a contradiction by the last witness of one most material allegation against the captain. The thing was utterly false, or it would have been heard by the last witness, who was within eighteen inches of the sailor when the words were alleged to have been used. There were three points in the case which showed that the evidence was not to be relied upon, and, in the course of his experience, he never heard a case got up in such a manner. The mate had falsified the log; he had made cross entries to justify his conduct, and many of these entries had been made a month after the day on which they bore date. Of course the complainant would get no wages.—Mr. Davenport said, at any rate there were the cases of the others.—Mr. Rushton: "You have all three acted in concert together."—Mr. Davenport: "The carpenter claims £19."—Mr. Rushton: "I won't give him a shilling. This case only comes before me in a certain form, and therefore I shall only say that I reject the claims for wages."

ADMIRALTY ORDER.—"Application having been made to their Lordships on the part of the crews of Her Majesty's ships to be allowed the indulgence of taking up an additional quantity of tea and sugar in lieu of the daily ration of spirits, their Lordships with the view of carrying into effect and encouraging so desirable an arrangement, are pleased to sanction the issue of the following quantities of tea and sugar, for the daily ration of spirits, to such of the crews of Her Majesty's ships as may be desirous of making the substitution,—viz., tea, half an ounce; sugar, two ounces. Any men that may be disposed to take up only one-half the allowance of spirits, would then receive one-half of the above proportion,—viz., tea, quarter of an ounce;

sugar, one ounce. Or they may be paid the savings money upon the tea and sugar in lieu thereof. The above circular is to be read to the different ship's companies, and fully explained that the proposed change is to be entirely volutary on their part.

H. G. WAED.

"To all Flag Officers, Captains, and Commanding Officers of her Majesty's Ships and Vessels."

YACHTING INTELLIGENCE.

Royal Mersey Yacht Club.—The usual Monthly meeting of this Club took place at the Club-room, Liverpool, on Tuesday the 5th; the Cup Bearer was voted to the Chair in the absence of the Commodore. The following gentlemen and Yacht owners were ballotted for and admitted Members:—C. R. Trevor Roper, Esq., Plaste, Flintshire, "*Wyvern*," yacht, 27 tons; A. Crawshaw, Capt. 17th Lancers, Portobello Barracks, Dublin, "*Rose*," yacht, 40 tons. A vote of thanks was passed to Lieut. W. Lord, R.A., marine surveyor, for a copy of his very excellent Survey and Chart of the Bay of Liverpool.

At the last meeting the Secretary stated that he had been in correspondence with the French Embassy, and now had the pleasure of informing the Club that the privilege of entering the French ports was granted to the Yacht Clubs. We believe the Royal Mersey Yacht Club, this season, has the credit of having brought off the best Yacht sailing matches in the Kingdom.

The following is a list of the Yachts entered to contend in July last, for the Challenge Cup, and Purse of £150 value, and a Prize of £50 value, in June.

Sultana, 100 tons.	Water Wyvern, 42 tons.
Gondola, 76 tons.	Echo, 32 tons.
Bacchante, 80 tons.	Enigma, 25 tons.
Queen of the Ocean, 49 tons.	Prima Donna, 25 tons.
Victoria, 59 tons.	Gem, 12 tons.
Vision, 45 tons.	

These entries, we believe, amount in tonnage greater than any other sailing matches which have taken place this year.

EXTRAORDINARY MAGNETIC DISTURBANCE.—The largest magnetic disturbance that has been observed in Great Britain, and most probably in Europe, occurred on Friday, the 24th September. Evidences of irregularity in the motions of the magnets in Sir Thomas Brisbane's Observatory at Mackerstoun, were observed at 7 A.M. of the 24th. About 10h. A.M. the magnets were not much from their usual positions; at noon the declination magnet was found much disturbed, sweeping through large arcs of vibration. At this time continuous observations were commenced, the declination, bipolar, and balance magnets being observed every minute. The extent of this disturbance at Mackerstoun has not yet been wholly determined; the scale of the horizontal force magnet traversed the field of the telescope in different directions in the course of a few minutes. Recourse was had to a second magnet, acting as a deflector, for the purpose of bringing the scale again within the

field of view. The range of the vertical component of the terrestrial magnetic force was about .014 of the whole vertical component, while the range of the magnetic declination was about $3^{\circ} 50'$. This disturbance belongs to a peculiar class, one in which the greatest excursions of the magnet occur early in the afternoon; it has a considerable resemblance to the next greatest that has been observed—the celebrated disturbance of September 25th, 1841, when the Astronomer Royal at Greenwich imagined that some wags were running iron wheels round his observatory. It is curious that the interval is precisely six years. Is this correspondence in date accidental? Professor Kreil has concluded, from the Prague observations, and Colonel Sabine from those made at Toronto, that disturbances have their maximum effect in winter; whereas Dr. Lloyd has concluded, from the Dublin observations (but by a different method), that it is in summer. The Mackerstoun observations seem to show a different result from either, the maximum effect occurring nearer the equinoxes, and the smallest amounts of disturbances occurring near mid-summer and mid-winter.

It was remarkable in the present disturbance, as opposed to the general law, that at the time when the declination magnet usually had its greatest westerly position, the disturbance was wholly towards the east. The barometer, which was rather steady during the day, fell about three-tenths of an inch between midnight of the 24th and 7h. A.M., of the 25th. A dense mass of hazy cirrostratus overspread the sky, and prevented the aurora borealis from being visible at Mackerstoun. There is no doubt however, that where there was a clear sky a very brilliant aurora would be seen.—*Edinburgh Witness*.

LOSS OF THE CLEOPATRA.—For several weeks past, a feeling of the deepest regret has prevailed amongst the authorities of the East India House, in consequence of the receipt of intelligence from the Company's Marine Depôt at Bombay, announcing the probable loss of the above mentioned vessel. The circumstances attending her destruction will, most likely ever remain in mystery. The *Cleopatra*, it is stated, from her peculiar form of build, was not well adapted for the service in which she was commissioned. She measured nearly 800 tons burden, and carried four guns. She steamed from Bombay on the 14th of April last, with orders for Singapore, and had on board nearly 200 convicts. Her crew comprised 70 persons. There was also a detachment of marines on board. Among the officers in charge of the ship may be mentioned Captain J. A. Young, Commander, Lieutenant Eden, Lieutenant Ralph, Mr. F. W. Nott, Mr. T. G. Croad, acting master, and Mr. J. Soady, son of Captain Soady, R.N. Four days after her departure from Bombay, it came on a frightful hurricane, which continued with unabated violence three days—the 17th, 18th, 19th. It is very probable that the *Cleopatra* had, at the time of encountering the storm, reached the Malabar coast, off which, unfortunately, there is too much reason to believe she foundered, with every human being on board.

The marine authorities at Bombay sent out two powerful steamers in search of her, and, according to the last accounts, not the slightest discovery had been made that would tend to clear up the mystery that at present surrounds the fate of the vessel. The uninhabited islands westward, to which it was thought that the ill fated steamer might probably have been driven, had been inspected, but of no avail; neither had any wreck corresponding with the *Cleopatra* been picked up.—*Globe*.

LABUAN AND BORNEO, *Engagement between H.M. Steamer Nemesis and Borneo Pirates.*

Our latest intelligence from these islands extends to the 10th of June—At the end of May the *Nemesis* steamer, having on board Mr. Brooke, Capt. Grey, of H.M.S. *Columbine*, and Lieut. Gordon, of H.M.S. *Royalist*, proceeded to Bruni, to obtain the ratification of the treaty with the Sultan. On the 28th of May the Sultan ratified the treaty, which Mr. Brooke was to convey with him to England by the steamer which left Singapore on the 6th of August. It was on the steamer's return from Bruni to Labuan that she encountered the Balanini pirates.

Early on the morning of the 13th of May the *Nemesis*, with Mr. Brooke and Capt. Grey on board, and having in tow a cutter of the *Columbine*, left the town of Bruni to cross over to the new British port of Labuan. Information was received on the way down the river that some fishermen had been chased at daylight, and on rounding the point of the island of Moarra, the look-out of the *Nemesis* descried a fleet of Balanini or Sulo pirates, in full chase of a trading prahu in the offing. Immediately the steamer appeared, the pirates, quitting the chase, pulled in shore to the westward, and at the same time cut away the small boats they had in tow, whilst the steamer, pursuing at full speed, lost much ground in having to round the extensive shoal which stretches from Moarra Point (Upjong Sapo) to the islet of Pilong Pilongan. The Balanini were first descried at 9h. 30m. A.M., and at mid day, finding the steamer gaining upon them, came to anchor.

At 1 P.M. the pirate fleet was plainly made out from the *Nemesis*; eleven large prahus, anchored in a line at a distance of about ten yards one from another, along a sandy beach, with their heads to sea, their sterns (fast by stern warps ashore) in the surf, and with a hawser passed along from boat to boat. The bows of the prahus were protected by ampilans, formed of musket proof planks, they appeared well armed, crowded with men, and in this formidable position awaited the approach of the steamer. At 1h. 30m. the pirates opened fire on the steamer, and the action commenced in earnest at a distance of about two hundred yards, the steamer being in two fathoms of water, and rolling heavily in a ground swell.

For two hours a heavy fire was kept up by the *Nemesis*, and the fire from the pirates being nearly silenced, and their prahu evidently much damaged, Capt. Grey, with three cutters (one belonging to the *Columbine* and two to the *Nemesis*), resolved to make a dash at the left of the pirate's position, whilst the steamer poured in grape and canister upon the centre and right, to prevent their rendering aid to their comrades. On the advance of our three small boats, the pirates, casting loose the hawser which attached their prahus together, pulled away to the eastward in a crippled state, leaving two prahus in possession of our boats, and numbers of men on the beach or jungle. The *Nemesis* pursued to the eastward, and one after another drove six of the flying enemy ashore, all of which were for the time abandoned by their crews, but could not be taken possession of owing to the small number of our boats in the action.

In the mean time, whilst Capt. Grey was securing the two prizes already mentioned to the westward, and the *Nemesis* in full pursuit of the three last prahus to the eastward, five out of six of the deserted boats were re-manned, and with a resolution praiseworthy in a better cause, bore down to the attack of our three cutters. Capt. Wallage, commander of the *Nemesis*, perceiving this manœuvre, anxious for our overmatched boats, and convinced that these

prahus must, at all events, escape to the westward, returned in that direction, while the sixth deserted prahu being re-manned, and favoured by a breeze, crowded all sail to the eastward, after her three consorts, and thus the four escaped. The five pirate prahus now advancing boldly towards our three cutters, perceiving the retrograde movement made by the *Nemesis*, made every effort to escape to the westward, and a severe action took place between the sternmost prahu and the boats, the enemy defending himself with the utmost resolution, and inflicting a severe loss on our party. While Capt. Grey was engaged in the capture of this large prahu, the steamer pursued the four to the westward, two of which were captured, whilst the remaining two escaped in the darkness in a completely shattered state, after having been several times deserted and as often remanned. Thus concluded this successful action with a pirate force consisting of eleven prahus, two of the largest size, four somewhat smaller, with crews of full fifty men each, and five with a complement of thirty-five to forty hands. The force of the pirates at a moderate computation must be reckoned at 500 men, exclusive of captives, and these on the testimony of some rescued Chinese were above 100.

It is difficult to form a correct estimate of the killed and wounded on the enemy's part; but as forty to fifty men were dead on the beach, ten men killed found in the captured prahu, and the like number in the prahu which escaped, besides those which may have died in the jungle, we may reckon the killed at 80 to 100 men, and the wounded at double that number. The loss on the British side was one killed and seven men wounded—two mortally, and most all severely. Ten brass guns, varying in size from 9 pounders to Lelas, and five iron guns, three to six pounders, were captured.

Five prahus were taken, and the escape of the rest is attributed to the small number of our boats, as at one time eight prahus were lying on the beach abandoned by their crews, and had our boats been sufficient to secure them, the other three would have been overtaken by the *Nemesis*.

The following is the sequel of the account of the above engagement between the pirates and the *Nemesis*, which is contained in dates to the 20th of July. The destruction of 42 pirates has been most signal—revolting, indeed, since the manner of their death was truly horrfying. The principal part of the slain pirates were captured in a house at the top of a hill, whither they fled and stoutly resisted; but the immense number of the besiegers compelled the pirates to surrender, which they did on the 31st of May, two days after the engagement with the steamer. The Sultan of Borneo, who secured the persons of the pirates, appointed the 4th day of June for their slaughter. They were taken to the rear of Bruni town, and the whole of the recaptured captives, thirty in number, were assembled on the spot. The day was made a general holiday; hundreds of Dyaks were drawn to the spot. The Sultan directed the whole of the pirates to be secured with their hands tied behind their backs, their feet also bound, and a thick cord secured the knees to the neck—in this state they were utterly helpless. The Sultan then addressed the late captives, and after expressing his dislike of piracy and slavery, requested the captives to take their revenge by slaying the pirates.—The captives declined cutting their enemies to pieces, saying "God is great, and will punish the wicked."

The Sultan then addressed himself to Pangeeran Moormein (the prime minister selected by Admiral Cochrane) and it was agreed that the Sultan and his minister should destroy the pirates between them. The Sultan set the example: one of the pirates was secured to a tree, and the Sultan hurled at him a spear which pierced the heart. This was a signal for the work of carnage. The followers of the Sultan and Pangeeran Moormein gave a shout

of triumph, rushed on the pirates, and with parangs, spears, and short swords cut the helpless wretches to pieces—the slayers rejoiced at shedding the blood of their enemies—most of the captives turned their heads from the scene. Such was the summary execution under the direction of our new ally, the Sultan of Borneo. In contradistinction to such ferocity of character as the slaughter evinced, the Sultan behaved kindly to the unfortunate captives, eight of whom were afterwards brought to Singapore.

The hospitable conduct of the Borneese is beyond all praise. Of the thirty captives alluded to above, nine were clothed and fed by Pangeeran Moormein, sixteen by Baba Binting, and five by Orang Rya da Gadong (rich *Godown-man* or merchant). Twenty-two captives still remained at Siantan (South Natunas) a chinese captive being sick and unable to work was sacrificed; the poor wretched man was tied up to the branch of a tree, and the pirates, with their swords, cut him to pieces, for the double purpose of ridding themselves of a burden, and, as they expressed it, to ascertain if their swords were sufficiently sharp for defence when attacked! The Sultan of Borneo is said to afford every encouragement to trade. He had ceased to demand presents, but levies in their stead a duty of one per cent. on every ton of cargo exported; an arrangement more satisfactory to the trade.—*Hants Telegraph*.

THE CHINESE JUNK ARRESTED FOR DEBT.—The Chinese junk Keying which arrived at New York on the 8th of July has excited the greatest curiosity. The Chinese sailors to the number of 26, not having been paid their wages, have arrested the vessel, and Mr. Lord, their advocate, has pleaded for them before the civil court of the district. The crew claim, in the first place, their arrears of wages from the month of September, 1846; and in the second, to be sent back to Canton at the expense of the captain. According to the sailors' account, they were only engaged for eight months, and were not to go beyond Batavia and Singapore. The advocate of So-Yin-Sang-Hi, the Chinese captain, replied that the sailors who had worked the ship could not pretend that they had been made to cross the Indian Sea and the Atlantic without their knowledge. With regard to the question of wages, the captain had promised to pay them, on their return to Canton, with the produce of the American goods which he was to take on his return. He added that he did not think that the sailors had any right to complain, the large recompenses they had received fully compensated for what was owing to them.

The Court decided in favour of the crew, maintained the seizure, ordered the sale of the vessel, and condemned the captain to pay each man 100 or 200 dollars, according to his rank.—*Globe*.

EGYPTIAN FRIGATE AT SPIEHEAD.—This very foreign looking craft attracts great attention at Portsmouth. She carries 20 guns, and has a complement of 200 men. Some of the crew have a curious notion of English trading. The boatmen who go off to the ship with strangers are asked the price of not only their jackets, but their trousers, and they might dispose of all they stand in, and swim on shore for a new rig. This passion for old clothes is also strongly displayed when any of the crew land, which has introduced on board the Egyptian a great variety of costume, civil, military, and naval. The officers and men are very courteous to strangers, and the latter occasionally offer them a dip into their bowls of pillau. In the matter of the honour due to the flags of princes, the Egyptians have been lately remiss. When Prince

Albert passed in the *Fire Queen*, on Monday, though his standard was flying, and they had an example set them by the English men-of-war, he was not saluted. Their interpreter was on shore at the time, which may probably account for this. The frigate has about 50 naval students on board, who land frequently at Portsmouth; most of them are fine-looking young men.—*Nautical Standard*, Oct. 2nd, 1847.

THE LATELY DISCOVERED VOLCANO "IN VICTORIA LAND" TOWARDS THE SOUTH POLE.—With a favourable breeze, and very clear weather, we stood in to the southward, close to some land which had been in sight since the preceding noon, and which we then called the "High Island"; it proved to be a mountain twelve thousand four hundred feet of elevation above the level of the sea, emitting flame and smoke in great profusion; at first the smoke appeared like snow drift, but as we drew nearer its true character became manifest. The discovery of an active volcano in so high a southern latitude cannot but be esteemed a circumstance of high geological importance and interest, and contribute to throw some further light on the physical construction of our globe. I named it "Mount Erebus," and an extinct volcano to the eastward, little inferior in height, being by measurement ten thousand nine hundred feet high, was called "Mount Terror." At 4h. P. M. of 23th January, Mount Erebus was observed to emit smoke and flame in unusual quantities, producing a most grand spectacle. A volume of dense smoke was projected at each successive jet, with great force, in a vertical column, to the height of between fifteen hundred and two thousand feet above the mouth of the crater, when condensing first at its upper part, it descended in mist or snow, and gradually dispersed, to be succeeded by another splendid exhibition of the same kind in about half an hour afterwards, although the intervals between the eruptions were by no means regular.

The diameter of the columns of smoke was between two and three hundred feet, as near as we could measure it; whenever the smoke cleared away, the bright red flame that filled the mouth of the crater was clearly perceptible; and some of the officers believed they could see streams of lava pouring down its sides until lost beneath the snow which descended from a few hundred feet below the crater, and projected its perpendicular icy cliff several miles into the ocean.—*Ross's Voyage of Discovery*.

PORT ELIZABETH.—*The Thunderbolt*.—The wreck of the *Thunderbolt* had been farther laid open by an explosion of 420lbs. of gunpowder, placed against her bows. The immense charge was enclosed in an iron barrel within a cask, and from it rose, as before, the pipe through which the lighted match or fusee was to drop upon the charge. The fusee was made of a composition somewhat different from that used on the former occasion, so as to burn more slowly, but through this greater caution on the part of the contriver, Mr. J. O. Smith, a very serious accident was nearly incurred. The match being several minutes in burning away its support, the men in the boat who had lighted it believed that it had gone out, and were again pulling towards the wreck, when Mr. Smith, who was able to observe through a telescope the blue smoke of the match, caused every signal to be made to the men in the boat, by which they were led again to pull off just in time, for scarcely had they withdrawn to a sufficient distance, when the explosion went off, raising an immense column of water of great diameter from 50 to 100 feet into the air, and strewing the whole beach opposite with fragments of wreck. One large beam was shot a long way into the sand, and the bow of the vessel

entirely rent asunder. On Friday another charge, of about 130lbs., placed against the stern of the vessel, was fired, and by the explosion, the after part of the vessel was blown out. Those who witnessed these explosions, describe the scene as well worth seeing; and we ourselves must confess that, in the success which has attended the attempts so perseveringly made by the owners to remove the wreck of the *Thunderbolt* from our "landing beach," we have been agreeably disappointed." We hope that no wrecks will any longer be permitted to obstruct the "landing."—*Nautical Standard*.

ARE THE PLANETS INHABITED.

Are the planets inhabited is a question which naturally presents itself to the human mind, and for a solution of which we as naturally look to the science of astronomy. But when the immense distance which separates us even from the nearest of the planets is remembered, it can scarcely be matter that the telescope affords no direct evidence on the question, whether the planets, like the earth are inhabited globes. Yet, though it gives no direct answer to this enquiry, modern astronomy has collected together a mass of facts, connected with the positions and motions, the physical character and conditions, and the parts played on the solar system by the several globes of which that system is composed, which forms a vast body of analogy, leading the intelligent mind to the conclusion that the planets are worlds, fulfilling in the economy of the universe the same functions, and created by the same hand, for the same moral purposes, and with the same destinies, as the earth.

Thus, for example, we find that these orbs, like our own, roll in regulated periods round the sun; that they have nights and days, and successions of seasons; that they are provided with atmospheres, supporting clouds, and agitated by winds; and that thus, also, their climates and seasons are modified by evaporation, and that showers refresh their surfaces. For we know that wherever the existence of clouds is made manifest, there water must exist; there evaporation goes on; there electricity, with its train of phenomena, must reign; there rains must fall; there hail and snow must descend. It is upon the planet Mars that the greatest advances have been made in this department of enquiry. Under favorable circumstances its disc is seen to be mapped out by a varied outline, some portion as being less reflective than land.

Baer and Maedler, two Prussian astronomers, have devoted many years labour to the examination of Mars, and the result has put us in the possession of a map of the geography of that planet, almost as exact and well-defined as that which we possess of our own; in fact, the geographical outlines of land and water have been made apparent upon it. But a still more extraordinary fact in relation to this planet remains to be considered.

Among the shaded markings which have been noted by the telescope upon its disc, a remarkable region of brilliant white light, standing out in boldest relief, has been observed surrounding the visible pole. This highly illuminated spot is to be seen most plainly when it emerges from the long night of the winter season; but when it has passed slowly beneath the heat of the solar beams, it is found to have gradually contracted its dimensions; and at last, before it has plunged into light on the opposite side, to have entirely disappeared. But the opposite pole, then coming into similar relations, is found to be furnished with a like luminous spot, which in its turn, dissolves as it

becomes located by the summer sun. Now these facts prove to us, incontrovertibly that the very geographical regions of Mars are fac-similes of our own. In the long polar winters the snows accumulate in the resolution of its high northern and southern latitudes, until they become visible to us in consequence of their reflective properties; and these are slowly melted as the sun's rays gather power in the advancing season, until they cease to be appreciable to terrestrial eyes. The fact is a most striking one in reference to the present question.—*Westminster and Foreign Quarterly.*

THE MERCHANT SEAMEN'S ACT.

Numerous convictions against deserters from merchant ships have been obtained at the Mansion-house of late, through the agency of the Register-office assisting shipowners in preferring their complaint; and the Lord Mayor or the sitting Alderman invariably inflicts the punishment of imprisonment and hard labour when the case is satisfactorily made out. Were the shipowners to avail themselves more generally of the provisions of the Merchant Seamen's Act, and the facilities afforded them, a check would be put to a practice so injurious to the character of the British seamen.

The Legislative Assembly of Canada having adopted the Seamen's Protection Act, for the purpose of putting a check to the desertions at Quebec, where seamen are instigated to this offence by crimps, and gain nothing by the high wages demanded for the home voyage, the Lords of the Admiralty have directed that they shall be duly cautioned of the new regulation, in order to prevent their falling into the hands of designing persons, who alone profit by this demoralising system. The following notice has in consequence been exhibited at all the sea-ports of the United Kingdom:—

“ Important to Seamen.—Desertions at Quebec.

“ In consequence of the inconvenience to which shipowners are subjected by the desertion of seamen at Quebec, and the extortionate wages demanded for the return voyage to the United Kingdom, the Legislative Assembly of Canada have passed an act adopting the provisions of the 8th and 9th Victoria, cap. 116, the act for the protection of seamen from crimps. The law comes into operation on the 1st of January, 1848. From and after that date no seamen shall be shipped at Quebec, or the ports on the St. Lawrence, except by the owner, master, or ship's husband, or the licensed shipping master, appointed for that purpose. Every seaman will be required to produce his register ticket and discharge from his last ship, or satisfactorily account for not producing them; and deserters will incur the punishment of imprisonment and hard labour. Under these regulations, which will be adopted in all the colonies, the breach of articles, so disgraceful to seamen, will be obviated, and a check put to the extortions now practised upon them by the crimps at Quebec and other ports.

“ The Lords of the Admiralty have deemed it necessary to make these regulations public, in order that seamen may not plead ignorance of the law, should they violate their agreements, and thereby incur punishment which will henceforth certainly be inflicted upon deserters.

“ J. H. BROWN, Register General of Seamen.

“ *Custom-house, London, Oct. 21.*

A recommendation having emanated from the (late) Surveyor of the Navy's office, urging that as great deterioration attends new ships from the influence of tropical climates, and submitting that as far as possible all new ships should remain in ordinary for a certain period before commissioned, viz:—Sloops two years; frigates and ships of the line, three to four years; and that no sloop should be launched until her frame and planking have been seasoned at least two years, and frigates and ships of the line from three to four years; and further that all small vessels should be planked with teak or mahogany, provided it can be procured on reasonable terms compared with English oak, by which means vessels would be more eligible for service in the tropics, and a great saving in the expense of repairs would be effected; the Lords of the Admiralty have adopted such suggestion, and issued an order to the heads of all the dockyards to observe and carry into effect its provisions.

UNKNOWN ROCK.—The agent to Lloyd's at St. George's Grenada, in reference to the loss of the Guave on Carmorian reef, states that they have examined and compared several charts of the island, but do not find such a reef described in any of them: they represent the reef to be very extensive, it having considerably increased in size for the last few years, spreading nearly three miles to leeward of the Sail rock. They recommend, as the current there is very powerful, that all vessels pass to windward of Sail rock when making the Kekenjenny Passage for this port.

BRITISH NAVY IN COMMISSION, OCT. 1.

	Line of bat. ships.	Frigates.	Steam Frigates.	Sloops.	Steam Sloops.	Sailing packets, and smaller vessels.	Sml. stms. & pac.	Store ships and stationary.
At Home and fitting	3	2	2	5	3	12	35	8
Mediterranean	5	3	1	3	3	0	7	1
East Indies	0	7	1	8	2	1	0	2
Brazil and Pacific	1	6	2	5	2	3	2	3
North America and West Indies	0	4	0	4	1	2	2	1
Cape and Coast of Africa	0	5	1	21	4	1	2	2
Particular service	6	2	5	1	5	0	5	4
Discovery ships	0	0	0	2	0	0	0	0
Troop ships	1	3	0	0	0	0	0	0
Surveying	0	3	0	2	0	2	7	0
Yachts	0	0	1	1	0	0	2	0
Lakes	0	0	3	0	1	0	2	0
Totals	16	35	13	52	21	21	64	21—243

Being a total of 243 Ships in Commission, including 98 Steamers of all sizes, with a power of 22,122 horses.

EXAMINATION OF MASTERS AND MATES.
Continued from page 558.

Name of Party who has received the Certificate	Class of Certificate	Age	Present or last previous Service	Register Ticket	Where Exam.	When.
Holland, B.	1st	36	Medway, 1800 tons (as third mate)	259883	Liverpool	22 May, 1847
Holmes, W.	2nd	...	Catherine Greene, ... 350 tons (as mate)	1302	London	6 Aug. 1846
Holt, W. H. P.	3rd	26	Jim Crow, 117 tons (as mate)	40992	Gt. Yarmth	20 Nov. —
Hooper, Wm.	3rd	26	Jane Shirrifs, 240 tons	.....	S. Shields	19 Nov. —
Hooper, Wm.	2nd	28	Jane Shirrifs, 240 tons	.....	S. Shields	14 Feb. 1847
Horner, W. H.	1st	24	Delhi, 357 tons .....	.....	Liverpool	20 Feb. —
Hoskin, Rob.	2nd	...	Robert, 274 tons ... (as Mate)	2749	London	24 Sept. 1846
Hoyte, W. S.	2nd	...	Queen, 1307 tons ... (as apprentice)	33849	London	8 Oct. —
Hudson, Henry	2nd	39	Kelso, 456 tons .....	.....	London	17 Mar. 1847
Huggitt, John	3rd	34	William, 186 tons .....	.....	S. Shields	1 April —
Hunter, B. Geo.	1st	...	Hindustan, 544 tons (as mate)	327543	London	9 Mar. —
Hurrell, Sam.	2nd	33	Fred. Young, 260 tons (as mate)	.....	S. Shields	19 Feb. —
Hurrell, Wm.	2nd	...	.....	101889	S. Shields	24 Feb. —
Hutchinson, G.	2nd	41	Urania, 279 tons .....	.....	S. Shields	1 Apr. 1847
Hyde, George	2nd	28	Bombay, 1400 tons (as mate)	.....	London	13 Feb. 1846
Iago, Walter	3rd	30	Dahlia, 580 tons ... (as mate)	.....	Plymouth	13 Feb. —
Inglis, Hugh	1st	32	Alexander, 392 tons	244010	Dundee	24 Feb. 1847
Ingram, T.	2nd	29	Vigilant, 226 tons... (as mate)	.....	S. Shields	30 Jan. —
Irvine, Charles	2nd	25	Isle of Wight, 212... tons (as mate)	.....	London	3 Nov. 1846
Jameson, Peter,	2nd	32	John's 254 tons..... (as mate)	.....	S. Shields	7 Jan. 1847
Jasper, Wm.	2nd	29	Endymion, 42 guns AB	.....	Plymouth	7 May —
Jeffery, G. S.	1st	...	.....	.....	London	8 Dec. 1845
Jellicoe, J. H.	2no	22	Clyde, 1159 tons (as second officer)	.....	Portsmouth	12 Feb. 1847
Johnson, J. W.	2nd	28	Corsair, 250 tons ... (as mate)	54978	London	9 June, 1846
Johnson, W. S.	2nd	29	Woosington, 287	329004	London	17 June, 1846
Johnson, Wm.	2nd	...	Courier, 289 tons... (as mate)	.....	.....	.....
Johnson, John	3rd	28	Sylph, 172 tons	176533	S. Shields	13 April 1847
Johnson, John	2nd	28	Sylph, 172 tons .....	.....	S. Shields	3 May, 1847
Johnson, W. S.	1st	30	Oriental Queen, 645 tons (as mate)	346856	London	8 June 1847
Jones, John	2nd	...	.....	.....	London	8 Dec. 1845
Joy, Robert	1st	26	Acadia, 1200 tons...	.....	Liverpool	1 Feb. 1847
Judkins, C.H.E.	extr 1st extr	35	Cambria, Steamer,	.....	Liverpool	17 Nov. 1846

Kelly Jas. Josp.	1st	22	Castilian Maid 120 tons (<i>as mate</i>)	204351	Liverpool	19 May, 1847
Kindhaugh, T.	2nd	40	Catherine Ann, 219 tons (<i>as mate</i>)	.....	S. Shields	15 Jan. —
Kirkup, Joseph	3rd	.....	.....	.....	Newcastle	16 Jan. 1846
Lane, John W.	1st	.....	Isabella Blyth 443 tons	327500	London	27 Feb. —
Lawlan, Alex.	2nd	25	Agenorina, 268 tons	.....	S. Shields	31 Mar. —
Lawson, Mich.	2nd	25	Aid, 264 tons (<i>as mate</i>)	.....	S. Shields	22 Dec. —
Le Quesne Php.	2nd	...	Courier, 273 tons	327598	London	16 Mar. —
Leary, John	1st	27	Queen, 650 tons	.....	Liverpool	13 Feb. 1847
Leeds, Richard	3rd	32	Perseverance, 270 tons (<i>as mate</i>)	184605	S. Shields	28 Oct. 1846
Leitch, John	1st	30	Deogaum, 520 tons	.....	Liverpool	29 May, 1847
Little, George	1st	30	Britannia, 1400 tons (<i>as second mate</i>)	276438	Liverpool	9 Jan. —
Loader, William	2nd	49	Sir Robert Sale, 741 tons	.....	London	4 June, —
Lott, Edw. Geo.	1st	18	Caledonia, 1200 tons	.....	Liverpool	12 Jan. —
Koutit, S. T.	2nd	23	Plantagenet, 806 tons (<i>as mate</i>)	10255	London	30 April, —
Lucas, George	2nd	...	Zenobia, 150 tons	.....	Plymouth	6 Mar. 1846
M'Beath, Sutherland	2nd	45	Southampton, 1000 tons (<i>as mate</i>)	31013	London	22 May, 1847
M'Clelland, Alexander	1st	30	Sisters, 150 tons (<i>as mate</i>)	111032	Liverpool	25 May, —
M'Lean, Murdock	3rd	31	Lady Clark, 450 tons (<i>as mate</i>)	327806	London	17 Feb. —
M'Leod, W. L.	1st	.....	.....	.....	London	1 Dec. 1845
M'Pherson, G.	1st	.....	.....	.....	London	12 Dec. —
Macdonald, C.	2nd	23	David Grant, 197 tons	32658	Dundee	9 Jan. 1846
Maclean, Alex.	2nd	33	Ramilies, 740 tons	.....	London	19 Mar. 1847
Machan, John	1st	27	Britannia, 379 tons	76571	Dundee	13 Mar. 1846
Malone, Francis	2nd	30	Eclipse, 540 tons (<i>as mate</i>)	11889	London	29 May, 1847
March, E. Geo.	2nd	29	Viscount Sandon, 540 tons (<i>as mate</i>)	257348	London	4 June, 1847
Perry,	.....	.....	.....	.....	London	.....
Marsh, F. J.	2nd	...	Lady Mary Wood, 650 tons (<i>as mate</i>)	207730	London	17 Sept. 1846
Marshall, A. Y.	1st	25	Lerwick 283 tons	.....	Liverpool	7 May, 1847
Martin, Patrick	3rd	28	.....	18897	S. Shields	2 April, 1846
Melville, John	3rd	25	Mary, 390 tons (<i>as temporary master</i>)	31871	Plymouth	29 Jan. 1847
Miles, Harry	1st	25	Broom, 976 tons (<i>as mate</i>)	17729	London	10 Dec. 1846
Millar, Joseph	2nd	...	Napolcon, 233 tons	345940	London	29 Sept. —
Millward, G.	2nd	28	Malta, 240 tons	.....	S. Shields	15 Oct. —
Morgan, James	2nd	25	Prince Albert, 301 tons (<i>as mate</i>)	16984	London	13 Feb. —
Moss, F. E.	1st	31	Conway, 587 tons	.....	Portsmouth	9 April, 1847
Mowatt, J. D.	2nd	...	Walker, 353 tons (<i>as mate</i>)	14845	London	8 Oct. 1846

Mowatt, John	2nd	33	Sarah Barry, 269 tons (as mate)	.....	S. Shields	10 Feb. 1847
Munro, D. G.	2nd	...	No you don't 36 tons	327477	London	27 Feb. 1846
Napier, Josiah	1st	...	.....	.....	London	25 Nov. 1845
Narracott, N.K.	2nd	34	Eweretta, 356 tons (as mate)	32626	London	28 Oct. 1846
Natt, Fredrick	2nd	27	Eleanor, 268 tons (as mate)	.....	S. Shields	26 Feb. 1847
Newton, B.	2nd	...	.....	.....	Newcastle	15 Feb. —
Nicholson, John	3rd	39	Star, 211 tons	.....	S. Shields	15 Oct. 1846
Nickels, G.	3rd	31	St. Lawrence, 236 tons (as mate)	.....	S. Shields	20 Feb. 1847
Niven, C. A.	2nd	...	Sylph, 491 tons (as mate)	27175	London	9 July, 1846
Onslow, C. H.	1st	27	Twced, 860 tons (as second officer)	351984	Portsmouth	7 June, 1847
Ord, Robert	1st	37	Alert, 232 tons	.....	Liverpool	25 May, —
Osborne, James	1st	28	Boync, 620 tons (as mate)	326089	London	18 May, —
Osman, John	2nd	...	Diadem, 184 tons	.....	London	5 Oct. 1846
Paddle, Isaac	1st	29	Isabella Blyth, 443 tons	18675	London	1 Feb. 1847
Palmer, N. II.	1st	26	Gloriana, 1056 tons (as mate)	26348	London	13 Feb. 1846
Parsons, James	1st	31	Bangalore, 511 tons	324561	London	22 Mar. 1847
Paterson, John	1st	...	.....	.....	London	24 Nov. 1845
Paton, W. junr.	1st	22	.....	.....	Leith	25 Mar. 1847
extr	...	...	.....	.....	.....	.....
Pattullo, J. F.	1st	...	Esker	.....	Dundee	30 Dec. 1845
Peacock, Geo.	3rd	37	Rosella, 213 tons (as mate)	.....	S. Shields	23 Mar. 1847
Peech, Samuel	2nd	35	Juverna, 311 tons (as mate)	21486	London	29 April 1846
Penny, John	2nd	29	Horatia, 280 tons	.....	S. Shields	26 Mar. 1847
Peterkin, James	2nd	26	Tagus, 265 tons	.....	S. Shields	16 April —
Pigott, W.	1st	...	.....	.....	London	14 Nov. 1845
Pixley, T. W.	1st	...	.....	.....	London	10 Nov —
Plant, John	3rd	39	Mariner, 600 tons (as mate)	33942	London	13 May, 1847
Pletts, William	2nd	32	.....	.....	Newcastle	4 May —
Plunton, John	2nd	23	Rowena, 259 tons (as chief mate)	95372	S. Shields	17 Dec. 1846
Pollard, Wm.	2nd	31	Thalia, 286 tons	.....	S. Shields	16 April 1847
Prettejohn N.	2nd	26	Teviot, 1121 tons (as mate)	252886	London	9 April —
Probert, W. R.	1st	...	.....	.....	London	24 Nov. 1845
Putt, C. Hunt	2nd	25	Lady Lilford, 596 tons (as mate)	27404	Plymouth	30 April 1847
Ratsey, Rob. H	1st	...	Isle of Wight, 212 tons	327937	London	20 Mar. 1846
Reid, William	1st	23	.....	.....	Leith	4 Nov. —
Revett, Richard	1st	32	Trent, 1600 tons	.....	Yarmouth	30 Mar. 1847
Ridley, Thomas	3rd	43	.....	4380	S. Shields	7 Mar. 1846
Richards, IL	2nd	...	Briton, 240 tons (as mate)	14974	London	20 Mar. —
Richardson, G.	1st	30	Trafalgar, 608 tons	.....	London	24 Feb. —

(To be Continued.)

TABLE SHEWING THE HOURLY VELOCITY OF THE WIND IN MILES
 As determined by the Rev. W. Foster's Anemometer, Stubbington, near Fareham,
 Hunts.—October, 1847.

Day of Month.	A. M.												P. M.												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
1	ANA					5	10	12																	
2																									
3											12	20	20	27	35	30	20	15	15	12	17	17	15	15	
4								10	10	10	10	10	10	10	10										
5						ASA																			
6																									
7											10	15	15	17	15	15	17	12	20	20	12	10	10	10	
8	10	10	10	10													AN								
9												12	15	12	12	12	12	10	11	10	10				
10																									
11			N									3	3	3	3	3	3								
12	10	12	12	12	17	17	17	17	17	20	20	22	22	22	22	17	17	17	12	15	12	12	12	12	
13	10	10	10	10	10	12	12	12	15	15	15	12	11	11	10	5						10	12	10	
14	10						10	17	10				17	12	10	10	15	20	20	25	27	27	30	30	
15	32	35	32	37	37	32	27	17																	
16									27	37	40	35	37	37	30	40	40	35	37	35	35	32	25	22	22
17	25	17	20	20	20	22	20	27	22	25	22	20	32	40	40	32	42	35	17	20	15	12	20	25	
18	22	17	20	17	15	20	15	15	15	15	15	15	15	15	15	16	15	17	15	15	16	17	15	15	
19	15	15	15	16	17	15	14	15	15	14	14	14	14	14	20	17	20	20	22	22	22	20	30	37	40
20	35	35	35	20	27	25	25	25	20	14	14	14	14	12	12	12	10	12							
21												10	10	12	15	12	15	20	22	17	17	15	20	20	20
22	22	20	22	15	12	10	10	10	22	22	15	15	17	17	17	17	12	4	4						
23						10	10	12	10	10	10	10	10	10	12	15	10	10							
24																									
25									10	12	18	20	22	17	12	17	15	10	10	10	10	10	10	10	10
26									5	5	5	5													
27																									
28								10	10	10	10	12	12	12	12	14	10	10		12	10				
29								10	17	20	20	17	17	20	17	15	10	5							
30								10	10	12	10	10	10	10	10	10									

TABLE SHEWING THE AMOUNT OF RAIN IN INCHES—OCT., 1847.

A.M.	1	2	3	4	5	6	7	8	9	10	11	12
8	·0086	·0086	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	·0086	·0086
17	.	.	.	.	.	.	.	·0172	·0172	·0172	·0344	·0258
Total	·0086	·0086	.	.	.	.	.	·0172	·0172	·0172	·0430	·0344
P.M.												
6	.	.	·0258	·0344	·0086	.	.	.	.	.	.	.
7	.	.	.	.	·0258	·0172	·0344	·0602	·0172	·0026	.	.
12	·0086	.	.	.	.	.	·0358	·0258	·0258	·0258	·0258	.
15	.	.	.	.	.	.	.	.	·0774	·0172	·0086	·0172
19	.	.	.	.	.	.	·0430	·0516	·0774	·0258	·0086	·0430
Total	·0086	.	·0258	·0344	·0344	·0172	·1032	·1376	·1978	·0774	·0430	·0602

TABLE SHEWING THE AMOUNT OF WIND IN MILES, AND OF RAIN IN INCHES FROM EACH POINT OF THE COMPASS—OCT., 1847.

Miles	N	NNE	NEENE	E	EESE	SE	SESE	S	SSW	SW	WSW	W	WNW	NW	NNW
	67	.	.	646	.	.	.	.	.	.	1831	2489	387	116	.
No. of hours	66	.	.	54	.	.	.	.	.	.	112	110	29	10	.
Velo. pr hr.	6	.	.	12	.	.	.	.	.	.	16	22	13	11	.
Amt. Rain,	.	.	.	.	.	.	.	.	.	.	·654	·234	.	.	.

Considering from 6 A.M. to 6 P.M. *day*, and from 6 P.M. to 6 A.M. *night*, we have 2440 miles the amount of wind during the *day*, and 221 during the *night*. 250 inches the amount of rain during the *day*, and 637 during the *night*. Total wind 4652 miles, rain 8871 inches. The greatest amount of rain was from S.S.W.

The number of hours during which the rain fell was 34; and the number of hours during which the amount of wind is recorded is 526, during 194 hours it was calm.

NEW BOOK.

THE SEAMAN'S VOCABULARY; OR, POLYGLOSSARIUM NAUTICUM.—By C. H. Müller, Hanoverian Colonel, h.p.—H. G. Voight, Hamburg.

It need scarcely be stated that a work of this description must be of inestimable value to seamen.

The object of Col. Müller has been to explain in ten different languages the technical names of every part of a ship from being laid down in the building yard to her canvass and standing and running rigging, accompanied with steel engravings explanatory of the various portions of a ship, to a complete rig. Such a work may be, in many instances, necessary in foreign countries to prevent misunderstandings, of more or less consequence. An alphabetical index in Danish, German, English, Spanish, French, Dutch, Italian, Portu-

guese, Russian, and Swedish is judiciously arranged as a ready reference to the plates and phrases.

We can well imagine the numerous difficulties that presented in the translation into the different languages, which Colonel Müller has apparently in a great measure overcome as he states, "by practical and scientific considerations;" and, as a work of the most useful kind in that branch of science, it is intended to illustrate, it reflects the highest praise on the labour and pains he has bestowed on it. The volume concludes with three plates exhibiting the the flags of all nations.

BATTLE OF TRAFALGAR.

The anniversary of this glorious event was celebrated on Thursday, the 21st, when the "deathless name of Nelson" was pledged in solemn silence at the festive boards of those who are survivors of that immortal day, when "every man did (as was expected of him) his duty" for the country to which he owed allegiance, the home "by memory hallowed," and the "beauty" which adorned both his country and his home. The commemoration was celebrated at several of the Naval Houses in the metropolis and its vicinity, and the members of the Royal Naval Club of 1765 dined together at the Piazza Hotel, Covent Garden. About 40 officers sat down, Adm. Daly presiding, but nothing worthy of note occurred. We might except a song very well sung by that gallant octogenarian Sir John Ross. Although forty-two years have elapsed since the battle, there are still a number of Trafalgar heroes alive, and who are "distinguished by the letter T" opposite their names in the *Navy List*; but only two who commanded ships in that action, viz., Adm. Sir Edward Codrington, G.C.B., G.C.M.G., of the *Orion*, and Adm. the Hon. Sir T. Bladen Capel, K.C.B., who commanded the *Phaëbe*. Rear-Admiral Pasco is the only other Flag Officer on the list who was in the action, and his existence is the more congratulatory among the gallant survivors, inasmuch as he is the one who not only gave the ever-memorable signal to every man in the Fleet on that glorious occasion, but who in some respects may be considered to have some credit for suggesting the identical words in which the immortal Nelson conveyed his sentiments to his devoted supporters.—*Naval and Military Gazette*.

IMPORTANT COMMUNICATION.

21, Poultry, 26th Oct. 1847.

DEAR SIR,—I consider the following letter of sufficient importance to demand immediate insertion, and therefore hand it to you without loss of time, in the hope that you will make room for it if possible,

I am, &c.

To the Editor of the *Nautical Magazine*.

R. B. BATE.

*Barque "John Hutchinson," Dardanelles,
Sept. 24th, 1847.*

SIR,—I beg respectfully to call your attention to the omission (upon the Admiralty plan of Asia Minor, including the Island of Tenedos, and the entrance of the Dardanelles, 1840), of a long spit with two fathoms water upon it, extending from the low sandy shore about a mile to the westward of Kefis Point. I observe that it is correctly laid down on the Admiralty plan of the Dardanelles, Sea of Marmora, and Bosphorus; I was sorry to observe this omission upon so excellent a chart, the *extreme accuracy* of which I have had several opportunities of proving, and trust that it will be rectified in a future edition, and strangers put upon their guard against its omission upon the present.

I am, &c.

(Signed) RD. LEIGHTON.

R. B. BATE, Esq., 21, Poultry, London.

P.S.—There is now the wreck of a Brig or Polacre lying upon it.

PROMOTIONS AND APPOINTMENTS.

The following Commanders have been promoted to the rank of Captain by the Earl of Auckland, the vacancies having occurred by deaths:—

W. L. Sheringham (1841), who has for many years been employed in command of *Fearless* and *Dasher* in surveying the Solent.—C. B. Hamilton (1844), who was Lieutenant of *Melville* at the taking of Bocca Tigris and operations on the coast of China, and who paid off *Frolic* lately from South America, in a manner which reflected so much credit on the royal service.—A. B. Warre (1846), late Mate of *Hibernia*, 104, flag ship in the Mediterranean; has been promoted to the rank of Lieutenant.

The following Commanders have been promoted to the rank of Captain by the Board of Admiralty, for services during the late famine in Ireland:—

T. Fisher (1841), now in command of *Stromboli*.—J. C. Caffin (1842), now in command of *Scourge*.

The following Lieutenants, who have commanded steam vessels in distributing provisions on the coasts of Ireland and Scotland, have been promoted by the Board of Admiralty.—

C. R. Johnston (1840), now in command of *Fire Queen*.—J. T. W. French (1837), who has commanded *Dasher* in her arduous service in distributing supplies on the coast of Ireland.—D. A. Buchan (1841), who was First-Lieutenant of *Firefly*, with Capt. Beechey, surveying in the Irish Channel, and recently commanded her in distributing provisions on the coast of Scotland.—F. Lawe (1387), who commanded *Plato* in conveying and distributing provisions on the coast of Ireland.

PROMOTIONS.

COMMANDERS—W. P. Crozier, T. Miller, G. L. Young, W. Need, and Hon. W. S. Spencer.

LIEUTENANTS—F. Moresby, P. Chase, R. B. Oldfield, G. T. Colville, F. L. Cotton, R. G. Tufnell, and H. Harvey.

SURGEON—G. King.

APPOINTMENTS.

CAPTAIN—R. A. Yates to *Victory*, vice Pasco promoted to the rank of Rear Admiral.

COMMANDERS—H. E. Wingrove to *Scourge*—R. A. Oliver to *Tweed*—W. F. Fead to *Howe*, vice Loring—W. Carr and G. Randolph to study at the Steam Factory, at Woolwich—D. Robertson and T. H. Christian to study at the Naval College.

LIEUTENANT COMMANDER—W. Greet to *Perseus*.

LIEUTENANTS.—R. H. H. Mends to *Fly*—G. T. C. S. Nith to *Blazer*—Sir G. Webster, bart. to *Tartarus*—W. C. Nowell to *Ardent*—G. S. Boys to *Hibernia*—R. Purvis to *Penelope*—O. J. Jones to be flag Lieut. to Rear-Adm. Shirreff—Hon. T. F. Pellew, H. J. Grant, M. Connolly, and W. C. Marshall to *Howe*—R. M. Sandom to study at the Steam Factory, at Woolwich—S. Fowel to

Gladiator, vice Crawley, superseded at his own request—R. L. Curtis to command *Bulldog*—H. M. Baker and W. T. Bate to study at the Naval College.

MATE—G. Stratton to *Victory*.

CHAPLAIN—J. C. Conally to *Fisgard*, SURGEON—A. Slight to *Fly*.

MASTERS—R. Wood to *Dove*—J. Chambers, acting, to *Amphion*—C. Cleveland to Coast Guard Service.

PAYMASTER AND PURSER—T. M. J. Tilby to *Fisgard*.

CLEKKS—W. F. Jones to *Howe*—C. Fisher to *Bellerophon*—J. Doyle to *Arab*.

SECOND-MASTERS—C. M. Hughes to *Bellerophon*—F. Shead to *Tartarus*.

MIDSHIPMEN—A. R. Owen to *Victory*—C. E. Sidebottom to *Recruit*—J. K. Sincoe to *Excellent*—S. S. Bowden to *Asia*—M. Smallpage to *Penelope*—S. J. Coventry to *Excellent*—E. Buck and F. Harvey to *Bellerophon*.

NAVAL CADETS—J. Nolan to *Fly*—J. P. Gardiner, J. G. G. McHardy, A. L. Overbury, and F. S. Thompson, to *Bellerophon*—C. L. Pearson to *Hecate*—A. O. Webbe to *Cambrian*—E. M. Hankison to *Arab*.

MASTERS' ASSISTANTS—T. Potter, acting Second Master, to *Amphion*—C. B. McDermott to *Dolphin*—J. G. Trewin to *Kite*—G. E. V. Maitland to *Arab*—H. B. Akaster to *San Josef*—V. T. Johnson to *Antelope*.

MARRIAGES AND DEATHS.

Marriages.

On the 21st Oct., at Bath, the Rev. E. H. Carr, M.A., to Eleanor Henrietta, third daughter of Capt. W. F. Carroll, C.B., R.N.

On the 20th Oct., Capt. Sir T. R. T. Thompson, Bart., R.N., to Gertrude, youngest daughter of the Rev. R. N. Raikes, Vicar of Long Hope, Gloucestershire.

On the 28th Sept., at Sible Hedingham, Essex, the Rev. H. C. Seller, B.A., of St. John's College, Cambridge, to Mary Elizabeth, daughter of the late Rear-Admiral Fowke.

Death.

On the 16th Oct., at Killeshandra, A. Dognohoe, esq., Surgeon, R.N.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory from the 21st of September, to the 20th of October, 1847.

Month Day.	Week Day	Barometer In Inches and Decimals.		Fahrenheit Thermometer In the Shade.				Wind.				Weather.		
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	Quarter.		Strength.		A.M.	P.M.	
								A.M.	P.M.	A.M.	P.M.			
		In Dec	In Dec											
21	Tu.	30.14	30.11	43	55	42	56	W	W	2	2	bcmr 2		
22	W.	30.06	30.09	60	67	43	68	W	W	4	3	bc		or 3 4
23	Th.	30.02	29.98	63	64	48	65	W	W	2	2	bc		o
24	F.	30.18	30.16	57	59	53	60	NW	NW	2	2	bcm		bc
25	S.	30.09	29.96	53	63	45	64	SW	SW	4	2	bc		bc
26	Su.	30.19	30.19	56	58	45	59	N	N	3	2	bc		b
27	M.	30.28	30.29	50	57	39	58	NE	NE	2	3	b		b
28	Tu.	30.32	30.30	47	56	35	57	NE	NE	2	2	bc		o
29	W.	30.38	30.36	53	58	43	60	NE	NE	2	3	bc		bc
30	Th.	30.28	30.20	53	58	49	59	NE	NE	2	3	bc		bc
1	F.	30.08	30.06	54	62	50	64	NE	NE	3	3	o		o
2	S.	30.08	30.11	55	57	53	59	NE	NE	4	4	o		o
3	Su.	30.20	30.18	53	61	47	60	NE	NE	2	1	bc		o
4	M.	30.07	30.00	55	57	49	57	E	E	1	1	o		bc
5	Tu.	29.77	29.69	51	57	46	58	NE	NE	1	1	o		o
6	W.	29.65	29.61	46	58	39	60	NE	SE	1	4	bc		belp 4
7	Th.	29.51	29.50	59	61	52	64	SE	W	3	3	bcp 2		bcp 3 4
8	F.	29.81	29.85	51	58	43	59	SW	SW	2	2	bc		or 2
9	S.	29.95	29.93	55	59	51	61	SW	SW	1	2	or 2		o
10	Su.	29.87	29.89	57	60	53	61	S	S	2	2	or 2		bc
11	M.	29.86	29.86	56	63	51	64	SE	SE	1	2	op 2		bc
12	Tu.	29.88	29.85	56	66	49	67	SE	NE	2	2	bc		bc
13	W.	29.91	29.92	55	62	53	63	NE	NE	3	3	o		bc
14	Th.	29.88	29.80	51	54	50	55	NE	NE	2	4	od 2		bc
15	F.	29.74	29.80	51	54	49	55	E	E	4	2	o		o
16	S.	29.98	30.00	49	60	45	61	NE	NE	2	2	of		bc
17	Su.	30.02	30.00	54	60	52	61	NE	NE	2	2	of		bef
18	M.	29.72	29.68	55	61	50	62	SW	SW	1	3	o		bcp 3 4
19	Tu.	29.50	29.42	57	63	50	64	S	S	3	2	bc		bc
20	W.	29.73	29.81	47	55	45	57	W	SW	3	3	bcp		bc

September, 1847.—Mean height of the Barometer=29.970 inches; Mean temperature=53 degrees; depth of rain fallen = 1.77inch.

NOTICE TO OUR CORRESPONDENTS.

We are compelled to postpone MR. J. BURNETT's communication until our next.

We shall reserve the additional "List of Masters and Mates" until we have completed the Alphabetical List now on hand.

Hunt, Printer, 3, New Church Street, Edgware Road.

THE
NAUTICAL MAGAZINE

AND

Naval Chronicle.

DECEMBER, 1847.

**SUCCESSFUL RESULT OF THE HUDSON'S BAY COMPANY'S ARCTIC
EXPEDITION.**

IN July, 1846, the Hudson's Bay Company despatched an expedition of thirteen persons from Fort Churchill in Hudson's Bay, under the command of Dr. John Rae, for the purpose of surveying the unexplored portion of the Arctic Coast at the north-eastern angle of the American continent. This expedition has now returned, after having traced the coast all the way from Lord Mayor's Bay of Sir John Ross to within a few miles of the Strait of the Fury and Hecla—thus proving Sir John Ross to have been correct in stating Boothia Felix to be a peninsula. The details will be found in the following abstract of a report received by the Hudson's Bay Company; and we feel assured that the narrative will be found too interesting to require any apology to our readers for having encroached thus largely on our pages.

To the Governor, Deputy-Governor, and Committee of the Hon. Hudson's Bay Company.

“ Hon. Sirs,—I have the honor to inform you that the expedition under my charge, which left Churchill on the 5th of July, 1846, for the purpose of tracing the coast of America, between Dease and Simpson's furthest, and the Strait of the Fury and Hecla, returned in safety to this place on the 6th inst., after having, by travelling over the ice and snow in the spring, surveyed the coast from the Lord Mayor's Bay of Sir

NO. 12.—VOL. XVI. 4 K

John Ross to within eight or ten miles of the Fury and Hecla Strait; thus proving that eminent navigator was correct in stating Boothia Felix to be a portion of the American continent.

"After leaving Churchill the crews of the boats were divided into watches, so that we continued under sail day and night, whenever the weather was sufficiently moderate.

"On the 15th, when about ten miles to the north of Cape Fullerton, we first met with ice, which was so heavy and closely packed that it was at last found necessary to seek shelter in a deep and narrow inlet that opportunely presented itself. We were detained here two days, during which I found that our harbour formed the estuary of a considerable stream, on the beach near the mouth of which a great number of seals were lying. The latitude, $64^{\circ} 6' 45''$ N., was observed; variation of the compass, $22^{\circ} 10'$ W.

"We reached the most southerly opening of Wager River on the 22nd, and were detained all day by immense quantities of heavy ice driving in with the flood, and out again with the ebb tide, which ran at the rate of seven or eight miles an hour, forcing up the ice and grinding it against the rocks, causing a noise resembling thunder.

"On the 23rd we made the traverse from the south to the north side of the entrance of Wager River with some difficulty, and holding on our course towards Repulse Bay, about 7 P.M. on the 24th, we rounded Cape Hope, and sailed up during the night to within eight miles of the head of the bay, where we cast anchor for a few hours, under shelter of a small island near its south shore.

"At 3 P.M., on the 25th, we entered Gibson's Cove, on the banks of which I was rejoiced to observe three Esquimaux tents, and four of the natives standing on the shore. They appeared much alarmed at our approach; but their fears were soon dispelled on my landing with the interpreter, and explaining our friendly intentions towards them. None of the party had ever visited Churchill, but one or two of the women had seen Capt. Parry's ships both at Igloo-lik and Winter Island, and they still wore beads round their wrists which they had obtained from on board those vessels. They had neither heard nor seen anything of Sir John Franklin.

"From a chart drawn by one of the party, I inferred that the Arctic Sea (named Akkoolee) to the west of Melville peninsula, was not more than forty miles distant, in a N.N.W. direction, and that about thirty-five miles of the distance was occupied by deep lakes; so that we would have only five miles of land to drag our boat over; a mode of proceeding which I had decided upon, even had the distance been much greater, in preference to going round by the Fury and Hecla Strait.

"Having unloaded the boats, and placed one of them with the greater part of the cargo in security, the other was hauled three miles up a rapid and narrow river, which flowed from one of the lakes we were to pass through. This work occupied us the whole of the 26th, as the current was very strong, and the channel so full of large boulder stones

that the men were frequently up to the waist in ice-cold water whilst lifting or launching the boat over these impediments.

“Our landing-place was found to be in latitude $66^{\circ} 32' 1''$ N. The rate of the chronometer had become so irregular that it could not be depended upon for finding the longitude. During the winter it stopped altogether.

“On the 27th, leaving one man in charge of our stores, &c., which were placed *en cacho* on the rocks and covered with oil cloths; the rest of the party assisted by three Esquimaux, carried what baggage and provisions were necessary to the boat. The distance from this part of the river to where it issues from the lake being only a mile and a half, and the current being less rapid, we soon reached the lake, which was six miles long, and varied from half a mile to 200 yards in breadth, its depth being in some places upwards of 30 fathoms.

“After traversing several lakes, and crossing over six ‘portages,’ on the 1st of August we entered a shallow stream flowing to the northward. Following this we arrived at the sea at 5h. P.M., in lat. $67^{\circ} 13' 00''$ N. long. by account, $87^{\circ} 30' W.$ The tide being out the men had some rest, which they much required after their hard labour.

“I expected to have got the boat floated during the night, but was disappointed, as the water did not rise by two feet so high as it had done the previous day, a circumstance which I could account for only by a change of wind from north-west to south.

“Early on the morning of the 2nd we carried the baggage a mile further down the stream, and afterwards, with much trouble dragged our boat over some shoals.

“We were now afloat in a salt water lake of a few miles in width, and we steered towards the only apparent opening, bearing north. On passing a point to our left two Esquimaux tents came into view. As we had not yet breakfasted, I went on shore whilst the men were cooking to ascertain if there were any inhabitants. After calling once or twice outside the door of one of the tents, an old woman popped out her head, and an aged man soon after appeared. From them I learned that the sea before us was continually full of ice, and could with difficulty be traversed in their kyaks or small canoes.

“Appearances led me to suppose that this information was correct, but it was necessary to judge for myself, and at least make an attempt to get forward, although not a pool of open water could be seen to seaward.

“After landing three of our men, who had assisted us across, and who were to return to Repulse Bay, and giving some presents to our new friends, we pushed off, and stood to the north-west among heavy and closely packed ice, through which we made very little progress. Ranges of low granite hills lined the coast, at some places a few hundred yards distant from it, at other places projecting into the sea.

“After tracing the shore for eleven miles we passed a steep rocky point which was named Point Hargrave. When a few miles past Point

Hargrave, being completely stopped by ice, we put on shore and found a large wooden sledge, half of which we cut up for fuel, intending to pay the owner, whom I was pretty sure of finding on my return.

"At 11h. A.M. on the 3rd we rounded a high bluff cape, which was called after the lady of Sir John Henry Pelly, Bart., Governor of the Hudson's Bay Company. It is situated in lat. $67^{\circ} 28' 00''$ N., long. by account $87^{\circ} 40'$ W.

"With much exertion we advanced three miles beyond the cape, when we were enclosed by the ice, so that we could neither advance nor retreat. The shore still kept its north-west trending, and presented a succession of low muddy points and alternate bays. Into each of the latter a deep ravine opened, which during the melting of the snow in spring must form the beds of considerable streams, although at present they were nearly dry. The tides here were very irregular in their height, one tide flowing eight or ten feet, and the next not above half as much. The depth of water within one hundred yards of the shore was from three to five fathoms on a bottom of mud and sand.

"There was a fresh breeze off shore on the 5th, which had but little effect upon the ice. I therefore determined on returning, and if possible crossing over to Melville Peninsula for the purpose of tracing its shores to the Fury and Hecla Strait. By chopping off some pieces of ice and pushing aside others, after much exertion we succeeded in getting our boat among ice somewhat less closely packed. During our detention the weather had been so foggy that no observations of any value could be obtained; our clothes were all the time either quite wet or damp, our fuel was nearly expended, and we had much difficulty in finding water that was drinkable.

"I had travelled five miles along the coast, but the walking was so, fatiguing, that I gave up all hopes of performing the service on foot at this season.

"Working our way among the ice until a mile or two past Point Hargrave, there now appeared to be sufficient open water to allow us to cross over to Melville Peninsula, the nearest point of which bore N.E. (true) distant ten miles.

"We completed the traverse in five hours amidst torrents of rain accompanied by thunder and lightning, the wind having shifted from south-west to east.

"Having secured the boat to the rocks, the men, although drenched to the skin, went immediately to sleep in their wet clothes, eighteen hours hard work at the oars and ice poles having thoroughly tired them all.

"There was a thick fog with rain all the night of the 6th, but about 6 o'clock on the morning of the 7th, a fresh breeze from S.E. dispersed the mist. As soon as the weather cleared up we started, but our progress was very slow; in four hours we gained as many miles, and were again stopped by our constant enemy. Some deer were seen feeding among the rocks, and I landed for the purpose of endeavouring to get some venison, but the animals were too shy to be approached. An

hour's sunshine dried our clothes and bedding, and thus made us feel rather more comfortable than we had been for some days past. The breeze having driven the ice a short distance off shore we ran a league to the northward. The wind having increased to a gale, it became dangerous to proceed among the ice, we therefore pushed for the shore, which was only a quarter of a mile distant, but we had much trouble in reaching it although pulling six oars, and ran much risk of being crushed by overhanging masses of ice under which we were obliged to pass.

"Early on the 8th, it became calm, and so slight had been the effect of the late gale, that the ice had nearly surrounded us before we got our anchor up. The boat could not be placed in safety here; I therefore decided on running back to our starting point, and there await some favourable change. A light breeze aided our retreat, but the ice followed close in our rear, and before we had been half an hour under shelter every spot of open water was filled up.

"I learned from our Esquimaux acquaintances that the deer had already commenced migrating southward.

"This being the case I prepared to walk across to Repulse Bay, to learn how the men left there were getting forward with the arrangements for the wintering. Leaving three men in charge of the boat, I started on the 9th, in company with the other three, and reached our destination on the following day, at 2 P.M. A few deer had been shot, and some salmon caught, but neither were yet abundant.

"The Esquimaux had gone to the lakes and stationed themselves at the several deer passes, where they watch for and intercept the animals with their swift canoes, and spear them in the water.

"After mature consideration I determined on giving up all hopes of prosecuting the survey at present.

"My reasons for arriving at this conclusion I shall here briefly mention, as such a step may seem somewhat premature. I saw from the state of the ice, and the prevalence of northerly winds, that there was no likelihood of our completing the whole of the proposed survey this season; and although part of the coast, either towards the Strait of the Fury and Hecla, or towards Dease and Simpson's furthest, might be traced, yet to accomplish even this might detain us so long, that there would be no time to make the necessary preparations for wintering, and we should thus be under the necessity of returning to Churchill without accomplishing the object of the expedition, or if we remained at Repulse Bay, run the risk of starving, for I could obtain no promise of supplies from the natives; and all the provisions that we carried with us amounted to not more than four month's expenditure, which was all that our boats could carry. We should thus have to depend almost altogether on our own exertions for the means of existence both in regard to food and fuel.

"On the 11th, retaining one man with myself, to guard our stores and attend the nets, the remaining six were sent to assist in bringing over the boat. They returned on the 15th, having been only two days

crossing. Two Esquimaux had accompanied them to assist, and also to act as guides; three of the 'portages' were thus avoided, and the party had likewise the advantages of a fine fair breeze in the lakes. The Esquimaux had wrought well and were liberally rewarded. One of them a merry little fellow, named Ivit-Chuk (*Anglice* Seahorse,) was engaged to accompany me on my intended Spring journeys, over the snow and ice.

"All hands were now busily occupied in making preparations for a long and cold winter. To build a house was our first object, and there being no wood, stones were collected at a favourable spot, in a hollow on the north side of the river, a quarter of a mile from the sea. Our hunters, Nibitabo and Ouligbuck, were continually on the look out for game, and whenever I had leisure I shouldered my rifle, and had frequently some fine sport among the deer, shooting seven one day within two miles of our encampment.

"On the 2nd of September, our house was finished. Its internal dimensions were 20 feet long, by 14 feet broad; height in front $7\frac{1}{2}$ feet, sloping to $5\frac{1}{2}$ at the back. The roof was formed of oil cloths and Morse skin coverings, the masts and oars of our boats serving as rafters. The door was made of parchment deer skins stretched over a frame of wood, it was named Fort Hope, and it was situated in latitude $66^{\circ} 32' 16''$ N.; longitude (by a number of sets of lunar distances) $86^{\circ} 55' 51''$ W. The variation of the compass on the 30th August, 1846, was $62^{\circ} 50' 30''$ W.; dip of the needle $88^{\circ} 14'$; and the mean time of 100 vertical vibrations in the line of declination 226".

"During the open water, salmon were caught in the bay, but a marine insect, somewhat resembling a shrimp in miniature, cut up our nets so much that it was impossible to keep them in repair. Steeping the nets in a strong decoction of tobacco had no effect.

"On the 16th of October the thermometer first fell to zero, and the greater part of the reindeer had passed. We had at this date shot 130 of these animals, and during the remainder of the month and in November 32 more were killed, so that with 200 partridges and a few salmon, our provision store (built of snow,) was pretty well stocked.

"Sufficient fuel had been collected to last, if economically used, for cooking until spring, and I had shot a couple of seals, which produced oil enough for our lamps.

"By nets set in the lakes under the ice some salmon were caught, but the numbers caught were latterly so few, that on the 4th of January the nets were taken up.

"Our house, long before that time, had become sufficiently cold, the temperature in my room (a small space separated from the rest of the dwelling by a partition of oil cloth,) was frequently from 10° to 12° below zero. The men's quarters, on account of the number crowded together, were rather less cold, nor did we receive any heat from our fire when cooking, as the chimney (not being built on the most improved principles.) obstinately refused to allow any smoke to pass through it without the door being open. Fortunately the majority of the party

had been accustomed to cold weather, and being all in excellent health, our trifling discomforts furnished the subject of many a joke.

"The winter was extremely stormy, indeed so much so, that frequently we could not move 50 yards from the house for several days together. On those occasions we took only one meal per day. The prevailing winds were from the north-westward, and the lowest temperature we experienced, 47° below zero, occurred on the 8th of January.

"Towards the end of February, preparations for our spring journeys were commenced. Two sleds, resembling those used by the Esquimaux, were made by nailing together some of the battens which formed the ceiling of our boats.

"In the beginning of March the reindeer began to migrate northward, but were very shy. One was shot by Nibitabo on the 11th.

"I had intended setting out on my journey over the land and ice on the 1st of April, but an accident that happened to Ouligbuck detained me until the 5th, on which day I left Fort Hope, in company with three men, the Esquimaux, Ivit-Chuk, and Ouligbuck's son, as interpreter.

"Our bedding and provisions were placed on two sledges, each drawn by four dogs; for two days our route was the same as that by boat through the lakes last autumn. On the 7th, when two miles from the sea, we struck across land to the westward, and built our snow house on a small lake four miles from Point Hargrave. This being the last fresh water lake we were likely to see for some days, our sled runners were re-iced, and an Esquimaux who had assisted us thus far with his sled and dogs, returned to his home.

"A strong breeze of head wind, with thick snow drift, impeded our progress on the 8th, but we nevertheless advanced seven miles beyond Cape Lady Pelly before encamping. The 9th proved fine, and the ice was less rough than that passed over the previous day, but our dogs began to fail, and one of them having become quite useless was shot.

"About midday on the 10th we arrived opposite a rounded point which was named Cape Weynton. Our course now lay across a bay about six miles deep and ten wide, which received the name of Colville, in honor of the deputy-governor of the Company. Not being able to reach the land on its north side we built our house upon the ice. The north point of the bay, which we reached the following forenoon, was called Beaufort, after the learned and scientific hydrographer to the Admiralty.

"The land which had hitherto been rocky, and ran in a N.N.W. direction, now turned to the north, and became gradually more level, exhibiting every indication of a lime-stone country. Our next encampment was in Keith Bay, situated in lat. $68^{\circ} 17' 00''$ N., long. $88^{\circ} 22' 00''$ W.

"The coast here took a sharp turn to the eastward, and our Esquimaux companion informed me, that by crossing overland, in a north-west direction, to a large bay which he had formerly visited, we should shorten

our distance considerably. I decided on adopting the plan proposed, and left the coast on the morning of the 12th.

"On the 15th which was very stormy, with a temperature of 20° below zero, we arrived at the steep mud banks of the bay spoken of by our guide, and called by him Ak-ku-li-gu-wiak. Its surface was marked with a number of high rocky islands, towards the highest of which (six or seven miles distant) we directed our course, and were before sunset comfortably housed under a snow roof. We had the extreme good fortune to find some fuel by digging under the snow, and could thus afford to have our pemmican warmed and a kettle of tea made. A gale of north wind made this the coldest day we had been exposed to during the journey, and not one of the party (not even the Esquimaux) escaped without being severely marked on the face.

"As the dogs were now nearly useless I determined on leaving them here with some of the party, including the Esquimaux, for the purpose of recruiting their strength, and, if possible, to kill seals, which were numerous; whilst I, with two of the men, proceeded to trace the remainder of the unexplored coast. The 16th was so stormy that we could not attempt to cross the bay, but a search was made among the islands for Esquimaux, the recent foot-tracks of two of whom had been noticed the previous day. No natives were found, although there were numerous signs of their having been in the neighbourhood a few days ago.

"Early in the morning of the 17th I set out in company with two of the men, for the purpose of following the coast to some point surveyed by Sir John Ross, as I now felt confident that that veteran discoverer was correct in his opinion as to Boothia Felix being part of the American continent. We directed our course to the furthest visible land which bore N. W. (true.)

"The weather was beautiful but cold, and the ice being smooth, a brisk walk of seventeen miles brought us to the point towards which we had been proceeding, in time to obtain a meridian observation of the sun. Cape Berens is situated in lat. 69° 4' 12" N., and long. 90° 35' W. It is formed entirely of granite, partially covered with moss. Thirteen miles beyond this we arrived at two narrow points in the small bay, between which we built our snow hut, which being made too small, we passed a rather uncomfortable night. Bed and bedding for the party consisted of one blanket and a hairy deer skin, the latter being placed on the snow to prevent our clothes getting wet.

"The shore still trended to the N. W., and we had not travelled more than four leagues on the 18th when the coast took a sharp turn to the eastward. We had been tracing the west side of a deep inlet which was named Halkett, after one of the members of your honourable board.

"As we were now near the latitude and longitude of Lord Mayor's Bay of Sir John Ross, I struck across land nearly in a north direction, and, at noon, when passing over a considerable lake, the latitude 69° 26' 1" N., was observed. Advancing three miles beyond this we reached another lake, and, as there was yet no appearance of the sea, I ordered

my companions to build a snow hut and search for fuel whilst I went to look for the coast.

"A walk of twenty minutes brought me to an inlet not more than a quarter of a mile wide. This I traced to the westward for three miles, when my course was again obstructed by land. Ascending some high rocks, from which a good view could be obtained, I thought I could distinguish rough ice in the desired direction. With renewed hopes I set out at a rapid pace, plunging among deep snow, scrambling over rocks and through rough ice, until I gained some rising ground close to the beach. From this spot where I now stood, as far as the eye could see to the north-west, lay a large extent of ice-covered sea, studded with innumerable islands. Lord Mayor's Bay was before me, and the islands were those named by Sir John Ross, 'the Sons of the Clergy of the Church of Scotland'.

"The isthmus which connects the land to the northward with Boothia Felix, is only one mile broad, and, to judge by the number of stone marks set up on it, appears to be a favourite resort of the natives. Its latitude is $69^{\circ} 31' N.$, long. by account, $91^{\circ} 29' 30'' W.$ With a grateful heart to Him who had thus brought our journey so far to a successful termination, I began to retrace my steps towards my companions, and at a late hour reached the snow hut—an excellent roomy one—in which I enjoyed a pleasant night's rest after the fatigues of the day.

"On the following morning, after taking possession of our discoveries with the usual formalities, we traced the inlet eastward. When we had gone four miles, the land to our left turned up to the north, leaving an opening in that direction two miles wide, bounded on the east by one or more islands. The strait separating these from the mainland was in some places very narrow, and ran about south. Finding on the morning of the 20th that we were at the head of a deep inlet, I was obliged to take the straightest route across land, towards our snow hut of the 17th, as our provisions were all but consumed. There were many steep hills to be climbed and deep ravines to be crossed, before we reached Halkett Inlet. This we at last effected a little before midday; the snow being very soft, made the distance, only ten miles, appear like twenty. We reached our old hut at 2h. P.M. One of the men suffered so much from fatigue and inflammation of the eyes that I went on alone during the following day, leaving Corrigan, a fine, able young Orkneyman, to come on at a slower pace with his lame companion.

"When five miles from the island where the rest of the party had been left, I was met by four Esquimaux whom I had not seen before. After shaking hands with them they wished me to visit their houses, which were close at hand; but as my men were not in sight, and as I was quite unarmed, I declined the invitation, but with some trouble prevailed on them to follow me to our encampment. This was a fortunate meeting for us, as we obtained a quantity of seals' blubber for fuel and dogs food, and some of the flesh and blood of the same animal for our own use. A couple of fine large dogs were also bought.

"As we were all more or less affected with snow-blindness, and the dogs were still weak, we remained on the island, which I found to be situated in lat. $68^{\circ} 53' 44''$ N., long. by account, $89^{\circ} 56' 00''$ W. It is formed almost entirely of granite, and is upwards of 730 feet above the level of the sea. From the highest point of it I obtained a fine view of the bay, and was thus saved the trouble of tracing its shores. It extends sixteen or eighteen miles to the southward, and contains a number of rocky islands, the highest of them being that on which we encamped. The bay was named Pelly Bay, after the governor of the company; and the group of islands, Harrison Islands.

"Having now as much seals' flesh and blood as would maintain us for six days on half allowance, I determined on tracing the shores of the land over which we had travelled on our outward journey.

"We set out on the morning of the 24th, and directed our course to the eastward of the north; the coast preserved this trending for twenty-five miles, and then ran eight miles due east, forming a cape which was called Cape Chapman. We now turned south-east, and continued this course forty miles, and finally south thirty-five, which brought us to Keith Bay on the 30th, when, on account of a strong gale of wind and thick drifts, we had much trouble in finding a small *cacho* of provisions left here in passing.

"The whole of the land which we had traced during the last seven days was low and flat, and very regular in its outline, there being few or no bays and points. It was named Simpson's Peninsula.

"During the remainder of our journey we followed, as nearly as possible, the same route as that by which we had passed in the opposite direction, and arrived at Repulse Bay on the 5th of May, all safe and well, but as black as negroes, from the combined effects of frost bites and oil smoke.

"At our winter quarters everything had gone on prosperously.

"Having still to trace the west shore of Melville Peninsula I started for this purpose on the evening of the 13th of May, intending to travel by night with a chosen party of four men.

"Our course to the sea was nearly due north through a chain of lakes, and on the 16th we built our snow hut on Cape Thomas Simpson, in latitude $67^{\circ} 19' 14''$ N., longitude $87^{\circ} 00'$ W., a rocky point which I visited last autumn in the boat. From this place I sent back a fatigued party of three men and a sledge of dogs that had assisted us thus far. As the dogs were of little use during the last journey, I took none with me now.

"We left our snow hut on the evening of the 16th, each of the men being laden with about 70lbs. weight, whilst I carried my instruments, books, &c., weighing altogether 40lbs. Two blankets and as many hairy deer skins constituted the bedding of the party. Our progress was very slow, as the ice was rough, and the snow both soft and deep.

"We advanced only 12 miles the first night. On the 17th we crossed a bay 18 miles wide, and encamped at its north point, opposite to

which, and within two miles of the shore, there is a large island, which was honoured with the name of his Royal Highness the Prince of Wales. A small island to the south of this was called Sabine Island.

"The general trending of the coast was now N.N.E. Near the shore the banks were high and steep, and, where visible through the snow; appeared to be formed of sand, shingle, mud, and granite boulder stones; whilst a range of rocky hills, of various but not great altitudes, were to be seen a few miles inland.

"On the 20th, we were detained 24 hours by stormy weather, at Cape Lady Simpson, a long point in latitude $68^{\circ} 10' N.$, longitude $85^{\circ} 53' W.$ We rounded Selkirk Bay, (called after the noble Earl of that name,) on the 21st, and after passing a number of small points and bays we encamped on what at first appeared to be part of the main land, but which was afterwards found to be an island. Our snow house on the 25th was built in latitude $68^{\circ} 48' N.$, longitude $85^{\circ} 4' W.$, near a small stream, frozen (like all others we had passed) to the bottom.

"We had not yet obtained a drop of water of nature's thawing, and fuel being rather a scarce article, we sometimes took small kettles of snow under the blanket with us, to thaw it by the heat of our bodies.

"Leaving two men to endeavour to fish and shoot, I went forward with the others, and crossed Garry Bay, passing inside a number of islets.

"Our course on the following night lay to the westward of north, the coast being high and rocky, and indented with numerous inlets.

"After accomplishing 20 miles in a straight line, we encamped; as the weather looked fine we did not build our usual comfortable lodgings, which I had afterwards cause to regret, as a heavy fall of snow soon came on. We were now in latitude $69^{\circ} 19' 39'' N.$, and longitude $85^{\circ} 4' W.$

"The latter is evidently erroneous, as I had neither chronometer, nor watch, that I could place dependence upon, and the compasses were much affected by local attraction.

"Our provisions being nearly exhausted, I could proceed only half a day's journey further northward, being obliged to return the same night to our present quarters. Leaving one of the men, I set out with the other.

"The snow fell fast, and the walking was extremely fatiguing. After advancing 10 miles, the land turned sharp to the eastward, but as the weather was thick I could not see how far it trended in this direction.

"When we had waited here nearly an hour, the sky cleared up, and, I discovered that we were on the south shore of a considerable bay, and could trace the coast to the northwards, for about 12 miles beyond it.

"To the most distant visible point (latitude $69^{\circ} 42' N.$, longitude $85^{\circ} 8' W.$,) I gave the name of Cape Ellice; the land where we stood was called Cape Crozier, and the intervening bay received the name of Parry Bay. Finding it hopeless to attempt reaching the Strait of the Fury and Hecla, from which Cape Ellice could only be a few miles distant, we retraced our steps, and after an absence of 11 hours joined

our companion, who had built a snow house, and was on our arrival very busy attempting to coax a little wet moss into sufficient flame to boil some chocolate, but to no purpose; we were consequently obliged to finish the process with alcohol, a small quantity of which still remained.

“ Early on the morning of the 30th we arrived at our snow hut of the 25th. The men we had left here were well, but very thin, as they had neither caught nor shot anything eatable except two marmots. Had we been absent twelve hours more they were to have cooked a piece of parchment skin for supper.

“ Our journey hitherto had been the most fatiguing I have ever experienced; the severe exercise, with a limited allowance of food, had reduced the whole party very much. However, we marched merrily on, tightening our belts—mine came in six inches—the men vowing that when they got on full allowance they would make up for lost time.

“ Nothing of importance occurred during our journey homewards.

“ Our several ‘cachos’ of provisions were found safe, and some partridges that were shot aided our short commons. At 8h. 20m. on the morning of the 9th of June we arrived at Fort Hope, all well, having been absent twenty-seven days.

“ During the whole of this trip our snow houses were built by Corrigal, whose services were of the utmost value to the party, and who had accompanied me when tracing the opposite shores of the large bay, the survey of which I had now completed, and to which I gave the name of Committee Bay.

“ During the remainder of our stay at Repulse Bay the whole party were occupied in procuring food, collecting fuel, and preparing our boats for sea.

“ In the latter part of July many natives visited us, with all of whom we were on the most friendly terms. Our spare nets, knives, files, &c., were distributed among them in portions, according to the several merits of the recipients.

“ The ice in the bay broke up on the 11th of August. On the following day, after bidding farewell to our good-humoured friends (who were loud in their wishes that we would soon return to them) we left our dreary winter quarters.

“ Head winds and stormy weather retarded our progress much, so that we did not reach Churchill until the 31st of August, when I found that we had still eight bags of pemmican, and four cwt. of flour remaining; our expenditure having been twelve bags of the former and twenty-one cwt. of the latter.

“ We were detained in Churchill River by a gale of wind until the 3rd of September, when the weather became more moderate, and we were able to continue our voyage towards York Factory, at which place we arrived late on the evening of the 6th.

“ I cannot close this rough and meagre sketch of our proceedings, which I have prepared amidst many interruptions, without bearing

testimony to the excellent and praiseworthy conduct of the men under my charge.

"They were always willing and obedient, and, although not all equally able to do their duty, they all did their utmost to accomplish the objects of the expedition.

"With the utmost respect, I remain, Hon. Sirs, your most obedient servant,

"JOHN RAE."

"*York Factory, Hudson's Bay, Sept. 21, 1847.*"

THE REPORT OF MONS. DE CASTELNAU TO THE FRENCH GOVERNMENT, *on the River Amazon.*

Translated from the French.

May it Please Your Excellency.

I am always a prey to anxious solicitude concerning my fellow traveller Mons. D'Osery, of whom I have not yet obtained any intelligence, I conjecture that he has been detained at Lima, and perhaps not willing to part with the documents relative to the results of the expedition, which have been entrusted to his care. In my last despatch I had the honour to communicate to Your Excellency our arrival at the mission of Syracuse, after our painful and dangerous campaign through Ucayil. Received with the warmest hospitality by the Franciscan monks who govern there, we had, thanks to their attentions recovered in the space of a month sufficient strength and health to enable us to continue our researches. This mission, in which nothing worthy of interest is found but *les Peres*, is situated in the centre of a savage race of the Pampadel Sacramento; three priests which compose it, with the only weapon of defence, *the faith*, are known, not only to escape all the attacks of barbarians which surround them, but to have converted three millions to the religion of Christ! The chief of these missions the Padre Plaza, has *sufficient* power to inspire boundless confidence in these converts, and the authority he exercises over them, has no other limits than those which his pure intentions have given him. I will not enter here into the detail regarding the organization of these missions, for although they may afford some interest, they will carry me too far from the work to which I ought to confine myself at present. I will however cite a fact worthy of notice.

One day I expressed the desire to form a collection of the fish of Ucayil for the Museum of Natural History; the Padre Plaza, forthwith organized a party to fish in a lake situate a day's journey up the river, and about six hundred Indians accompanied us. Arrived at the desired

place we found numbers of huts made of the leaves of the palm tree, which had been prepared for our reception, and where we passed the night.

The following morning at break of day, a great number of canoes were ploughing the waters of the lake which was about a league in length. The Indians who embarked threw into the lake a quantity of a poisonous root, in order to stupify the fish, and the surface of the water was shortly so covered with them, that while numerous small canoes went towards the middle of the lake to gather them, swarms of savages crowded around the banks, and continued the work of destruction with their arrows and clubs. Towards evening about twenty-five thousand fish had been taken, but among this immense quantity, I found only about forty of different species, and of which the most interesting was the electric eel, so remarkable for the violence of the shock it gives. This fish has however already been the subject of study to the celebrated Humboldt. The next day we were obliged to depart from those places on account of the infectious odour diffused from the lakes covered with dead fish.

On the 30th of October we left the missions in four canoes, furnished me by the good fathers. The Indians who were to accompany us, to the number of 18, before embarking, threw themselves at the feet of Father Plaza to receive his blessing. It was not without regret that we parted from this excellent old man, to whom we owe the warmest gratitude.

The following morning we arrived at the mission of Tierra Blanca, where we only remained a few minutes. Continuing our voyage we encountered every day numerous huts of the Conibos and Piros Indians, who, although we could not convert them, received us with hospitality. Among the customs of this people, is that of bringing up with great care the young of the beautiful Crowned Harpy, and afterwards sacrificing this magnificent bird in the presence of a numerous assembly. We passed by the last settlement of those nations. The rest of the river is inhabited by the Mayorunas, a savage and cannibal tribe, against whose poisoned arrows it is always necessary to be upon one's guard.

On the 6th of the month, we arrived at the mouth of the Ucayil, in the river Amazon (which in this part is called Maranon). These two rivers are here pretty much of the same width, which I calculate to be about half a league; this junction produces a magnificent effect. After two or three hours research, we arrived at the village of Nauta, inhabited by about a thousand Comaco Indians, under the direction of a priest.

I visited the village of Omagna, inhabited by the Oregon Indians, remarkable for their ears, which, by artificial means, attain almost incredible dimensions; that of Iquito the name of another nation inhabiting the woods in the environs, and afterwards that of Pepas. Here we found several missionaries, one of whom accompanied us to the Yaguas, a nation in the interior, remarkable for their features and customs, differ-

ing entirely from those of the other Amazonian colonies, and belong to the Caribbee race.

Among those various tribes, we saw the root from which they extract the juice for poisoning their small arrows; these they shoot by means of a bow of extraordinary length. I gathered the several ingredients, which may offer an interesting subject for chemical analysis.

There are in the enviroûs extensive woods of wild cocoa nuts. Nature has nowhere displayed her riches more bountifully. It is impossible to describe the variety and extreme beauty of the trees, especially the palm trees, which form those forests. The animals which inhabit these countries, are not less remarkable for their strange shapes, than for the brilliancy of their colours. The jaguars, the tapirs, the fourmilliers, the tatous, more than twenty species of apes, animals of the most brilliant kind, such as the couroucou, the cotinga, and parrots, are seen in every part. Among others we procured two beautiful birds, the *cephalopetrus* (*umbrella chatterers*) and the splendid couroucou, the first has on its head a singular tuft in the form of an umbrella, and the other displays in its plumage all that the sun of the Equator blends together, of purple, gold, and emerald.

The happy Yaguas who live in these forests, have no other clothing than what is composed of long scarlet feathers. Their manners are mild and peaceful. They acknowledge the immortality of the soul, but believe in universal salvation after death; according to their idea God is hid behind the sun, and his principal occupation, that of making this planet revolve. They have but one wife to whom they are faithful. They testify such a strong attachment for their children, that when they lose them they destroy everything which belonged to them, and set fire not only to the house, but also to their arms, and most valuable articles. When a young girl comes to womanhood, they shut her up for three months in an isolated hut in the woods, and no one is permitted to approach her but her mother. Also, when a woman is in her confinement, the husband gets into his hammock, gives the most heart-rending shrieks, while she poor creature, holds him and endeavours to assauge his imaginary pains. In this latter case, I really do not think that the tyranny of man could be carried to a greater length.

This region abounds in magnificent wood for building and cabinet furniture, and produces in abundance all that is requisite for navigation, such as pitch, tow, and excellent ropes, impervious to the action of the water, and which are made from the fibres of the palm tree. Vanilla is also found here in great quantities, and the Indians collect abundance of wax and rosin. Woods for dyeing are also very plentiful; from these I have obtained some samples which I hope may be useful.

We afterwards visited the villages of Cochiquinas, the Cavalto-Coché and De Loretto, the last Peruvian settlement. All this region, the most beautiful perhaps in the world, is given up to some missionaries, who have entire authority over the Indians. In almost all those villages there is also a governor, sometimes a white, sometimes an Indian, some-

times a Mulatto, or Mongrel, sent by the government of the province of Mayobamba, which is almost always in insurrection against the power of Lima.

I made a long stay in all the settlements, hoping for the arrival of Mons. D'Osery, from whom I had been separated on the Urubamba, and who, if Your Excellency remembers, should have again joined me on the Amazon; but, as I have already stated, I cannot obtain any tidings of him. At length on the 1st of January I determined on entering the Brazilian territories.

I cannot describe to Your Excellency the extreme solicitude^o of my mind, for Mons. D'Osery was charged by me to keep the Journals of the Expedition, the remarks, the collections, and, in short every thing obtained during four years of constant labour and danger; and only that I am yet in hopes he has remained at Lima, it would be impossible for me to remain tranquil under the uncertainty of a loss which I feel I should not have the strength to support.

Tabatinga is situated on the frontier of the Brazilian territory; we were received with firing of cannon, and with that hospitality, which for a long time I have been accustomed to meet with in the dominions of His Imperial Majesty, I learned there that a ship of war, had waited for me seventeen months on the Upper Amazon; but within the last few days had returned to Para, thinking that we could not get over the difficulties of our journey. In order to understand how very flattering and kind this proceeding was on the part of the Brazilian Government, it should be known that this was the first ship of war ever seen in those regions, so far removed from all civilization.

We found here, the Tecuna Indians; Mons. Neville took an excursion with them on the river Javary, and made a collection of some beautiful animals. On his return we continued our voyage in the Brazilian government canoes, accompanied by fifteen soldiers, furnished by the commander of the frontier.

A few days after we arrived at the village of Oliencia, where we continued descending the river; passing by Fonteboa, Ega, and La Barra de Rio Negro. From the Brazilian frontier to this point the Amazon bears the name of Solimoen. I found in this latter town a quantity of large earthen vases, containing bones, and which had been probably buried before the discovery of America.

Passing afterwards by Serpa, Santarem, Garupa, and Cameta, we arrived on the 15th of March at Para, where we were received with the greatest hospitality by Mons. Chalton, the former agent of the French Consulate, (the Consul, Mons. Leveillard having only just arrived.) The President of the province, and all the authorities, as well the inhabitants, loaded us with marks of kindness. My intention is to complete here my observation on the river Amazon, thence to pass on to Cayenne, from whence I shall return to France.

Deprived of instruments, and even of a simple compass, (by the absence of Mons. D'Osery,) I have only been able to make during the

course of this voyage, barometrical, thermometrical, and hygrometrical observations. Mons. Neville and myself have made numerous collections of zoology. I have given particular attention to every thing connected with commerce, and have a complete account of the productions of the country, and especially the wood for cabinet furniture, some of which is of rare beauty.

Under the head of geographical reports I am also of opinion, that this research will offer some interest. I have decided, by means of soundings and hydrographical observations, that the Amazon is navigable for large steam vessels, and without the least obstacle, as far as Pongo de Manseriche, that is to say, more than a thousand leagues from the entrance, that its principal confluence the Ucayli is to the junction of the Rio Tambo or Apurimac, (about two hundred leagues from the town to Para,) and that this navigation may be extended by way of the Pachytea, and without any impediment, to ten or twelve days' journey from Lima. As far as the village of Nauta (Perou) there are always in the principal course of the Amazon, from 5 to 6 fathoms water, and as far as Omagna (Perou) from 10 to 12. I am of opinion, that this river may be considered the first in the world. I had moreover collected together the most correct account of the region so entirely unknown, called Solimoen, I own this to the assistance granted me by the Brazilian government assembling around me all who had penetrated into it (generally for the purpose of finding Sarsaparella,) and for whom they had to send to the distance of forty and fifty leagues. In confronting and comparing those numerous evidences, I obtained pretty accurately, the course of the rivers Javary, Jutai, Jurna, Tefte, and Purus. All this will be quite new. I have also collected vocabularies of the languages of the various tribes we visited; but the most remarkable of all the curiosities I obtained is a statue in stone, weighing about 200 lbs., it was found in one of the forests of Rio Negro, and according to the tradition of the country was in the time of the Amazons. Up to this period I attached but little credit to the history of those female warriors, but in this country, at Obydos particularly, I learned that this tradition is still popular among the Indians. The statue in question is so clumsy, that it could only have been made by a people, with whom art was in its infancy. It is, however, highly interesting, as being the only monument of this kind as yet discovered in Brazil.

If we adopt the tradition which the country assigns it, we may suppose it meant to serve as an allegory for the Amazon, who although despising herself as being a woman, yet still tramples the other sex at her feet. This seems a natural conclusion from its posture, and other marks about it. I have the honor to send this statue to Your Excellency by the brig Beaujeu, which departs on the morrow for Havre. I direct it to the Commissary-General of the navy of that port, and I beg of Your Excellency to have the kindness to place it in the Royal Museum.

In conclusion, I have collected and preserved with great difficulty for the managerie of the museum of Natural History, a considerable number of

living animals, some of which have never been seen in Europe. At present I will only mention the following; first, the Acari, or Scolding Ape as remarkable for its colour of a bright scarlet as for the shortness of its tail:—this is the only quadruped of its kind of the New World. Second, the Lamentin, or Marine Cow, which gives rise to the stories of mermaids. Third, the Douroucoul, or Nocturnal Ape. I have likewise a Tapir, a Cabiai, and many other apes and birds; but, I cannot say, if all, or even any of these animals will reach their destination alive.

As I was about to close this dispatch, the President of the Province came in the name of the Government of H.S.M. to place at my disposal a steam vessel, to carry us to Cayenne.

I have the honor to be, &c.,

F. DE CASTELNAU.

Since the date of this report, accounts have been confirmed of the lamentable death of Mons. D'Osery, who was murdered by the escort sent to protect him.

SHIPS AND VESSELS BURNT AND DESTROYED, and others which were on fire, but most providentially saved.

(Concluded from page 591.)

The ship, Helvetia, 330 tons, Capt. W. Porter, burnt in Sandwich harbour, Pacific, 25th of February, 1847.—Laden with sperm and seal oil; fire commenced on the fore part of the vessel, between decks, prompt assistance, and endeavours made to subdue the fire by shot from the fort and scuttling her, but all proved abortive. That she was wilfully set on fire, the captain and officers had no doubt, but they exempt the crew, and impute the infamous act to a native, who made his escape immediately after the outbreak of the fire.

Barque, Ann of Sunderland from Ichabo.—Laden with guano; master and crew picked up in an open boat by the steamer *Water-Witch*. It appears by their statement that the *Ann* struck on the Hasbro' sand, and while beating over it, she shipped a quantity of water, which penetrating the cargo, caused almost immediate combustion, they abandoned the ship, when an explosion blew the stern out of the vessel, and she sank in deep water. Caused by the gas engendered by the partially ignited guano.

Ship, Francis Couasjee, in the Eastern Channel, May 27th, 1847, bound to China.—This valuable ship was discovered to be on fire about 8 P.M.; immediate exertions put out the fire. Some of the crew were strongly suspected of the foul design of burning this vessel.

Ship, Roberts, 700 tons, bound to China; cargo, cotton, fully laden; and reached Sangor, June 29th, 1847.—Smoke was discovered about

midnight issuing from the chain cable locker, water was promptly supplied, fire broke out, and resisted every effort to subdue it. Ship abandoned, officers and crew put on board the *Fatima*; about 3 A.M. burnt and sunk. The owner and commander acquit the crew of all blame or suspicion.

Ship, Palladium, Capt. Ravilly, from Nantes to Bourbon, destroyed on 4th of May, 1847, lat. $20^{\circ} 52'$ S., long. $25^{\circ} 50'$ W.; two ladies and fourteen other persons on board, as passengers and crew.—Cargo, pitch, tar, oil, turpentine, saltpetre, gunpowder, &c., discovered to be on fire in the hold at 2 P.M., which spread with such force throughout, that in less than 45 minutes from its display, captain, passengers, and crew were compelled to abandon the ship in two boats, with much order and regularity; they made for Trinidad and Martin Vas, but were most providentially picked up May 10th, by the *Sutledge*, Capt. Cookhill, whose generous treatment and unremitting kindness to brother seamen in distress, is deserving especial notice. Strange to say the boats were passed during the night of the 6th of May by a ship so close to leeward of them as to cause suspicion of either neglect, or a bad look-out. When off the Cape the *Sutledge* fell in with the French ship *Gol de Nantes*, from Bourbon bound to Nantes, when thirteen of the *Palladium's* crew were transferred to that ship; but the passengers proceeded to Calcutta by the *Sutledge*. No cause assigned for this disaster.

Ships burnt by Lightning.

Ship, Poland, Capt. Anthony, from New York to Liverpool, out five days.—Struck by lightning, and burnt on the 16th of May, 1839,—The captain, crew, and passengers, persevered during two days and nights in their endeavours to smother the fire. Got launch and boats out, and towed them astern, when the passengers and crew, 63 persons, were rescued from their perilous condition by the ship *Clifton*, Capt. Ingersall, from Liverpool to New York. The *Clifton* had on board 250 steerage passengers. The *Poland's* crew most generously received, and landed at New York.

Ship, Sultana, Capt. Page, from Bombay to Manila.—Struck by lightning, 4th of January, 1841, and much burnt on the coast of Palaman; crew escaped in the ship's boats, and after much fatigue and great peril they succeeded in reaching Borneo.

Ship, Bayfield, Captain Lucas, from London to Bowri, captain and crew did their utmost to subdue the fire, and did not quit the ship till flames burst forth; laid to in the boats abreast the ship till daybreak, when they attempted to board her for provisions and water, they contrived to get 30lbs. of bread and a compass, but could do no more. The boats kept company and after great suffering and privation the captain and all but three of his crew landed at Sierra Leone on the 9th day after they left the burning wreck.—Struck by lightning and burnt at midnight on 25th of November 1845, when in lat. $7^{\circ} 50'$ N., long.

17° 30' W., nearly 100 leagues from Sierra Leone, which the boats reached with the loss of three of their crew who perished from hunger and thirst.

American Packet ship, Thomas P. Cope, from Philadelphia to Liverpool, passengers and crew, 82 persons; caught fire in lat. 41° 15' N., long. 65° W.—Struck by lightning on the 29th of December, 1846, rigging and masts on fire, cut away masts and succeeded in keeping the fire under (below hatches) till 5th of January, when the British ship *Emigrant* hove in sight and bore down to their assistance, and took on board some of the passengers, but a gale sprung up and separated the ships for the night, it abated next morning, when all belonging to the *Thomas Cope* were safely got on board the *Emigrant*; they fell in with the packet ship *Washington*, on the 26th, and were transferred to that ship, and carried to Boston.

Missing Ships as reported at Lloyds:—In 1841, 29 ships and vessels; 1842, 39; 1843, 12; one of these vessels which was subsequently found, had her bows completely burnt through, and must have been destroyed by fire.

In addition to the above, it is most probable that the entire crew and passengers on board the vessels reported missing, are all lost.

(Signed) W. DODSON, *Secretary*.

Mem.—There are two *Achilles* and two *Australias* on this list: one *Achilles* was laden with jute, indigo, and sugar, and was destroyed by fire.

Brief Remarks on the foregoing Statement and Abstract of disastrous events.

An impartial attention to the record of losses sustained both at sea, and in harbour, cannot fail to induce much serious reflection. It will be noticed that many of these lamentable events tell their own tale, and are fully accounted for, but how long the smouldering effects of spontaneous combustion were gathering into effect on board the ships, *James Pattison*, *Achilles*, *William Rathbone*, *Elizabeth Walker*, the American ship, *Republic*, the coal ships, *Palestine* and *Dromore*, deserves attention and consideration.* Those remarkable instances of ships taking fire so long after the stowage of their respective cargoes, and departure from port, amply illustrate the necessity of some remedial method which shall indicate the earliest stage of ignition, and I have no hesitation in declaring that those ships might have been saved if they had been provided with tubes and rods, which would always have commanded attention to the state of the hold, and have foretold the existence of intense heat,

* The burning of the ship *Lord Eldon* at sea is another remarkable case, she sailed from Bombay on the 24th of August, and on the 27th of September 1834, fire broke out through spontaneous ignition, and the ship was destroyed, all hands escaped in her boats, and under the skilful conduct of Captain Theaker they were providentially saved.

before the flames burst forth with such irresistible force as is proved by the narrative of each of those disasters to have happened.

Fire on board ship is, in almost every instance, a sudden and a most unexpected event, and to avert its terrible effects, as every part of a ship is of such combustible material, the rarest qualifications for command are in immediate requisition. When presence of mind, with firmness and resolution are displayed by the captain, his orders will be cheerfully obeyed, and all under his command will place a reliance on his judgment and discretion; and as I have had some experience in their trials and encounters, I shall not hesitate to offer a few hints on this most important subject.

On the first discovery of fire, the hands should be turned up, and told in a few impressive words, that the safety of the ship and their lives, mainly depend upon their own conduct, they should then be stationed off to the most pressing calls of duty; if at sea, one watch might be employed to make the ship snug,—the driver and all lower sails should be clewed up and taken in, and the ship hove to, the awnings furled, and unbent, and every thing that is most susceptible of catching fire should be removed, as far as possible from the locality of the fire. The other watch, and every soul belonging to the ship, passengers included, should bring pumps, tubs, hoses, and buckets into active operation, the hatches and scuttles should be well secured with tarpaulins and wet swabs, and when the scuppers are plugged up, the deck or both decks, should be well flooded fore and aft, and when all is ready to form a volume of water over the fire, it becomes a critical point for consideration how to accomplish that purpose, and at the same time exclude the air from giving vent to the fire, which can best be done by having a hole cut just large enough for the hose, and guarding against any escape of air therefrom by this method, if the hose is well and constantly supplied, the rush of water must do good, should this first attempt tend to subdue the flame, then a hatch may be taken off, and all hands employed in pouring down water; if this operation shews a favourable result, then a determined effort may be made to break down to the fire; and as that object is of such essential consequence, commanders should not be too scrupulous, as they will be fully warranted to throw overboard whatever cargo may stand in their way, and at the same time it would be advisable to keep an account of all property destroyed for the general good.

When it is quite certain that all further endeavours are hopeless, then it becomes the commander's duty, with equal promptitude and resolution, to prepare for the only alternative, abandonment; and, at that critical period it will be prudent to entrust the preparation to a few amongst her officers and crew, who should as quietly as possible, get all the things needful to put in the ship's boats whilst the boatswain, and those he can depend upon, should made ready to hoist the long boat out, or prepare to launch her over the side, by cutting away the bulwarks; and, now is the time when order is essentially required to prevent a rush to the boats: all regard to discipline, and all respect to persons have so

frequently vanished on such trying occasions that it is well worthy of bearing in mind the absolute necessity of order and restraint, when so many lives may be sacrificed by insubordination and disobedience. If the crew can be under sufficient control to yield to their allotment in the ship's boats, and under the orders of such officers as may be appointed to command each boat, all will promise well to ensure their safety, but if otherwise, all past experience tells how fearful and how fatal may be the result.

CHRISTOPHER BIDEN.

Madras, August 13, 1847.

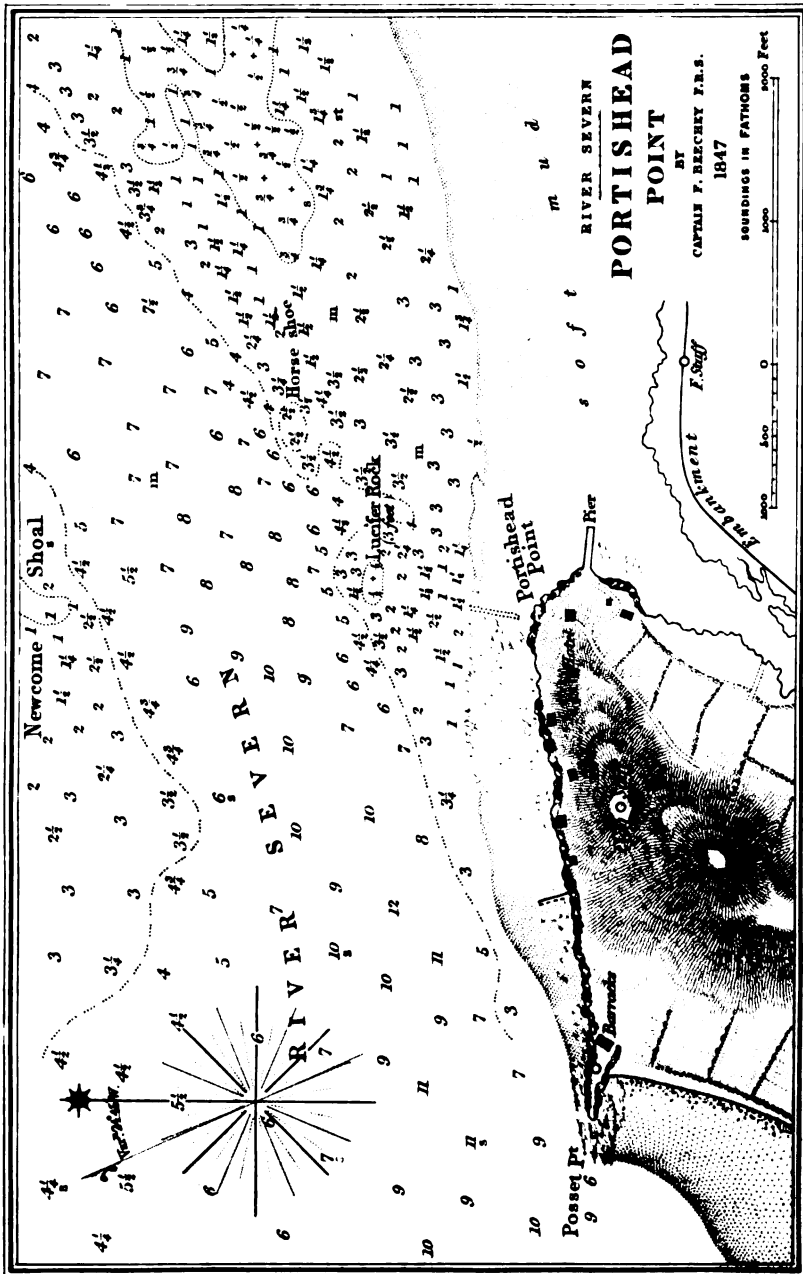
SURVEY OF THE BRISTOL CHANNEL.

Shirehampton, October 19th, 1847.

SIR.—As the season of operations in this channel is drawing to a close, I take this opportunity of acquainting you that, with the able and indefatigable help of Lieutenant Alldridge, my assistant, the survey of the season has been carried down from Old Passage at Aust, to below the south-west patch of the Welch grounds; comprising all the elevations of the dry sands above low water, as well as the depressions of the bottom below. And I have again to report to you some remarkable changes in the banks bordering upon the channel which forms the great thoroughfare between Kingroad and Flatholm, and to add the position of a dangerous rock off Posset Point, with only 3 feet water upon it at low water spring tides; which has not hitherto found a place upon our charts. (*see plate.*)

In supplying this information I am sure it will be interesting to you to have placed before you at the same time a statement of some of the changes which have occurred in this channel during the last 20 years: that is, from the date of the chart of that eminent Surveyor Captain Martin White, up to the present time; and to trace through the intermediate surveys of Captain Denham in 1831, and my own in 1839 and 1847, the progress of the extensive changes which have been made in the banks; changes, which are of so extraordinary a character, from their magnitude, that had those surveys been less carefully executed would certainly be deemed unworthy of credit.

In the survey of Captain Denham may be discerned the effort of the Tail of the Hook to form a shoal, afterwards called the south-west patch, by an elongation of the spit of the Hook, of upwards of half a mile: and some minor alterations in the sands of the English grounds may be traced, but the deep water continued much in the same place as before. Nature does not seem to have been ripe at that moment for the extraordinary change that was wrought, about the year 1839, although some threatenings seem to have been in operation from the heavy over-falls marked in the charts of those days in a place where now none exist.



J.A. Walker-Saunders

Published according to Act of Parliament at the Hydrographic Office of the Admiralty 1st Dec. 1847.
 Sold by A.H. Barr Agent for the Admiralty, Cause 2, Finsbury.

In that year (1839) I had the honour to report to you one of the most remarkable changes that probably ever fell under your observation during so short an interval.

The tail of the Hook, a shoal upwards of two miles in length by an average width of 2000 feet, had entirely disappeared since the previous survey, and the space on which it had stood then formed a new channel in which there was an average depth of three fathoms at low water springs.

The Shord or passage between the bank removed and the Hook, in which there had been 6 fathoms over a large space and 4 and 5 fathoms in other parts, was now occupied by a mound of sand which had risen bodily fifty-two feet, for two miles in length! and in the deepest part of the channel, in which there had been 54 feet water, there now appeared a huge mound of sand a mile in length, by half a mile in width, with its crest 76 feet above the former level of the bottom!

Nor had Nature limited her operations, great as they were, to those huge changes; on the south side of the channel in the English grounds she had scooped out a bay a mile and a half in length, by half a mile in width, and had increased the water there to an average depth of 15 feet throughout, sweeping away a bank (previously dry, half a mile in length,) and placing 5 fathoms at low water in the very site it had occupied.

I have now to report to you other alterations scarcely less remarkable than those above mentioned.

The Welch Hook which has been throughout pushing out its sands to the westward, has again encroached upon the Shord a third of a mile, by a mile and a half in length, and risen through all its area (amounting to 18,000,000 square feet) to an average height of ten feet.

The S.W. patch has gone bodily to the N.W., 1500 feet, retaining nearly its same form and dimensions.

The Shord, or passage between it and the bank, is filling up; and, throughout all its northern half, is 12 feet shallower than it was in 1839. A dry patch 2000 feet long has risen upon the elbow of the sand opposite Walton, and with the exception of this patch which has recently appeared, the low water line has receded from its position in Captain M. White's time 2200 feet, for full two miles and a half; and higher up, abreast of the Newcome, the tide has cleared away from the bank a strip a quarter of a mile in width, by a mile and a half in length, driving the Newcome over towards Portishead.

The effect of these changes has been rather to improve the channel below Portishead, and to narrow that above it up to Kingroad, by a full third of its width at low water: that is between the limits of the three fathoms lines on the opposite sides of the channel.

The Cockburn shoal near here has followed the same course, and moved down bodily a quarter of a mile, all tending to narrow the former limit of Kingroad.

The great change, however, was made between the years 1831 and

1839; and it would be interesting to be able to trace so remarkable a feature to some known or probable cause, but I am sorry to say I have not heard of any that can at all bear upon the question.

As these changes have, as I before observed, rather improved the channel below Portishead than otherwise, I deem it unnecessary to forward any particular plan of them before the chart of the whole is completed, except with regard to that portion about Kingroad, which will shew you the position of the rock off Posset and the present position of the Newcome.

I have the honour to be, Sir,

Your most obedient humble Servant,

F. W. BEECHEY.

To Rear Admiral Beaufort, &c.

[We have been favoured with the above important communication from Capt. Beechey to the Admiralty, and gladly give it a place in our pages from the extreme interest of the subject; and also, as it affords us an opportunity of offering some remarks upon the historical part of the subject; which we happen to know runs thus:—

In 1827, a survey of the Severn and Bristol Channel, above Flatholm, was executed by Capt. Martin White, R.N., and in 1831, continued westward by Capt. Denham, R.N., who found that some alterations, even in the short space of four years, had occurred in the sands forming the limit of the survey of his predecessor.

In 1839, the Trinity Board determined upon placing a floating light in the channel, between the English and Welch grounds, and after giving publicly the bearings, stated that the vessel would ride in between four and five fathoms, at low water. The bearings, when laid off upon the charts at the Admiralty, gave only *two* fathoms for the depth of water in which the vessel would lie, and it was very properly found she would bump her bottom out at low water. The Trinity Board, however, having recently examined the ground, persisted in this statement, and Capt. Beechey was ordered to survey the locality; and to report accordingly, and whether there were sufficient grounds for a new survey. This service was speedily executed, and a report made of a nature which greatly surprised the hydrographer.

The well known surveillance of that distinguished individual had been especially directed to the Bristol Channel, on account of its being swept by such unusually high tides, but he was not at all prepared for the report of Capt. Beechey, which communicated the astounding fact of of a shoal having risen on one side of the channel, nearly eighty feet in perpendicular height, and nearly a mile in extent, since the previous survey had been executed; and that on the other side of the channel, on the English grounds, and about where the light ship was to be placed, a shoal half a mile in length, that was before dry, was now, not

only annihilated, but there was thirty feet at low water spring tide where it had stood; and that a bay had been scooped out of the English grounds a mile and a half in length, half a mile in breadth, and at an average increase of fifteen feet in its depth; that there had from this spot alone been removed 337,500,000 cubic feet of earth! and that on the northern side there has, on the contrary, accumulated 480,000,000 cubic feet of sand. That a channel had opened in the sands more than half a mile in width, in which there was generally three or four fathoms, where there had before existed a bank dry at half tide, two miles in length by an average of one-third of a mile, or 2000 feet, in width, that this had, in short, been removed from here in addition to the above 840,000,000 cubic feet of sand.

With these well authenticated alterations there was no difficulty in admitting the accuracy of the Trinity Board statement, and the light vessel was placed accordingly.

It was quite clear there were here ample grounds for a fresh survey, and as soon as Capt. Beechey had completed the survey of the Irish Sea, then in progress, he was ordered down to Bristol, and he has again had to record important changes, although not of that magnitude as those which we have just recited.

It has been our duty to notice, from time to time, the discovery of rocks, shoals, and the numerous dangers affecting navigation, which have been brought to light by the many excellent surveys that have of late years been carried on, but it has scarcely ever fallen to our lot to record such extensive changes as those above mentioned, and it ought to impress on us most forcibly, the propriety keeping up a strong surveying staff, and having them constantly employed in our rivers, and channels, and harbours, &c., not only for the safety and preservation of our mariners, but also for mapping from time to time, for other purposes, the alterations which take place in the beds of our rivers, and navigable waters, as connected with any alteration of their banks, &c., the changes which are peculiar to certain localities, or which arise from the renewal of obstructions, and, in fact, of all manner of phenomena, connected with tidal waters, which can throw light upon the present obscurity in which the subject of artificial disturbances of their stream is involved.

This kind of information is acquiring an importance, which is not, perhaps, sufficiently known, but which is daily becoming more evident from the engineering works continually going on, and by the boldness of the schemes which are daily projected. Information, which according to the careful manner in which the surveys of the present day are conducted, is worthy of the utmost confidence.

It will be for the Tidal Harbour Commission, to classify and compare cause with effect, and deduce conclusions from the mass of materials which will be submitted to them, in addition to those which they may gather around them; and it need scarcely be stated, that too much care cannot be taken in forming any system upon which they may determine to act, for

as this Board is to be the great conservator of all the Rivers and Tidal Harbours of Great Britain, doubtless its members will weigh well all informations, and work upon sure grounds.

We shall conclude with a hope, that the next meeting of Parliament in framing a bill for this Board, will apportion the number of its members to the vastness and importance of the labour that will fall to their share; and we may be allowed to express a hope, also, that whilst we have so enlightened and indefatigable an Hydrographer, who has raised our Hydrographic Department to the highest pitch, it is, perhaps, capable, whilst we have so eminent a scholar and navigator at the head of this branch of the naval service, we hope the country will keep up a scientific establishment worthy of his talents, and of the importance of the benefit the country, and the world at large, will not fail to derive from the full exercise of his powerful mind.—ED. *N.M.*

AURORA BOREALIS,—ROYAL HARBOUR OF RAMSGATE.

PERHAPS there are few places so beautifully situated for observations on Celestial phenomena as Ramsgate. This has been remarked by Professor Ince and others many years ago. With almost a total absence of night fogs or haze, from the dry nature of the soil and the clearness of its surface from contiguous woodlands, no lofty mountains in its rear, and an aspect entirely open to the south-eastern sky, bounded by the sea horizon; we have only to walk to the pier end, and we see, as from the deck of a ship, three-fourths of the outspread firmament laid open to our view. From this position I am in the habit of watching the different atmospheric currents, as evidenced by the clouds traversing in varied courses, at different elevations from each other; and it often proves instructive as well as amusing, in enabling me to judge in some degree, of the probable duration of a storm, and that quarter of the heavens in which its subsiding powers will terminate; for instance,—in the heavy storm of Saturday the 23rd of October, which increased gradually during the day from the south-west quarter, I observed that while the lower and flew swiftly in from S.W., the upper strata of clouds were sailing over and athwart them from N.N.W., and it should always be observed that, their increased distance must be allowed for in any estimate of the velocity of the current of air which propels them, for the nearer the observer, the greater will be the apparent speed of any object crossing his line of vision. At 9h. 30m. P.M. the gale was terrific from S.W., and the tide rose rapidly till its vertical rise of 18 feet exceeded greatly its average column. By this and the day's observations, I warned several mariners and friends that an almost immediate change might be expected.

About 10h. 30m. P.M., the wind suddenly flew into the north with torrents of rain, then N.W., and before morning had settled in the west with fine weather. On Sunday morning I observed the upper strata of

clouds still keeping their steady course from N.N.W., while the lower scud increased in rapidity from the west with a fresh gale. While looking at the upper clouds I observed a still loftier vapoury scud shooting over from the north, at times bright and fleecy, at others a mere long alternate streak scarcely perceptible. I did not dream of the Aurora, but afterwards I felt satisfied it was that passing meteor. About 7h. P.M. I saw that the whole northern line of sky possessed an unusual phosphoric gleam when contrasted with the full moon which was shining in all its splendour, and from 8h. 30m. till nearly midnight the Aurora surpassed in magnificence anything I have ever seen, except on one occasion, when cruising in the armed cutter *Hero*, upon the north coast of Norway, in the year 1808. (If Captain J. Reynolds, R.N., is living, he will remember that very extraordinary night.)

I will now describe its appearance at Ramsgate on the 24th of Oct. It streamed out of the sky from N.W. to N.E., towards the zenith, flickering like pale gaslight at its source, and gradually deepening as it rushed into the firmament, till it assumed so deep a crimson at times over head, that our pier light which is a brilliant red with catoptric lenses and reflectors, paled into an orange colour, beneath it; the moon's brilliancy had no effect in dimming the lustre of the Aurora, it advanced and retired within a few degrees of her disc, while every star and constellation above it, was seen as through a thin gauze.

When its streams reached their greatest altitude they began to fade away, while others shot upwards into the sky to supply their place, and I remarked that previous to their retiring, each stream was crossed by very beautiful scintillations of a brighter hue, having some resemblance to the rapid transmission of the electric fluid in a glass cylinder, or along the wires in a Lecture room.* This beautiful phenomenon must have been very brilliant at a distance which would lower the altitude of the land in a northerly direction, and I hope we shall see some notice of it in the pages of the *Nautical* from some one of our scientific brethren, who had an opportunity of watching its effects. I did not perceive any influence exerted on the compass needle, but such influences, have been remarked at sea; and the mariner cannot be too much upon his guard in northern latitudes, when he remembers, that his ship is isolated, upon a fluid surface, very different in its properties as regards attraction or repulsion from electric cause and effect, from those which exist on *terra firma*. I had not in my possession any instrument sufficiently sensitive to decide this question. Now, as to the prognostics of so brilliant an Aurora, of course throwing overboard its omnious indications of war and bloodshed, which alarm the ignorant and superstitious, for, be it remembered, it has continuous existence in Polar regions where no battles can be fought! Well then, in lieu of admiring its beauties, many were croaking, and looking at the dark side for a hard and distressing winter! Surely

* These scintillations are called by the Norksmen and Scotch "*The Merry Dancers*".

agreeably with the laws of Nature, whose beautiful compensations are continually administered by an unerring, Almighty, and creative hand, it might give us hope of a reverse to so desponding a picture! Expansive aerial currents are the effect of which an increase of warmth and rarefaction are the cause! *Ergo*. This Aurora may have been sent into our latitudes by an increase of temperature in the Polar regions, and if so, we may expect a mild, in lieu of a severe, winter.

November is here, and the sun shines gloriously, my thermometer 3° above temperature in the shade, and the barometer still ranging high, which it has done ever since the 24th of October, when the atmosphere was lit up by a messenger, which should awake in us the pious trust, "That the heavens display (the mercy as well as) the glory of God, and the firmament sheweth his handy work". I have had several applications as to the cause (philosophically) of the curious Mirage described in your September number, and whether it is not of rare occurrence; the reflection of images by atmospheric mirrors is of rare occurrence, but at the same time no less certain than the parhelios (or mock suns) in the higher regions of the atmosphere; or the optical illusions described by our amusing and highly instructive friend Peter Parley, to the rising generation. I believe there are comparatively few who notice any changes in sea or sky! Our pockets in these days of struggle, and our politics absorb all our faculties, and it is well and happy for those who can devote some spare moments to intellectual pleasures and pursuits.

K. B. MARTIN, *Harbour Master*.

THE AMPHITRITE AND TRINCOMALEE.

The trial between these razeed frigates was a special one, in order to ascertain as far as possible whether White's bow possesses any of those material advantages over the old bow which has been alleged it does. The Amphitrite has had White's bow given her; the Trincomalee remains as she was built. The following is the result:—

On the 10th, the ships tried rate of sailing on a wind, commencing at 8 a.m.; wind S.W., under royals, flying jib and whole topsails on the starboard tack. At 8h. 30m. a.m. the Trincomalee from the Amphitrite, S. 10° W. 750 yards; both ships close hauled on the starboard tack, and ordered to chase S.W., the direction of the wind: considerable swell from N.W. At 9h. the Trincomalee from the Amphitrite, S. 20° E., was 1,200 yards. At 9h. 30m. the Trincomalee from the Amphitrite, S. 19° E. 2,000 yards. At this time both tacked, and at 10h. 30m. a.m. their position from each other was—the Trincomalee from the Amphitrite. S. 1,300 yards. At 11h. a.m. the Trincomalee from the Amphitrite, S. 75° W. 1,500 yards; at noon Trincomalee from Amphitrite N. 35° W. 1,800 yards; consequently, the Trincomalee had fore-reached 1,800 on the

Amphitrite, but the latter had weathered nearly half that distance on her opponent. At noon a dense fog put an end to the trials, and the ships were recalled by fog-signals.

Second Trial.

Oct. 11.— Wind west, moderate breeze; heavy swell from the N.W.; Amphitrite and Trincomalee tried rate of sailing, with the wind quarterly, steering S.E., with all possible sail set. At 10h. a.m. Amphitrite from Trincomalee S. 45° E. 4,000 yards. At 11h. a.m. the Amphitrite from Trincomalee, S. 38° E. 3,400. At noon the Amphitrite from Trincomalee, S. 36° E. 5,400 yards. At 1h. p.m. the Amphitrite from Trincomalee, S. 39° E. 5,000 yards.

At 2 p.m., Amphitrite from Trincomalee, S. 38° E. 5,300 yards
3 " " " " S. 35° E. 7,000 yards
4 " " " " S. 36° E. 5,600 yards

Thus ended the second trial, the Amphitrite beating the Trincomalee by about half-a-mile in a run of six hours, and log distance of 40 miles. The breeze during the trial freshened and lulled occasionally, which may partly account for the discrepancies in the distances.

Third Trial.

Wind west, moderate breeze, N.W. swell, ships under whole top-sails, top-gallant sails, royals, jibs, spanker and courses, close hauled, and ordered to chase to the westward.

At 9 30 a.m. Trincomalee from Amphitrite N. 80° W. 1,200 yards
10 " " " " N. 20° W. 1,600 yards
11 " " " " N. 34° W. 2,250 yards
Noon, " " " " S. 70° W. 1,100 yards
1 p.m. " " " " S. 70° W. 2,100 yards

Tacked together and stood to the southward and westward.

At 1 30 p.m. Trincomalee from Amphitrite S. 78° W. 2,500 yards
1 45 " tacked together and stood to the northward
2 p.m. Trincomalee from Amphitrite S. 50° W. 3,300 yards
3 " " " " S. 5° W. 3,700 yards
4 " " " " S. 15° W. 4,270 yards

Recalled by Signal.—The Trincomalee, during the trial of six hours and a half, had weathered on the Amphitrite 3,300 yards, the latter having fore-reached on the former during the same time 3,500 yards. In the first trial the Trincomalee fore-reached on her adversary, but the latter had weathered on her opponent. In the second trial Amphitrite head the Trincomalee; in the third trial Trincomalee weathered, the Amphitrite fore-reached. On the first day's trial, after the general recall had been made, the Trincomalee was observed to miss stays.

SOCIETY ISLANDS, SOUTH PACIFIC.

Letters have been received announcing the official declaration of the independence of the Society Islands. The following is an extract from a letter, dated Borabora, May 17:—

“ I am happy to inform you, that the people of Borabora are at length assured of the independence of this island, and of all the leeward group.

“ Her Britannic Majesty's ship *Grampus*, Capt. Martin, arrived here on the 4th of this month, and she is still at anchor in the harbour.

“ On Saturday, the 15th inst., the French steamer *Gassendi* brought back the native adherents of the French from Tahiti. They were allowed to land in peace, and are now repairing to their respective localities in the settlement to rebuild their houses.

“ The steamer brought official documents from Admiral Sir G. Seymour, conveying the final decision of the French and English Governments. Our chief, Tapoa, who accompanied Pomare to Tahiti, is still there, but is expected to return shortly to his own land.

“ I send annexed the copy of a letter written by the chiefs to Captain Martin, on receiving the above documents, and his reply:—

“ *To Captain Martin, of Her Britannic Majesty's Ship Grampus.*

“ *Borabora, May 12th.*

“ Peace be to you from the True God.

“ This is what we have to say to you:—It has frequently been reported here that our lands will become independent, and not be included in the Protectorate. With these reports we are much pleased, rejoicing in the thought that we shall not be under the Protectorate.

“ We now think that if our independence is obtained, we shall be left to ourselves. And this is what we want—that Britain should protect us, our country, our people, and our religion, that we may not in future be troubled. We are afraid of any other powerful kingdom; and on that account we desire you to come and protect us for ever.”

“ This letter was signed by the Regent on behalf of Tapoa, and by all the principal chiefs.

“ The following is the reply of Capt. Martin:—

“ *To Teriimaevaua, and the chiefs Tevivi, Haapoua, Tianoa, Tacaetue Pa, Mare, Huriai, Raitabu, Tehuiari, Reo, Buti.*

“ *H.M.S. Grampus, Borabora, May 12th,*

“ Peace be to you.

“ I have received your letter of the 12th day of May, and this is what I have to say to you in reply:—

“ It gives me great satisfaction to relieve the anxiety with which you have so long and so patiently waited for the decision of the Governments

of England and France, respecting the independence of Borabora and the neighbouring islands.

"I am now able to communicate to you that your completed independence will be acknowledged.

"In order that you may live in peace, you must not concern yourselves with the affairs of Tahiti, nor must not permit yourselves nor your people to excite the Tahitians to rebel against the Protectorate. Thus you will I trust continue on friendly terms with the French, as with other nations.

"England will not forsake you. She will watch with interest your improvement and progressive advance towards civilization, and the English Admiral will send his ships to visit you as often as their other duties will permit.

"In conclusion, I advise you to cultivate your lands, to educate your children, and to strive by honesty, industry, sobriety, and by steady adherence to the religious truths which the missionaries have taught you, to improve the moral and social condition of yourselves and your people.

"I am your sincere friend,

"H. B. MARTIN.

"This letter, as might be expected, gave much pleasure and satisfaction to the people, and I hope, has, filled them with joy and gratitude.

"Those who went over to the French are again the subjects of Tapoa, and will, we trust, in future live in peace, and in the observance of the laws of the country. They all attended Chapel yesterday, with their children, about 100 in number, and, perhaps, a ninth or tenth of the whole population. After being landed, the French authorities gave up all claim to the island."

ON THE SOLUTION OF THE PROBLEM FOR NAVIGATORS.

Bovisand, near Plymouth, 20th October, 1847.

SIR.—I sent for insertion (see *Nautical Magazine*, vol. 1846, p. 548,) a "Problem for Navigators to solve," which has received a correct solution by Mr. John Burnett; as my object in forwarding the problem was merely to draw the navigator's attention to some facts that are not so well understood as they should be, I now beg to offer a few remarks.

Although Mr. Burnett has offered no observations, his solution of the problem, in your October number, page 546, shews that the Mercator's course of "east or west", for a distance of 187,55 miles would lead a ship from one mountain to the other, and this course, steered by the compass, would cut all the meridians at right angles.

But if the helmsman shaped his course by the *eye*, steering on a straight line from peak to peak, the distance would be shortened, and *this course* would cut all the meridians at different angles, and if the compass course were noted during the passage they would differ among themselves about

7° 22', although the direction of the ship's keel remained constant. The Mercator's course from mountain to mountain is either east or west.

The great circle course is either N. 86° 19' W. or N. 86° 19' E. (rejecting seconds) consequently the Great Circle bearings of the peaks and compass bearings are the same.

The following practical results are obtained from the solution of problems of this kind.

1st.—That compass bearings, taken between distant objects (as from Mount Ida to Mount Athos) are never diametrically opposite bearings, unless the objects themselves be upon a *meridian* or upon the *equator*; therefore such bearings are not applicable for shaping a course by compass nor for finding the variation.

2nd.—Whenever the mariner *can see a distant object*, and puts his ship's head towards it, he adopts the great circle tract and abandons that of Mercator.

His *eye* and not his understanding, informs him he is adopting the nearest route to his destination: he steers, as a crow would fly, direct to the object ahead, and if he can see it, the wind being ahead, he puts his ship upon that "tack" which approaches nearest to the direct course, but when his place of destination is so distant that he cannot *see it* by reason of the earth's rotundity, he at once adopt a Mercator's course, and may thereby be sailing upon the *wrong tack* with adverse winds.

3rd.—In surveying a country or a piece of water, our observations are ocular, we measure our angles by a theodolite or other instrument properly adjusted, now these angles are spherical angles, because any line drawn from the *eye* of an observer to an object upon the earth's surface is in the vertical plane of a great circle.

I am, &c.,

WILLIAM WALKER.

To the Editor of the *N.M.*

GEOLOGY OF TORRES STRAIT.

WE have been favoured with the following interesting remarks on the Geology of Torres Strait, from the pen of Mr. Jukes, the Naturalist, who accompanied the Surveying Expedition commanded by Captain Blackwood, and as the subject is intimately connected with the hydrography of that remarkable locality, we gladly give these remarks a place in our pages.

There are two geological features of some importance to the hydrography of Torres Strait and its neighbourhood.

The first is that the rocks which form the high land of the north-east coast of Australia, stretch also across Torres Strait in a narrow band, running nearly north up to the shores of New Guinea. Along this band

there rise steep and rocky islands, of precisely the same geological features as the hills of the main land to the southward. This narrow band forms a western boundary to the Great Barrier coral reefs just as much as does the dry land to the southward, since no "independent coral reefs" obtrude upon it, and the only coral-formed masses to be found in it are small "fringing reefs" adhering to the shores of the islands.

From the knowledge of this fact two questions arise: Are the reefs seen by the Hormuzeen and Chesterfield to the north-west of this band *true coral reefs*? or, are they only shoals of sand, mud, or other materials? Of what are the islands called Duncan's Archipelago composed? If these latter are not coral islands, and I believe they are not, it is probable that deep water channels (8 or 10 fathoms) may be found between or around them, unless those channels should be blocked up by the more than usual extension of the "fringing reefs".

The second feature is the sudden ending of the coral reefs of the Great Barrier to the northward, and their reluctance to approach that part of the coast of New Guinea, composed of alluvial materials and traverse, by fresh water channels. This is a well known character of coral reefs which results from the incapacity of the polypyi to live in sea water charged with mud, or at all mingled with fresh water. The nearest patch of coral to this coast, the fringing reef of Caedha or Bramble Key is composed chiefly of a different species of coral from that forming the great reefs to the southward.

Now, if the reefs seen by the Hormuzeen and Chesterfield are really coral reefs, (and the extension of the Warrior Island reef renders this probable,) a hydrographical deduction may be drawn from these facts:—namely, that none of the drainage of this part of Guinea disembogues on the coast near Talbot Island, but is all thrown into the sea to the northward of Bampton Point.

This is also rendered probable by the other fact of the rocks forming the north and south ranges of the Australian coast stretching across Torres Strait towards this part of New Guinea, since if this great rib of rocks no longer rises into hills in that country, it will at least tend to do so for some distance before its effect on the surface of the ground is utterly lost, and probably form land above the average level of the surrounding country, and thus deflect the drainage to the northward and eastward.

The fact of the Murray Islands together with Erroob or Darnley Island and Bramble Key being all composed of volcanic rocks, renders it probable that Aird's hill is also volcanic. In that case a range of volcanic hills is very likely to proceed from the volcanic range of the north coast of New Guinea and strike the south coast some where to the eastward* about 146° or 147°. These would also deflect the drainage of that

* This anticipation seems to have been realized so far as the hills go (whatever may be their nature) by the high land seen, I understand by Lieut. Yule in that neighbourhood.

country in the direction of that part of the south coast of New Guinea which lies between the meridian of 143° and 145° E.

All the *known* geological features then of Torres Strait and its neighbourhood, go to make it probable that the drainage of a very large part of New Guinea disembogues on the tract of coast indicated, and shew the reasons of its doing so.

J. BEETE JUKES.

NAVAL SKETCHES.

Sir Francis Drake and Capt. James Cook, R.N., F.R.S., &c.

IF "the proper study of mankind is man," then Biography must be considered as possessing a very elevated place in the literature of any country or age. As a varied feature of History, we do find it holding this high station, in the estimation of the world; and the reason is obvious enough:—the grand object of a man's existence, is, whilst seeking his own happiness, so to play his part, in the great drama of life, as to uphold the dignity of his nature, by the exercise of virtue, (which alone can ensure that happiness he aims at possessing,) that his actions may become examples worthy of imitation, by those who surround him, and serve as incentives to well-doing in others, who follow in the generation that succeeds him; in short, to do his duty towards God, and his fellow beings. This is the great object for which life was given; and although, comparatively, few individuals can hope to attain perfection, or to be enrolled in the list of great actors, yet every man, if he pleases, may strive to deserve commendation, by his endeavours to fulfil his duty in the sphere allotted to him. Biography, therefore, serves as a moral repository. Of the capacity of a writer, to judge of human motives, it seems necessary to offer a few remarks, for, to me it appears that in the immense field of delineation of character, a great deal of misrepresentation is to be found. We are told that "by means of biography, we call in the aid of time to remove the shadow which, while in life, prevented full knowledge of the causes upon which mighty events hinged. Thus, we are that *posterity* which the philosopher tells us, is necessary to sit in judgment on great men, to discover how far they were entitled to distinction; and gain from biography, a close and intimate acquaintance not only with personal, but with national character. We discover from this source, the key to the dark and tortuous passages in national history. When we read the lives of the actors, we learn the why, and the wherefore, of the actions; we unmask men; we discover motives."

In the majority of cases, we do no such thing; man is a riddle; and often to himself he cannot define his own motive to action; it is the aim of biography so to do, but it never has, nor never will attain to that perfection throughout its labours. Nor even auto-biography can be depended

upon; in a variety of cases, surmises, guesses, and general inferences can alone be given; and the most impartial biographer is constrained, (and repeatedly does so unconsciously,) to draw largely from the store of his own feelings, to account for motives to action, of the person he describes.

Take up any history, any biography, what do you find the narrator doing? Drawing inferences from certain facts, and giving motives, where the actor assigns none, merely from the turn or bias which the circumstances have given to *his* mind,— the actor then, is not unmasked; and so in a vast number of instances, the draughtsman's judgment is merely employed in affording us as near a likeness as the penetration of that judgment enabled him to sketch. In many cases the action is distorted, or incorrectly given, and frequently exaggerated, which must have the effect of leaving any assigned motive imperfect or doubtful.

Some of the actions imputed to Richard the Third are, to this day, considered doubtful; and the motives with which he stands charged, have even been questioned.

A case with which this paper is more immediately concerned, may be cited,— that of Drake and Doughtie; it has never been clearly made out, either to the full culpability of the former, or the innocence, or criminality of the latter; some writers considering our great sea-captain no better than an hired assassin, or pre determined murderer, whilst others censure him for undue severity, and an unauthorized stretch of power.

The whole affair, as given in early works, wears such a theatrical air, as to create no little astonishment in the modern reader. Only think of Drake, and Doughtie, dining together,— the judge with the condemned mutineer,— and drinking a bumper to each other, in “all loving brotherhood”, just before the tragical crisis! What dramatist could possibly concoct a more surprising farce?

Dr. Johnson, who wrote a memoir of Drake, (see 29th vol. of the Naval Chronicle,) appears, not to have been able to clear up the matter; he says, “how far it is probable that Drake, after having been acquainted with the design (to mutiny,) should admit him (Doughtie) into his fleet, and afterwards caress, respect, and trust him, or, that Doughtie, who is represented as a man of eminent abilities, should engage in so long and hazardous a voyage, with no other view than that of defeating it, is left to the determination of the reader.” A motive has been assigned for the execution, in a poem entitled “Leicester's Ghost.” It was said that Doughtie charged the Earl of Leicester with having poisoned Lord Essex, whose widow he married.

It is quite impossible at the present day to determine what truth there is in this shocking insinuation, or, whether it had any surer foundation than in the colour which the events gave to suspicion. How, or in what manner Doughtie could have created a mutiny it is not easy to conceive, or, “that it did by no means consist with their safety to let him live.” If we are to believe the accounts, which state that Drake was well informed of Doughtie's intentions before quitting England, it will appear

perfectly inexplicable that Drake should, not only receive him on board, but continue to be on the most intimate terms with the man who had consigned a dagger for his heart. It is stated that Drake handed over to the Court (consisting of "forty of the principal persons in the whole fleet,") which sat in judgment over the unfortunate and learned gentleman, the "letters he had received from several persons [who were they?] who much doubted his fidelity, and that not only at sea, but at Plymouth, [why not have tried him there?] not only by bare words, but writings under the gentleman's own hand: yea, several unworthy actions committed by him, tending to the overthrow of the voyage in hand, and the murdering of the General's person."

It is altogether a most mysterious affair, but it cannot be disguised, even by the greatest admirer of Drake, that some degree of suspicion rests upon his conduct. Mr. Barrow, whose life of the Admiral is the latest that has appeared, has been constrained to leave the matter as it was; but it is possible, though not very probable, that some hidden paper may yet be found that will throw some light upon the apparently dark event.

Again, take that man of blood, "Harry the Eighth;" it was not difficult for the historian to assign the motives which induced the tyrant to destroy his wives, but I think it would be difficult to conjecture what his motive was in saving Latimer from the clutches of his Court, the members of which were bent on the bishop's destruction. It is doubtful if he really had any motive: my impression is that it was mere impulse or caprice; for, horror of shedding blood he appeared to have none; his nature seems to have been extremely selfish. The despotism of our Sovereigns has gradually given way as time advanced; until it became reduced to a wholesome bearing, to the happiness of all classes of society; and we now enjoy that degree of constitutional liberty which, whilst it makes us proud of such a blessing, renders us the envy of other nations which are still groaning under the yoke of a humiliating subserviency to the absolute power of a single individual. In so far we are in advance of the rest of the world; and our most pressing care is to prevent the democratic spirit from becoming an instrument to mar the perfection of the whole.

Biography, therefore, does not appear to come up to the points which the description of it given in the first part of this sketch would have us believe, the proof is worth pursuing a little further; take the following:—

In the public career of a Civil Judge, given in an exceedingly rich and interesting work, we find a florid description of the former's eloquence, sarcasm, and cutting irony. The whole passage is so exact a description of the biographer himself that no person could possibly mistake the likeness,—the case of each might be parallel,—but it seems as if the one had sat for the likeness of the other; yet is it quite possible the portraiture may have been sketched unconsciously; for, it is more than probable, a delineator becomes so absorbed in his subject that, like the

actor on the boards, he *feels* himself to be actually the character he represents, nay, so far has this wrought upon the feelings in tragedy, that, *death*, where it was to be feigned, has really ensued! Now, in the instance above given, some readers might feel disposed to pronounce the biographer's motive for the close resemblance, to spring from vanity, just as writers are accused of "dipping their pens in gall;" whilst he may have been, and probably was, perfectly innocent of any such weakness or simple act of folly; yet it may fairly be doubted whether the peculiar idiosyncrasy of the sketcher did not influence the touches of his pencil.

To make out the full value of biography, we are told—"Thus, in the American struggle for independence, the treachery of Arnold would appear causeless, if his biographer had not told us that he was passed over when many of his comrades in arms were elevated in rank. From that hour, wounded pride lay coiled in his heart, like a serpent!" Here we have the *ipsi dixit* of the biographer given as the *motive*. It is not said that Arnold assigned that as the cause of his desertion; the assigned motive may be true, or wide of the truth; many other circumstances may have induced him to play the traitor: but the cause, whatever it may have been, is immaterial, otherwise than as a matter of curiosity, for nothing could palliate the deviation from the strict line of his duty to his country, and the respect he should have had for his own character; the actioun speaks for itself; and of so dishonourable an officer, the British Army was well rid.

To draw conclusions in the delineation of character of Public Men, from their political or parliamentary speeches on party questions, would perhaps be absurd; but on social questions a good insight into the working of the heart of individuals may be gained; as, in the latter case, men, though perhaps more guarded, are very apt to speak as they really feel; by which means, the honest and clear-headed biographer, has an opportunity of making very fair inferences as to, at least, some of the traits which belong to character; at the same time, however, it must be candidly acknowledged, that well-meaning men, in these matters, often hold very erroneous opinions; hence, it will be seen, how difficult it is to dive into the arena of that hidden abode of feeling—the heart. so as to estimate with impartiality, "the truth, the whole truth, and nothing but the truth." It does sometimes happen that the generous open-hearted man will, unconsciously, show the predominance of benevolent feelings; whilst the stringent, selfish self-love of the covetous being oozes out with rush-light glimmer, or, if urged to desperation, blazes forth taper-like to glare his characteristic blemish down to posterity! These snatches, perhaps, are more to be depended upon than writings deliberately and guardedly penned; and, in our day, the exceedingly clever reporters are so well skilled, and so perfectly practised in their observations of human nature in all its various and varying colours, and the working of the passions, sentiments, and feelings of Public Men, that many of them could sit down and sketch character most graphically, and with truth-telling exactness.

In the public walks of life, there are four generally governing springs to action:—1. Patriotism or Loyalty, embracing the strictest integrity of principle; which is essentially virtuous. 2. Ambition, which led by the former, and kept within due bounds, is a feeling that aspires to high deeds; but it is liable if not conjoined to the other, to be greatly perverted. 3. Self-interest, which in a public character is vicious, and often so in private life. 4. A love of notoriety, which is vanity. Applause can only permanently attend on the action which is based on the first; if it were not so, the Bandit, or the Sea Rover who performs a skilful and gallant feat, would claim and receive the palm because he wins; and it is equally clear that talent alone will not insure renown to its possessor.

I have purposely led the reader into this train of thoughts in order that he may approach the subject of this paper with the necessary caution. The voice of Posterity has been considered the best to decide on the character of Public Men, because there are no conflicting struggles between partialities and dislikes necessarily attending it; but, as human improvement is progressive, and the manners, customs, and sentiments vary greatly in different ages, allowances are called for, and should be made, in a fair estimation of motives to action.

A string of names of persons deceased, with short biographical notices, repeatedly appear in the periodicals of the day,—noble and plebeian,—followers of arms, of the arts, the sciences, &c.; but this is a mere streak with transitory rays throwing a doubtful light around it for an instant; the next month it is lost sight of and forgotten by the world in the busy round of its occupation.

A man of any station must leave some evidence of a claim to the estimation of posterity out of the common run of characteristics—great virtues, positive or negative, however, appear often to be less remembered than great vices. A Caesar and a Napoleon owe their fame to the glitter of their martial deeds, to their ambition rather than to any virtues which they possessed or practised; had they been merely distinguished from the latter, it is probable the opiate of forgetfulness would have consigned to the shade of oblivion their names.

Apart from the natural curiosity which it excites, the evident utility of biography consists in the examples which it offers, when honestly written, for following good and great, or shunning bad and mean actions. But, candour is not always found guiding the pen. In contemporary memoirs, after death has removed the person from the stage of his acting, there is often found a disposition to gloss over error, or excuse imperfection, and to over-rate and fulsomely laud excellencies. These are the faults which it is the province of an imparital posterity to correct; yet it is not always attended to, for we find writers running into opposite extremes—men are transformed into demi-gods or into demons. When we hear it said that “tears” were shed by “his country” for the departure of some noted character, we must take it as a mere figure of speech; a flourish; the world at large sheds “crocodile’s tears” only!

It is a difficult matter to draw a comparison between the character of

two such noted seamen as Cook and Drake; their common pursuit was alike, but the incidents marking the career of each were in a great measure different. Both rose by dint of energy, talent, and perseverance, from middle life to very exalted stations. Circumstances were propitious to both, but the aspect of those circumstances gave a dissimilar turn to the prosecution of their bent. In disposition there seems to have been but little difference, both appear to have been humane; kind in their conduct towards those who were placed under their command. The case of Doughtie would seem to negative Drake's kindly disposition—it is a mysterious circumstance, and we have no clue to disentangle it from its sanguinary character; apart from that, the general testimony is in his favour. Where there is a cause for violence, necessity often compels a line of conduct which can only be justified by the imperative force of that necessity. By saying this, I by no means desire to excuse Drake in that affair, but it applies to the instances where Captain Cook was compelled to fire upon the natives of the islands of the Pacific. In Elizabeth's time, summary punishments, even to the deprivation of life, were permitted in the Navy, by the judgment of the Admiral. Now, in what light are we to consider Drake's ship? A privateer or a man-of-war? He is said to have held a commission from the Queen; did that place in his hands the same power vested in the Commander-in-Chief of the Navy? In an account of his voyages, published 1739, 13th edition, there is this passage: "After the verdict was given to the General, to whom the Queen had committed the Sword of Justice, for the safety of himself and Company, with this expression: "*We do account that he which strikes at thee Drake, strikes at us.*" The value of it I leave to the judgment of the reader.

It is evident that a fair comparison cannot be drawn between the two seamen; more than two hundred years had elapsed between their times; contemporary characters can alone be pitted one against the other, because they breathe in the same atmosphere of morality, &c. The maritime state of England was not alike in both eras. In Queen Elizabeth's day there was a paucity of naval bred officers; and any man who had followed a sea-life, and made himself conspicuous by his abilities, or his martial spirit, had little difficulty in obtaining an introduction into the Royal Marine Service, in the upper ranks.

It was very different in Cook's time, there were then plenty of aspiring individuals bred up in the regular service, with interest to back them. The selection of Cook was much more complimentary, and infinitely more flattering to his self-love, than the Queen's patronage of Drake, although the peculiar merit of the man was great, as his skill and bravery sufficiently attest in the memorable dispersion of the "Invincible Armada," and many other minor, but less remarkable, events in which he figured.

They were both eminently useful to their country, in the opposite pursuits of war, and peace; and both, although they may be estimated differently, whilst the pages of History last will be remembered for their deeds. They were both remarkable men. As circumnavigators they

will remain unrivalled, Drake, as the pioneer, Cook, as the reaper; though, if we throw aside national prejudices and partialities, the claim to the admiration of the world must rest with the memory of Magellan, notwithstanding he did not live to complete the circuit. His ship however, achieved the victory.

Captain Cook, it must be remembered, had a much wider field of action before him, than it was the object of Sir Francis Drake to follow, and the intrinsic value of his three voyages is eminently greater than the single performance of the latter seaman.

Drake's enterprise was his own act, and for his own especial interest; his motive therefore, necessarily belongs to self. Cook, was under direction from authority, but he could not have entered into the pursuit had he embraced it solely for his own aggrandizement, with more zeal than he displayed; that he was encouraged by the anticipation of the fame which would attend the successful issue of such a responsible undertaking, it is reasonable to believe; but that being in its contemplated results, national, nay, universal, and for purposes apart from gain, the merit attached to it is somewhat different from that which belonged to the commander of the *Pelican*, otherwise "*Golden Hind*."

It is, therefore, natural to conclude, that the celebrity of Cook, rests on a firmer foundation than that of Drake, who though the first *Englishman* to make the circuit of the Globe, was not the first *European* who had performed such a remarkable feat, he having been preceded by Sebastian Cano.

This is looking at the broad question, and the springs of action upon which the entire merits of either party, with reference to the expedition, must be based. But, if we take the *abstract* exclusive excellence of the circumnavigation, which may lay claim in either case, to be the first in the admiration of the world,—upon a perfectly fair and equitable review of *time* (especially) and *circumstances*, without robbing one leaf from the chaplet encircling the brow of the Georgian Captain;—may it not be awarded to the Elizabethan Knight? The act does not appear to have been a pre-determined resolution before quitting England; it is said to have been adopted after Drake had failed in finding a passage home to the north-east, from the north-west coast of America, which he had discovered, and called "New Albion," now known as Oregon.

If Drake had no authority from the Queen, in her "gracious" commission to wage war against the Spaniards, our present notions of justice would lead us to brand him with the epithet of "Pirate," as, indeed, he has been so long since; but supposing, which is not improbable; that he was privately instructed to make "reprisals" on the Dons, who were not over-scrupulous in their conduct towards English vessels, would it amount to any thing more than one of those strokes of policy which have been said to be venial? It is scarcely credible that his object was unknown to the Queen and the authorities before he sailed; and if so, then they were as culpable as the adventurer himself. The Queen's conduct on his return, gives some colour to this view of the case; she

feigned displeasure, at first, but after awhile, her embarrassment, if she really felt any, gave way, and she not only visited the enterprising seaman's ship, but in admiration of the feat he had performed, knighted him, and thus proclaimed to the world that she really did not disapprove of his conduct. It was an acquittal of the wrong done, but posterity will not accept it as such: and why? Justice is so exalted a feeling — the main spring of all that is noble in our nature, that even they, who do not practise it, acknowledge, and admire it. But whilst allowing this as a universally admitted principle, we must not disguise from ourselves, that in the age of the last of the Tudors, wherein this great sea-captain flourished, there was a tincture of the savage still clouding its refinements.

That species of resentment which goes under the denomination of "revenge," was not then tempered by magnanimity; nor was that open and more manly sense of injury, which in our times has obtained, of distinctly declaring war, in order to try the justice of a case, by an appeal to arms, resorted to; but petty retaliations were practised upon the Spaniards for the tyrannical and oppressive conduct pursued towards the English.

It behoves us, therefore, to measure our censure according to the actual state of the manners and feelings of that age. Unless we do this, we shall be applying the lash to transgressions (which were hardly so considered in the day of their occurrence) by the standard of refinement of our times: a standard, though very far from perfect, is assuredly much more humane and national, than that of the former age. It is true, that society does still show, like a chess-board, a chequered face of black and white; but one step at least towards amendment has been gained, — a just sense of what is moral, and what is not, and this is generally diffused throughout the community, from the sovereign to the peasant; the observance of what is right has increased, and is increasing. Civilization, which begets elevated feelings, with corresponding action, has been progressively slow: the human mind, and the sentiments of the heart, so to speak, require to be purged as well as strengthened, and like everything where change is to effect a revolution, demands time. Still, notwithstanding the strides which knowledge has taken, we have prejudices which it is difficult to shake off, and even with the vast accession to our power of reasoning, we find it difficult to turn, in appliance, the view of the present from the retrospection of the past, so as to reconcile the appearances of irregularity of the latter, with the juster notions of right and wrong, that govern our actions, whilst breathing a wholesomer atmosphere of morality.

The Spaniards, a potent nation in the 16th century, were not slow in using violence towards the English, or any other people, whose spirit of enterprise led them into the West India Seas. Their grasping policy, and intense jealousy of their newly acquired possessions, induced them to commit those acts; and whatever may have been the law of nations acknowledged in those days, it is certain that the common courtesies

which have been since universally exercised, were held very loosely by those powers, whose naval strength gave them confidence upon the ocean; and the English, and the Spaniards, especially, paid no sort of attention to that mutual forbearance and civility, which are in vogue among the maritime nations of the present day. There were, no doubt, grave faults on both sides. The maritime supremacy of England, was about to be realized, and there was at the time a spur to action, from a chivalrous spirit pervading the aristocratic classes, but it seems to have been rather a tinsel show, than the display of the pure ore, of a just and noble bearing; the morals of the day not being over scrupulous in their action.

There was, too, an active spirit of enterprise abroad; the gold and silver of the new world had excited the cupidity of others, besides the Spaniards, and the "El Dorado" of the west, was eagerly sought for by daring adventurers elsewhere, than in the position which Raleigh's penetration had fixed it.

The dreadful domestic or social scenes — the monstrous struggle between intolerance, and innovation which had attended the reformation in religion, to the disgrace of the national character, had indeed outlived its sanguinary time, and re-action was gradually effacing from the minds of men, the bloody stain with which those sad events had tinted their hearts,

But the refinement seems to have been more specious than real; the filtre of protestantism, like a fine sieve, separated the smaller particles of religious error, but left much of the gross rubbish of moral ill behind. Faith in the Trinity, remained the same, forms and observances were raked and separated, and both parties claimed to be essentially christian, with more of declamation than practice. But whatever of good may have been anticipated as likely to result ultimately from the separation, the antagonist poison still rankled in the hearts of the two sects, who, whilst acknowledging one common origin; cherished no brotherhood, in spirit, or in feeling.

There were two elements of man's weakness in active operation at the time; the Spaniards' intollerant jealousy of monopoly, and the opposite desire to share, of the Englishman: the grasping principle of avarice being common to both parties.

It is not then to be wondered at, that with a lax morality, and an inordinate thirst for gold, with sleepless vigilance on the one side, and a bold, fearless, and determined resolution to share on the other, should have engendered strife.

However, apart from the coast forays, and other desultory displays, — *à la boucanier*, — Drakes circuit of the world was one of great merit. He was unquestionably a prime seaman, skilful in the science of the navigation of his day, and as bold and daring a spirit as ever commanded a ship. No common enemy had ever instilled into the heart of the Spaniard so universal a dread as the very name of the "Dragon" did; and if he could have inflicted his chastisements upon the perpetrators of the wrongs that were heaped on his countrymen, always in a legitimate way, posterity would have dealt less harshly with him than it has.

Cook's pursuit having been one solely of peace, opened a scene, the consequences of which were very different from any which had preceded it; the universal sympathy of Europe was gained, and the interest has not yet subsided, and will never, whilst a single native of the islands remains unconverted. His untimely and tragical death, too, will ever be remembered with regret. Drake died of disease off the Spanish main, the scene of some of his exploits.

It may not be uninteresting at this moment to give an extract or two from the old book, before mentioned, to show, as far as the first discovery and the taking possession of New Albion or Oregon, the right of England in claiming that part of the American Continent, which has been the dispute between her and the United States.

"June the 5th, they were driven by the winds toward the shore, which they then first descried and anchored in a Bay." The winds continued so violent, however, "that not being able to stay here, nor get farther northward, * * * * they were forcibly carried southward from *forty-eight* to *thirty-eight* degrees, where they found the land low and plain, with some few hills covered with snow."

"The General (Drake) not knowing what advantage it might bring in time to his own country; therefore in the name and for the use of Queen Elizabeth, he took the Sceptre, Crown, and Dignity of the Land upon him."

Drake repaired his ship in a convenient harbour, remaining there from the 17th of June to the 23rd of July, (1579.) "Before they went hence, the General caused a monument to be erected, signifying that the English had been there, and asserting the right of Queen Elizabeth, and her Successors, to that Kingdom, all engraven on a plate of brass, and nailed to a great firm post, with the time of their arrival, the Queen's name, and the free resignation of the country by the King and the people into her hands, likewise his picture and arms; and underneath the General's arms."

"The Spaniards had never any commerce, nor ever set foot in this country."

The latitude of Drake's anchorage is given as 38° N., and it is supposed to be the harbour called by the Spaniards "Port Francisco," but probably not in honour of the discoverer. On this subject, Mr. Barrow says: "Thus we may observe that this portion of the west coast of America was indeed discovered, and taken possession of in the usual manner, by an Englishman, in the name of his Sovereign, full two hundred years before the United States of America had any existence; and yet they have the modesty to lay claim to it on the assumption that an American discovered it some few years ago."

POSITIONS ON THE ARC OF A GREAT CIRCLE.

Positions on the arc of a Great Circle passing through Innistrahul Island in lat. $55^{\circ} 26' N.$, long. $7^{\circ} 14' W.$, and the Island of Bellisle in lat. $52^{\circ} 1' N.$, and long. $55^{\circ} 19' W.$, at every 5° of longitude.

Positions.	Latitude.			Longitude.			Courses.			Distance.	
	°	'	"	°	'	"	°	'	"		
Innistrahul	55	26	0 N.	7	14	0 W.					
1st westward	55	46	18	10	0	0	N. 77	47	13	95-95	
2nd	56	12	50	15	0	0	81	0	44	169-76	
3rd	56	26	56	20	0	0	85	9	17	166-94	
Highest Lat.	56	29	33	23	18	31	}	88	9	52	165-75
4th	56	28	52	25	0	0					
5th	56	18	42	30	0	0	S. 86	30	10 W.	166-36	
6th	55	56	9	35	0	0	82	19	15	168-82	
7th	55	20	50	40	0	0	78	13	1	172-92	
8th	54	31	41	45	0	0	74	4	49	179-18	
9th	53	27	31	50	0	0	70	0	25	187-61	
10th	52	6	44	55	0	0	}	65	52	5	211-60
Bellisle	52	1	0	55	19	0					

True Spherical distance $28^{\circ} 4' 38''$ —to 1684.63 miles . 1684.64

Course by Mercator's Sailing, S. $83^{\circ} 8' 49''$ W. distance 1718.04

Saved by sailing on this Arc 33.40 miles

Positions on the Arc of a Great Circle passing through Cape Clear in lat. $51^{\circ} 26' N.$, long. $9^{\circ} 29' W.$, and Cape Race, Newfoundland, in lat. $46^{\circ} 40' N.$, long. $53^{\circ} 8' W.$, at every 5° of longitude.

Positions.	Latitude.			Longitude.			Courses.			Distance.	
	°	'	"	°	'	"	°	'	"		
Cape Clear	51	26	8 N.	9	29	0 W.					
1st westward.	51	46	27	15	0	0	N. 84	19	28 W.	206-62	
Highest Lat.	51	51	33	19	28	16	}	88	27	8	185-45
2nd	51	51	28	20	0	0					
3rd	51	43	46	25	0	0	S. 87	37	25 W.	185-72	
4th	51	23	8	30	0	0	83	41	30	187-68	
5th	50	49	11	35	0	0	79	47	6	191-34	
6th	50	1	12	40	0	0	75	53	38	196-76	
7th	48	58	9	45	0	0	72	5	2	204-89	
8th	47	38	49	50	0	0	68	18	56	214-68	
Cape Race.	46	40	0	53	8	0	65	17	33	140-72	

True Spherical Distance $28^{\circ} 33' 52\frac{1}{2}''$ —to 1713.86 miles 1713.86

Course by Mercator's Sailing S. $80^{\circ} 31' 49''$ W. Distance 1738.4

Saved by sailing on this Arc. 24.54 miles

Positions on the arc of a Great Circle passing through Tory Island in lat. 55° 16' N., long. 8° 16' W., Cape Race in lat. 46° 40' N., long. 53° 8' W., and Maternillo Bank in lat. 27° 45' 30" N., and long. 79° W. at the Northern extremity of the Gulf of Florida, at every 5° of latitude.

Positions.	Latitude.			Longitude.			Courses,	Distance.
	°	'	"	°	'	"		
Tory Island	55	16	0	N. 8	16	0	W.	
1st westward	55	17	4	10	0	0	N. 88	56 7 W. 59·24
Highest Lat.	55	17	6	10	23	6½	S. 88	15 7 W. 171·04
2nd	55	11	52	15	0	0		
3rd	54	54	17	20	0	0	84	10 9 172·78
4th	54	23	51	25	0	0	80	3 26 176·18
5th	53	39	56	30	0	0	76	0 18 181·55
6th	52	41	24	35	0	0	71	58 30 189·12
7th	51	26	52	40	0	0	67	59 85 198·87
8th	49	54	9	45	0	0	63	59 54 211·47
9th	48	2	9	50	0	0	60	22 8 226·53
Cape Race.	46	40	0	53	8	0	}	56 30 22 245·72
10th	45	46	33	55	0	0		
11th	43	4	55	60	0	0	52	57 88 268·31
12th	39	53	23	65	0	0	49	33 0 295·20
13th	36	7	55	70	0	0	46	20 30 326·55
14th	31	44	55	75	0	0	43	24 23 362·0
Maternillo Bk.	27	45	30	79	0	0	41	1 20 317·33

True Spherical Distance 56° 41' 36"—to 8401·6 miles 3401·89

Course by Mercators Sailing S. 61° 57' 5" W. Distance 3510·04

Saved by Sailing on this Arc. 108·15 miles

True Spherical distance from Tory Island to Cape Race, is 28° 58' 9" = to 1738·15 miles by Mercator's sailing S., 72° 43' 40" W., distance, 1771·57 miles, being 33·42 miles greater than the Spherical distance.

In sailing on the above arc, or either of the two preceding, a due regard to the season must be kept in view, which no doubt the prudent navigator would attend to. These tracks being more or less impeded by ice for several months in the year particularly in the western portion of them.

Positions on the arc of a Great Circle passing through the Island of Trinidad in lat. 20° 31' S., long 29° 20' W., and the Island of St. Paul, in lat. 38° 47' S., long 77° 52' E., at every 5° of longitude.

Positions.	Latitude.			Longitude.			Courses.			Distance.				
	°	'	"	°	'	"	°	'	"					
Trinidad.	20	31	0	S.	29	20	0	W.						
1st eastward	24	0	40		25	0	0	S.	48	55	31	E.	319.07	
2nd	27	40	32		20	0	0		50	50	10		348.10	
3rd	30	56	32		15	0	0		53	9	3		326.82	
4th	33	49	11		10	0	0		55	43	18		306.51	
5th	36	19	39		5	0	0		58	30	15		287.90	
6th	38	29	12		0	0	0		61	20	28		270.23	
7th	40	19	25		5	0	0	E.	64	32	10		256.34	
8th	41	51	42		10	0	0		67	47	51		244.13	
9th	43	7	12		15	0	0		71	9	19		234.05	
10th	44	7	12		20	0	0		74	33	17		225.39	
11th	44	52	35		25	0	0		78	1	37		218.60	
12th	45	23	58		30	0	0		81	33	52		214.94	
13th	45	41	52		35	0	0		85	7	48		211.62	
Highest Lat.	45	46	44		39	18	35		}	86	42	41		209.44
14th	45	46	35		40	0	0			N.	87	43	32		209.65
15th	45	38	15		45	0	0			84	8	24		211.66
16th	45	16	38		50	0	0			80	34	38		214.89
17th	44	41	25		55	0	0			77	5	7		220.27
18th	43	52	10		60	0	0			73	35	31		227.38
19th	42	47	55		65	0	0			70	30	17		236.42
20th	41	27	55		70	0	0			66	53	43		247.32
21st	39	50	50		75	0	0			64	23	18		146.24
St. Pauls	38	47	0		77	52	0							

True Spherical Distance $89^{\circ} 47' 29''$ —to 5387.45 miles 5387.63

Course by Mercator's Sailing $S. 78^{\circ} 49' 48'' E.$ Distance 5657.65

Saved by Sailing on this Arc . . . , 270.02 miles

By laying down this arc of Great Circle on Mercator's chart, it will point out to the navigator the shortest route between the above two positions. It may not, however, be prudent to advance on this arc so far as the highest latitude, but the courses from Trinidad eastward, being steered until reaching as high a latitude as it may be safe to run down, the easting in, a considerable portion of the 270 miles will be saved, and approaching St. Paul's the courses on the arc should be followed again.

YACHTING INTELLIGENCE.

Royal Mersey Yacht Club.—The Members of this Club met at the Club-room, on Tuesday evening the 2nd, to transact business. The Commodore presided: after the Hon. Secretary read over the minutes of the previous Meeting the Ballot was introduced, and the following gentlemen were admitted Members, G. Portas Naylor, Esq., "*Antagonist*," 20 tons, and Henri Hentsch, Esq., Secheron, near Geneva, "*Epervier*," cutter, 20 tons; others were nominated. A new list of the Yachts of the Club has been revised by the Secretary, and the number of Yachts now amount to 75 which. we

believe, places this Club the third amongst the Yacht Clubs of Great Britain.

We understand that the Commodore and Hon. Secretary kept up the spirit of Yachting last week, and had a cruise in the "*Gem*" round the Light ships, for a day's sail, and returned to Liverpool in the evening.

EMIGRANTS FROM THE SOUTH SEA ISLANDS.

GENTLEMEN,—As you have applied to me for some information respecting the voyage of the *Velocity* to obtain emigrants for this colony from the South Sea Islands, I think I cannot meet your request more satisfactorily than by enclosing you a letter from Captain Kirsopp on the subject.

I remain, gentlemen your obedient servant,

B. BOYD.

April 21st, 1847

Velocity, Boyd, April 14th, 1847.

MY DEAR SIR,—As the *Lady Mary Fitzroy* is ready for sea, and it is possible that I may be detained for a day or two at this place, I write in order to give you the earliest information of the success of my endeavours to procure labourers from the islands of the Pacific. Having been a squatter in the colony for five years myself, and suffered from the enormous rate of wages all were compelled to pay during the years '40, '41, and '42, it is with great pleasure I am enabled to assure you that your idea of emigration from the islands of the Pacific I firmly believe will come up to your most sanguine expectations, and that the present wants of these colonies in the shape of labour can be supplied from them, with a class of men who, by common firmness and kindness in the management of them, may be induced to do a moderate quantity of work equally as well as any European, and at less than one-third the cost.

I reached Twofold Bay on the 9th instant, after a fine passage of twenty days, with sixty-five young men from the various islands in the New Hebrides group—their ages vary from fourteen to twenty, or twenty-five. As your instructions were only to bring about fifty as an experiment, I had limited my offers to the islanders when explaining to them the nature of their agreement to that number; but on leaving I found considerable difficulty in getting rid of them, and believe, that had the chiefs not been on board, I should have had to send for them in order to effect it: as it was, on getting to sea I found several had hidden themselves in the cabin, tops, and under the boat covers; nor can it be wondered at, when we consider that for more than eight months out of the year, the inhabitants of all the Coral Islands are in a state but little removed from starvation, the chiefs alone having a bare sufficiency of food; all the men of lower caste being frequently reduced to a single cocoa nut amongst three or four for the day. Cannibalism and infanticide prevailed here to a fearful extent, which I attribute wholly to the want of food; and one day, before my arrival at one of the islands, a feast had been held at which sixteen enemies, killed three days before, had been devoured, and the remains of this disgusting banquet I saw strewed about in every direction. I cannot believe that an intelligent, tractable, and I may add, gentle race, for such I have found them since they have been on board the *Velocity*, would be guilty of this revolting practice, did not necessity compel them.

My first care on getting to sea was, to limit the quantity of food for each person, particularly salt meat; to have the hold well aired and constantly cleaned, &c.; and so successful have I been in my endeavours to preserve all in a healthy state, that I landed them all at Twofold Bay with only one slight case of dysentery having occurred during the passage; and I cannot refrain from mentioning the grateful attachment they have all shown to me, as it exhibits a trait in their characters rarely found amongst savages, and one which will contribute in no small degree to render them manageable during their residence in the colony. But on this score I have no doubt, as short as the time is that they have been with me in the *Velocity*, they have been already learnt to make themselves useful, and the alacrity with which they endeavoured to obey any order I gave, fully proves their inclination to work. Viewing the introduction of these islanders as a philanthropist, I cannot imagine a greater benefit conferred on a race, than removing these poor benighted creatures from a state of starvation and heathen ignorance to a Christian country, where they will not only have the benefit of religious instruction, but be taught all the advantages of civilization.

From my experience in the colony, I was well aware of the jealousy shown by the "old hands," as they are termed, to any class of emigrants on their arrival, and was accordingly prepared for it on landing the islanders at Twofold Bay, but scarcely imagined they would have carried it to the extent they did. The first night that the emigrants were landed, several bullock drivers who had assembled at Boyd went to the building where they had been put up for the night, and told them that the only purpose for which they had been brought to New South Wales was to fatten them and then hold a feast. This agreeing with their own customs was believed, and when I visited them half an hour afterwards all were preparing to come on board the *Velocity* again. I immediately explained to them the intentions of these men in telling them these falsehoods, when they all expressed themselves perfectly satisfied, and commenced their songs and dances. I had not left the building, when I detected the bullock drivers attempting to intoxicate the islanders, bringing spirits with them, evidently with the intention of causing a disturbance. This I very quickly put a stop to, by telling them that the emigrants had their war implements with them, and that should they be excited by spirits, I could not answer for the consequences. After this scene it was deemed prudent to get them away from the bay as soon as possible, and they accordingly started on the 14th, as contented and happy a lot of human beings as could be imagined.

Your instructions to me before leaving were to visit as many islands as possible, not only with a view to ascertain those people most fitted for the wants of the colonists, but also the number likely to be procured: and I have no hesitation in assuring you that from the various groups in the vicinity of New Holland, this vast island, now nearly uninhabited, may be supplied with an almost unlimited number: for as the miseries of an overpopulation are removed by emigration, the crime of infanticide will cease, and the desolating effects of perpetual warfare, not only carried on for the purpose of eating the slain enemies, but also in hopes of plundering the enemy's country of the fruit and roots produced in it, will end, when the principal cause is removed.

Hoping to see you in a few days, when I will be able to answer all your queries in person, I remain, my dear sir, yours faithfully,

E. KIRSOFF.

Maitland Mercury.

ARMAMENT OF THE ROYAL NAVY.

The following new scale of armament of Her Majesty's Ships and Vessels of War has been lately promulgated:—

First Rates.—120 Guns.—Britannia, Caledonia, Howe, Nelson, Neptune, Royal Albert, Royal George, Royal William, St. George, St. Vincent, Trafalgar, and Waterloo; total 12; complement, 1,000 men; lower deck, four 8-inch guns of 65 cwt., 9 feet; twenty-eight 32-pounder guns of 56 cwt., 9 feet 6 inches; middle deck, two 8-inch guns of 65 cwt., 9 feet; thirty-two 32-pounders of 50 cwt., 9 feet; main deck, thirty-four 32-pounders of 42 cwt., 8 feet; quarter deck and fore-castle, six 32-pounders of 45 cwt., 8 feet 6 inches; fourteen 32-pounder carronades* of 17 cwt.; total, 120 guns †.—110 Guns.—Marlborough, Prince of Wales, Queen, Royal Frederick, Royal Sovereign, Victoria, and Windsor Castle; total, 7, complement, 950 men; lower deck, six 8-inch guns, twenty-four 32-pounders; middle deck, four 8-inch guns, twenty-six 32-pounders; main deck, thirty 32-pounders (3); quarter deck and fore-castle, six 32-pounders (2); and fourteen 32-pounders of 25 cwt., 6 feet; total number of first-rates 19, mounting 2,210 guns.

Second Rates.—104 Guns.—Camperdown, Hibernia, Impregnable, Princess Charlotte, Queen Charlotte, and Royal Adelaide; total, 6; complement, 850 men; lower deck, four 8-inch guns, twenty-four 32-pounders; middle deck, two 8-inch guns, twenty-eight 32-pounders of 48 cwt., 8 feet; main deck, thirty 32-pounders of 32 cwt., 6 feet 6 inches, on compressor carriages; quarter deck and fore-castle, six 32-pounders (2), and ten 32-pounder carronades of 17 cwt.—92 Guns.—London, Nile, Prince Regent, and Rodney; total, 4; complement, 820 men; lower deck, eighteen 8-inch guns, fourteen 32-pounders; main deck, six 8-inch guns, twenty-eight 32-pounders; quarter deck and fore-castle, two 8-inch guns of 52 cwt., 8 feet, and twenty-four 32-pounders (3).—90 Guns.—Albion, Aboukir, Algiers, Exmouth, Hannibal, Princess Royal, and St. Jean d'Acre: total 7; complement, 820 men. The armament of this class is precisely the same as that of the preceding, with the exception of there being only twenty-six 32-pounders on the main deck, instead of twenty-eight.—84 Guns.—Agamemnon, Asia, Bombay, Calcutta, Canopus, Clarence, Cressy, Formidable, Ganges, Monarch, Powerful, Sans Pareil, Thunderer, and Vengeance; total, 14; complement, 750 men; lower deck, six 8-inch guns, twenty-four 32-pounders; main deck, two 8-inch guns, thirty 32-pounders of 48 cwt., 8 feet; quarter deck and fore-castle, six 32-pounders (3), and sixteen 32-pounder carronades of 17 cwt.—80 Guns.—Brunswick, Centurion, Collingwood, Colossus, Goliath, Irresistible, Lion, Majestic, Mars, Meeanee, Superb, and Vanguard; total, 12; complement 720 men; lower deck, eight 8-inch guns, twenty 32-pounders; main deck, four 8-inch guns, twenty-four 32-pounders (1); quarter deck and fore-castle, twenty-four 32-pounder guns (3). Total number of second rates, 43, mounting 3,758 guns.

Third Rates.—78 Guns.—Achille, Bellerophon, Cambridge, Foudroyant,

* All the carronades are to be mounted on Sir Thos. Hardy's compressor carriages.

† As the weight and length of the guns will always be regulated with strict uniformity, it will be unnecessary to repeat these items in each class. As, however, there are several classes of 32-pounder guns to be used in navy, the figure (1) annexed will show the gun to be one of 50 cwt., 9 feet; (2), one of 45 cwt., 8 feet 6 inches; and (3), one of 42 cwt., 8 feet. Where this rule is departed from, the exact length and weight are given. The 32-pounder without any such distinguishing mark is that of 56 cwt., 9 feet 6 inches.

Hindustan, Indus, Kent, and Revenge; total, 8; complement, 650 men; lower deck, four 8-inch guns, twenty-six 32-pounders; main deck, two 8-inch guns, thirty 32-pounders (2); quarter deck and fore-castle, six 32-pounders (3) ten 32-pounder carronades.—72 Guns.—Agincourt, Armada, Belleisle, Black Prince, Carnatic, Cornwallis, Egmont, Hastings, Hawke, Hercules, Illustrious, Implacable, Invincible, Malabar, Medway, Melville, Pembroke, Pitt, Russell, Sultan, Wellesley, and Wellington; total, 22; complement, 600 men; lower deck, four 8-inch guns, twenty-four 32-pounders; main deck, twenty-eight 32-pounders (3); quarter deck and fore-castle, four 32-pounders (3), and twelve 32 pounder carronades.—70 Guns,—Boscawen, Cumberland, total, 2; complement, 600 men; lower deck four 8-inch guns, twenty-two 32 pounders; main deck, two 8-inch guns, twenty-six 32-pounders (1), quarter deck and fore-castle, sixteen 32-pounders (3). Total number of third-rates, 32, mounting 2,348 guns.

Fourth Rates.—56 Guns,—Ajax, Blenheim, Edinburgh, and La Hogue; total, 4; complement, 500 men; lower deck, twenty-six 42-pounders, of 66 cwt., 9 feet 6 inches; main deck, twenty-two 32-pounders (3); quarter deck and fore-castle, four 56-pounders, of 87 cwt., 10 feet, and four 10-inch guns, of 86 cwt., 9 feet 4 inches.—50 Guns,—Alfred, America, Arethusa, Benbow, Conquestador, Constance, Cornwall, Devonshire, Dublin, Eagle, Gloucester, Grampus, Indefatigable, Leander, Liffey, Nankin, Octavia, Phaeton, Raleigh, Severn, Shannon, Sutlej, Vernon, Vindictive, and Warspite; total, 25; complement, 500 men; main deck, six 8-inch guns; twenty two 32-pounders; quarter deck and fore-castle, four 8-inch guns, and eighteen 32-pounders (2).—50 Guns (second class),—Chichester, Java, Lancaster, Portland, President, Southampton, Winchester, and Worcester; total, 8; complement, 450 men; main deck, four 8-inch guns, twenty-six 32-pounders of 50 cwt., 8 feet, quarter deck and fore-castle, four 32-pounders (2), and sixteen 32-pounders, of 26 cwt., 6 feet,—46 Guns,—Arrogant; total, 1; complement, 450 men; main deck, six 8-inch guns, twenty-two 32-pounders; quarter deck and fore-castle, two 68-pounders, of 95 cwt, 10 feet, and sixteen 32-pounders, of 32 cwt., 6 feet 6 inches. Total number of fourth-rates, 38, mounting, 1,920 guns.

Fifth Rates.—40 Guns,—Active, Cambrian, Chesapeake, Flora, Pique, Sybille and Thetis; total, 7; complement, 350 men; main deck, six 8-inch guns of 90 cwt., 8 feet 10 inches, sixteen 32-pounders; quarter deck and fore-castle, sixteen 32-pounders (3).—44 Guns,—Africaine, Andromeda, Druid, Endymion, Hotspur, Isis, Leda, Madagascar, Meander, Nemesis, and Stag; total, 11; complement, 320 men; main deck, two 8-inch guns of 60 cwt., 8 feet 10 inches, twenty-six 32-pounders of 40 cwt., 7 feet 6 inches; quarter deck and fore-castle, four 32-pounder guns (2), and twelve 35-pounder carronades. Note.—Endymion is to carry twenty-four 32-pounders of 40 cwt. on main deck, and fourteen 32-pounder carronades on her quarter deck and fore-castle. 42 Guns,—Æolus, Blonde, Boadicea, Cerberus, Circe, Clyde, Diana, Figgard, Fox, Hamadryad, Latona, Laurel, Leonidas, Melampus, Mercury, Mermaid, Minerva, Naiad, Proserpine, Resistance, Seringapatam, Sirius, Thalia, Thisbe, Undaunted, Unicorn, and Venus; total, 27; complement, 310 men; main deck, two 8-inch guns, of 52 cwt., 8 feet, twenty-two 32-pounders, of 39 cwt., 7 feet 6 inches; quarter deck and fore-castle, four 32-pounders (2), four 32-pounders of 39 cwt., 7 feet 6 inches, and ten 32-pounder carronades.—36 Guns,—Castor, and Inconstant; total, 2; complement, 330 men; main deck, four 8-inch guns of 60 cwt., 8 feet 10 inches, eighteen 32-pounders; quarter deck and fore-castle, two 32-pounders (1), and twelve 32-pounders of 25 cwt., 6 feet.—30 Guns,—Amphion; total, 1; complement, 330 men; main deck, six 8-inch guns,

fourteen 32 pounders; quarter deck and fore-castle, two 68-pounder of 95 cwt., 10 feet, eight 32-pounders of 25 cwt., 6 feet.—24 Guns,—Eurotas, Forth, H-ratio, and Sea-horse; total, 4; complement, 320 men; main deck, twenty 42-pounders of 66 cwt., 9 feet 6 inches, on common carriages; quarter deck and fore-castle, two 56 pounders of 85 cwt., 10 feet, on pivot slides and carriages, and two 10-inch guns of 86 cwt., 9 feet 4 inches, on slides and carriages. Total number of fifth-rates, 52; mounting 2,096 guns.

Sixth Rates—*Class 1.*—26 Guns,—Alarm, Amethyst, Carysfort, Cleopatra, Creole, Diamond, Eurydice, Iris, Juno, Malacca, Niobe, Spartan, and Vestal; total, 13; complement, 210 men; main deck, two 8-inch guns of 52 cwt., 8 feet, sixteen 32-pounders of 4 cwt., 7 feet 6 inches; quarter deck and fore-castle, two 32-pounders (3), and six 32-pounders of 25 cwt., 6 feet.—24 Guns,—Amphitrite, and Trincomalee; total, 2; complement, 240 men; main deck, eight 32-pounders, ten 8-inch guns; quarter deck and fore-castle, four 32-pounders of 25 cwt., 6 feet, and two 56-pounders of 85 cwt., 10 feet.—26 Guns,—Amazon; total, 1; complement, 240 men; main deck, twenty-six 32-pounders (1).—24 Guns,—Aigle, and Curaçoa; total, 2; complement, 230 men; main deck, twenty 32 pounders of 40 cwt., 7 feet 6 inches; two 32-pounders (1); quarter deck and fore-castle, two 8-inch guns of 52 cwt., 8 feet.—20 Guns.—Brilliant; total, 1; complement, 230 men; main deck, ten 32-pounders (1), six 8-inch guns of 52 cwt., 8 feet; quarter deck and fore-castle, two 56 pounders of 85 cwt., 10 feet, and two 32 pounders of 25 cwt., 6 feet.—19 Guns.—Havannah; total, 1; complement, 230 men; main deck, ten 32-pounders (1), six 8-inch guns, of 52 cwt., 8 feet; quarter deck and fore-castle, one 56-pounder of 85 cwt., 10 feet, and two 32-pounders (4).—19 Guns.—Dædalus; total, 1; complement, 230 men; main deck, twelve 32-pounders (1), six 8-inch guns, of 52 cwt., 8 feet; quarter deck and fore-castle, one 56-pounder, of 85 cwt., 10 feet.—*Class 2.*—26 Guns,—Actæon, Andromache, Calliope, and Conway; total, 4; complement, 195 men; main deck, two 8-inch guns, of 36 cwt., 5 feet 4 inches, sixteen 32-pounders, of 25 cwt., 6 feet; quarter deck and fore-castle, two 32-pounders (2), and six 32-pounder carronades.—18 Guns,—Calypso, and Coquette; total, 2; complement, 195 men; main deck, two 8-inch guns, of 52 cwt., 8 feet, fourteen 32-pounders, of 40 cwt., 7 feet 6 inches; quarter deck and fore-castle, two 32-pounders (2), on slides and carriages, to pivot.—18 Guns.—Daphne, and Dido; total, 2; complement, 175 men; main deck, two 8-inch guns, of 52 cwt., 8 feet, fourteen 32-pounders (3).—22 Guns,—Herald, North Star, Samarang, Talbot, Tyne, and Volage; total, 6; complement, 175 men; main deck, two 32-pounders, of 39 cwt., 7 feet 6 inches, sixteen 32-pounder carronades; quarter deck and fore-castle, four 32-pounder carronades.—Total number of sixth-rates, 35, mounting 826 guns.

Sloops.—18 Guns.—Arachne, Modeste, Narcissus, Nimrod, Pearl, Tweed, and Terpsichore; total, 7; complement, 145 men; two 32 pounders, of 39 cwt., 7 feet 6 inches, and sixteen 32-pounders of 25 cwt., 6 feet, all on slides, and carriages—16 Guns.—Atalanta, Camilla, Frolic, Helena, Siren, and Zebra; total, 6; complement, 130 men; the armament of this class is precisely the same as the last, with the exception of there being only fourteen 32-pounders, instead of sixteen.—14 Guns.—Champion, Comus, Electra, Favourite, Hazard, Hyacinth, Larne, Orestes, Racehorse, Rose, Satellite, Scout, and Wolf, total, 13; complement, 130 men; armament similar to that of the first class, but the number of 32-pounders reduced to twelve.—12 Guns.—Acron, Albatross, Arab, Bittern, Columbine, Contest, Daring, Despatch, Elk, Espiegle, Fantome, Flying Fish, Goshawk, Grecian, Heron, Kangaroo, King, fisher, Mariner, Martin, Mutine, Persian, Pilot, and Recruit; total, 23;

complement, 130 men; armament the same as the first class, but the number of 32-pounders reduced to ten.—12 Guns,—Childers, Cruizer, Harlequin, Liberty, Lily, Pelican, Racer, Ringdove, Sappho, Serpent, Snake, Sparrowhawk, Squirrel, Wasp and Wolverine; total, 16; complement, 130 men; two 32-pounders of 33 cwt., 6 feet 6 inches, and ten 32-pounders of 25 cwt., 6 feet.—8 Guns,—Cygnet, Ferret, Heroine, Hound, and Philomel; total, 5; complement, 80 men; armament as in the last class, but the number of 32-pounders reduced to six.—8 Guns,—Alert, Linnet, Ranger, and Star; total, 4; complement, 80 men; two 32-pounders of 32 cwt., 6 feet 6 inches, and six 32-pounder carronades.—6 Guns,—Britomart, Pantaloon, Rapid, Sealark, and Water-Witch; total, 5; complement, 80 men; two 11-pounders of 20 cwt., six feet, and six 18-pounders of 15 cwt., 6 feet 6 inches. Total number of sloops, 79, mounting, 984 guns.

Brigs.—6 Guns,—Chamelion, Curlew, Espoir, Nautilus, Rolla, Royalist, Saracen, Savage, Scorpion, and Wizard; total, 10; complement, 65 men; two 32-pounders of 32 cwt., six feet 6 inches; and four 18-pounder carronades of 10 cwt.—3 Guns,—Bonetta, Dart, Dolphin, and Spy; total, 4; complement, 65 men; one 32-pounder, of 39 cwt., 7 feet, 6 inches, and two 32-pounders of 22 cwt., 6 feet 6 inches.—3 Guns,—Griffin and Lynx; total, 2; complement, 60 Men; one 32-pounder, of 39 cwt., 7 feet 6 inches, and two 24-pounder carronades of 13 cwt. Total number of brigs, 16, mounting 78 guns.

Summary.

19 first-rates, mounting	2,210 guns
43 second-rates “	3,758 “
32 third-rates “	2,348 “
38 fourth-rates “	1,920 “
52 fifth-rates “	2,096 “
35 sixth-rates “	826 “
79 sloops “	984 “
16 brigs “	78 “
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Total 314 ships of war “	14,220 “

The number of men that would be required for this all-powerful navy (independent of steam-ships, &c.,) would be as follows.—

For the 19 first-rates	18,650
“ 43 second-rates	33,260
“ 32 third-rates	19,600
“ 38 fourth-rates	18,550
“ 52 fifth-rates	16,610
“ 35 sixth-rates	7,470
“ 79 sloops	9,675
“ 16 brigs	1,036

Making a total of 124,845

Steam Vessels Propelled by Screws.—The armament of the screw steam vessels remains unaltered, the only difference being that the name of the Pegasus is now altered to that of the Greenock. The complement of men has, however since been fixed, and as this will be useful to all persons connected with the Navy, we annex the numbers:—Simon and Vulcan, 300 men; Termagent, Dauntless, Euphrates, and Vigilant, 250 men; Megæra, and Greenock, 200 men; Conflict, Basilisk, Desperate, Enchantress, Falcon, Florentina, Niger, Encounter, and Harrier, 140 men; Rattler and Phoenix, 120 men; Archer, Cossack, Parthian, Rifleman, Sepoy, and Sharpshooter, 80

men; Biter, Boxer, Minx, and Teazer, 30 men. Since the last return, the steam frigates with auxiliary power, and the steam guard ships, have been taken out of the catalogue of the steam navy, and placed with the sailing vessels.

Steam Vessels Propelled by Paddles.—Some slight alterations have been made in the classification of the steam vessels propelled by paddles, but the armament being for each the same, the following arrangements of the vessels, and their complements is all that will be necessary to give; Terrible, 16 guns, 300 men; Penelope, 16 guns, 270 men; Odin, Leopard, and Sidon, 12 guns, 270 men; Avenger, Birkenhead, and Retribution, 6 guns, 250 men; Centaur, Cyclops, Dragon, Firebrand, Gladiator, Sampson, and Vulture, 4 guns, 195 men; Scourge, 2 guns, 160 men; Bulldog, Cormorant, Devastation, Driver, Eclair, Fury, Geyser, Gorgon, Growler, Inflexible, Sphynx, Spiteful, Styx, Stromboli, Thunderbolt, Vesuvius, Virago, and Vixen, 6 guns, 160 men; Hecate, Hecla, Hermes, Hydra, Medea, Salamander, and Trident, 6 guns, 185 men; Ardent, Alecto, Polyphemus, and Prometheus, 3 guns, 100 men; Janus, 2 guns, 100 men; Acheron, Antelope, Columbia, Grappler, Oberon, Pluto, Tripton, and Volcano, 3 guns, 60 men; Blazer, Firefly, Flamer, and Tartarus, 3 guns, 55 men; Avon, Cornet, Gleaner, Kite, Lucifer, Lightning, Meteor, Porcupine, and Shearwater, 2 guns, 40 men; Alban, Dee, and Rhadamanthus, 4 guns, 60 men.—*Nautical Standard.*

WRECK OF THE LORD WENLOCK, MERCHANTMAN.

The barque *Lord Wenlock*, Capt. Charles Caine, 656 tons register, belonging to Mr. Reuben Hemenway, of Liverpool, left Bonny, on the coast of Africa, on the 14th of July, bound to Liverpool, with a cargo of 700 tons of neat palm oil, worth about £25,000. She had a crew of thirty-one hands, and one passenger, Mr. Alexander McMillan, of Scotland.

The *Lord Wenlock* touched at Fernando Po on the 18th of July, and nothing remarkable occurred on the passage home until the night of the 1st of October, when the ship was overtaken by a tremendous storm from the westward, veering round to the north-east and east, which, about two o'clock in the morning of the 2nd instant, in lat. $48^{\circ} 5' N.$, long. $18^{\circ} 25' W.$, off the south coast of Ireland, carried away the ship's fore-mast and main-top-gallant-mast, and damaged the head of the main-mast. At seven o'clock the main-mast went by the board, carrying the mizen-mast with it, and disabling the weather pump. The ship was now leaky, completely dismasted, and became entirely unmanageable. Every effort was ineffectually made to keep her head to the wind. She rolled incessantly, and the sea washed over her like a half-tide rock. Her loose spars were flying about the decks, and the casks of oil in the hold broke adrift and got started. All her boats were, one after the other, washed away, and the water casks stove in. In this unfortunate condition, the pumps constantly going, with no fresh water, and their only provisions some biscuit and a small cask of wine, the weakened crew continued until Sunday, when, from among several ships observed, one vessel, a brig of about 200 tons, came sufficiently near to see them. The long-boat's mast was immediately erected, with an ensign, union down, flying at its head; but the stranger did not, or would not, observe the flag of distress on the wreck. She was a regularly rigged English brig, painted ports, moderately laden, boat over her stern, had two reefs in her topsail,

single reefed foresail, and single reefed boom mainsail, coming apparently from the southward, and was homeward bound. As she unheedingly passed on her course, the crew of the forlorn barque became heart stricken, and it was with great difficulty Capt. Caine could induce them to continue their work at the pump on their poor allowance of three glasses of wine each daily.

Providentially, on Tuesday, the 5th, the barque *Volant*, Capt. M'Murphy, five days from Liverpool, belonging to, and bound for, St. Andrews, in British North America, bore down, about nine o'clock in the morning, towards the famishing men, and at great risk sent a boat to their rescue. The sea was on so strong that the boat dared not come near, for fear of being stove; and the crew of the *Lord Wenlock* were thus, to save their lives, compelled to leap from the wreck and swim, or be hauled by ropes to the boat.

At the time the *Volant* hove in sight there were three and a half feet of water in the hold, and at twelve o'clock, when they finally abandoned the wreck, the water in her had increased to five feet. In all probability she went to pieces the same night, when it blew a heavy gale. Besides their lives they could only save the chronometers, ship's papers, and a port-manteau.

Captain M'Murphy was insufficiently provided to meet so numerous an addition to his complement, but he behaved like a true sailor, and treated the hapless crew of the *Lord Wenlock* with every consideration.

On Sunday, the 10th, they fell in with the Dutch ship *Zeeman's Hoop*, bound from Batavia to Amsterdam; her commander, Capt. George Teasman, supplied the *Volant* with provisions for the increase to her crew, and received Capt. Caine, his mate, passenger, and six hands on board the *Zeeman's Hoop*. These nine, after receiving the kindest treatment from the hospitable Dutchman, were put into a pilot-boat in the English Channel on the morning of the 13th, and same day safely landed at Plymouth, whence those requiring such aid will be sent to their homes by the local branch of the Shipwrecked Mariners' Society established there.

CUTTING THROUGH THE ISTHMUS OF SUEZ.—The *Journal des Debats*, discussing the question as to which would be better, a railway or a canal across the Isthmus, says:—"It is proposed by some to overcome the obstacle which now stops the trade and navigation of Europeans, Asiatics, and even Africans, at the Isthmus of Suez, by a railway: by others by a canal. The problem to be solved is: which of the two systems is that which should be adopted? Nature has so disposed it that all political or commercial communication between the people which form the three continents composing the whole world should take place by sea, consequently that combination which would best serve the maritime interest is that which should be preferred." First, taking the railway project, the *Debats* goes on to state that between Alexandria, Cairo, and Suez is a distance of eighty leagues; the execution of a railway along this distance would be easy. With but one line of rails it would cost about 30 or 40 million of francs, and its working would not cost much, under the dry and preserving climate of Egypt, though it would have to be preserved along parts of its course from the danger of periodical inundations.

"As regards transit, it would carry men and merchandise in about twenty hours from Alexandria to Suez—that is about one-third of the time taken under present circumstances. Compared in the matter of speed to a canal

commencing from Peluzium and having but two locks, one at each end, it would be beaten by steamers, and would gain little, even on sailing vessels. This advantage reduces itself to very little, if it is borne in mind that, for navigation, a great saving in distance would be gained by a canal.

“On the other hand, the inconveniences of a railway are numerous. It does not in the least modify the condition of double transshipment. The existence of such a condition means literally this—complete uncertainty for trade, indeterminate delays, and every chance of a later arrival than if the grand road *via* the Cape had been chosen. Supposing that the isthmus was open by railway, and not by canal, and that a London merchant wished to send merchandize to Bombay or Colombo *via* the Red Sea, he must take the precaution either of sending in advance a vessel from the Cape, or get a vessel freighted in India or at Ceylon to come to Suez, take in the cargo, and bring it to its destination. This would be simply a piece of extravagance on his part, taking it in a financial point of view, and subject besides, to risk which nobody would wish to incur. The proof of the impossibility of such an attempt is, that in spite of the perfections to which the service has arrived, nothing arrives in the port of Suez, but the Bombay and Calcutta steamers. A railway would thus be of little use for transit. It would indeed carry men and despatches more conveniently than they are carried at present, but then it would probably not have an increase of either. This is not what is counted upon to create a revenue for a railway, the length of which would extend to 80 leagues.

“Taken as a speculation, the railway does not show itself in a more advantageous light. Experience tells us, passengers and intermediate stations are the great source of profit. It is sufficient to cast a glance over a map of Egypt, to see that from Alexandria to Cairo two-thirds at least of the distance is uninhabited; and even were a population to exist, such a one would be plunged in abject misery, without trade or industry, without activity, as well as without desire to acquire, because it would know where the fruits of its labour would be taken. Such a population would not be one to appreciate the boon of locomotion. Locomotion is regarded by all people of the East, Chinese, Turks, Hindoos, Arabs, &c., as a malady of our kind. No doubt, an agreeable picture might be formed in imagination, representing the fellahs of Egypt travelling in a railway train; but few, however, have travelled and seen their sad villages, and probed their physical and moral wounds; such a picture would be but a cruel jest. In fine, in a political point of view, one consideration alone should prevent Mehemet Ali from ever giving his consent to the execution of such a project, and for this he need only remember that some years ago the English founded a transit company on his territory, which has since become an object of such constant annoyance to him, that he was obliged to take the matter in his own hand. Yet this administration did not count more than twenty Europeans employed in it. What will not happen, if the Viceroy brings into his country the engineers, stokers, smiths, and all who are necessary for working a railway? Taking all circumstances into consideration, the railway would in reality be but a consecration for the trade of the world of the *status quo*: for Egypt it would introduce into its bosom a dangerous weapon, the explosion of which might take place anywhere but in Cairo and Alexandria.”

NAUTICAL NOTICES.

Northern Light-office, Edinburgh, Oct. 20th, 1847.

INACCURACIES IN CERTAIN CHARTS.—*Lights on the Coast of Scotland.*—**SIR,**—I am directed by the Commissioners of Northern Light-houses, to state for the information of the Committee of Lloyd's, that having recently had their attention directed to an error in the description of a light on one of the published charts of the coasts of Scotland, they have been induced to institute an examination, so far as concerns the Northern Light-houses, of the various charts in their possession, and I am directed to submit to the consideration of Lloyd's the following errors which have been noticed:—

Trinity House Chart, 1845.

I. In a chart, published by Mr. R. H. Laurie, Fleet-street, London, dated 1st January, 1845, and bearing to be a corrected edition of a chart of light-houses and lights, and published by order of the Corporation of the Trinity-house, the following inaccuracies have been noticed:—

1. Little Roos Light is characterized as a "revolving" instead of a "flashing" light.

2. The important Light of Skerryvore is characterised as "intermittent" instead of "revolving." This mistake is the more to be regretted as the adjoining Light of Barrahead is "intermittent," and any confounding of the two lights might be productive of serious consequences.

3. Buchanness Light is characterised as "intermittent" while it should be "flashing."

4. There is a note at the top of the chart bearing that at Sumburghhead there is a fixed light, but as a stranger might suppose that the asterisk which marks the note was intended to indicate the position of the light, the note should have added to it the proper bearing and distance of the lighthouse from Startpoint Light, or the longitude and latitude of Sumburghhead.

Chandler's Chart, 1832.

II. In Chandler's Chart of the north-east coast, published by Norie and Son, No. 157, Leadenhall-street, 1st July, 1832, of Tarbetness, which should be described as "intermittent," it is said that it "revolves," and appears like a star for two minutes and a half, then disappears for the space of half a minute, its total revolution being three minutes.

Murdo Downie's Chart, 1836.

III. In the Chart of the East Coast of Scotland, prepared by Murdo Downie, and improved by Hepburn, published by Norie, 1st January, 1825, and corrected to 1836, Tarbetness is shortly described as showing a "revolving light."

These two errors are also much to be regretted, as the light on Covesea Skerries, recently exhibited by this board, and immediately adjoining to Tarbetness, is a revolving light, and if mariners bound westward were to imagine the revolving light of Covesea to be on Tarbetness, and to take their course accordingly, they must inevitably be stranded in Spey Bay.

In the last mentioned Chart, Buchannes is described as "revolving," instead of "flashing."

Blackford's Chart, [no date.]

IV. In the Chart of the West Coast and Islands, prepared and published

by Blackford, 116 Minories; Barrahead, in the place of being called "intermittent," is described as "revolving," and this being the true character of the adjoining light of Skerryvore, it might lead to the same result as the error in the first-mentioned chart.

Norie's Chart, 1834.

V. In the Chart of the Hebrides and the Lewis, published by Norie in 1832, and corrected to 1834, Barrahead, being the light adjoining Skerryvore on the west, is again described as "revolving;" and Rhinns of Islay, the light adjoining Skerryvore on the east, is also described as "revolving," instead of "flashing;" so that this chart would indicate three adjoining lights, as all possessing the same character of "revolving."

VI. In some of these charts there are also errors, which may perhaps be more properly called defects, such as characterising the Bell Rock, and the Point of Ayre, Isle of Man, merely as "revolving," without noticing their alternate character of "bright and red lights."

The Commissioners are not prepared to offer any suggestion as to how these inaccuracies are now to be remedied; but as the subject is one of vital importance to the trade of the country, and as the existence of the errors has come to the knowledge of the Commissioners, they consider that they would not be justified in delaying to submit the same to Lloyd's, who have so deep an interest in the subject.

ALEX. CUNNINGHAM, *Secretary.*

W. Dobson, *Esq., Secretary, Lloyd's.*

*Office of Committee of Privy Council for Trade,
Whitehall, Oct. 26th, 1847.*

QUARANTINE FOR ENGLISH VESSELS SAILING TO THE TWO SICILIES.—Sir,—I am directed by the Lords of the Committee of Privy Council for Trade to acquaint you, for the information of the Committee for managing the Affairs of Lloyd's, that my Lords have received intelligence through Her Majesty's Secretary of State for Foreign Affairs, that in consequence of the prevalence of yellow and typhus fever in the United States of America, certain new quarantine regulations have been adopted by the Government of the Two Sicilies, prescribing that cotton yarn and twist arriving from England, having left on or before the 31st of October, inst., shall be admitted to free pratique if after due examination it shall be proved that the said cotton yarn and twist is the produce of English manufacture: and that, with regard to the like goods which shall be sent from England after the 31st of November next, it will be necessary for the captains of the vessels conveying the same to furnish themselves with a certificate from the principal authority of the place, countersigned by the Neapolitan Consul, and certifying that the yarn or twist has been spun in England, France, or Austria.

G. R. PORTER.

W. Dobson, *Esq., Secretary, Lloyd's.*

THE HARTLEPOOL LIGHTHOUSE.—The experiment of employing gas for lighting this lighthouse has been made, and the result has been completely successful. It is the first lighthouse on a large scale and of any great importance that has yet been lit in this manner. Some small lighthouses on piers have certainly been thus lit before, but no lighthouse of such importance

to navigation. The burner employed was constructed by Messrs. M'Niel, of London, who were employed to carry the new mode of lighting into effect. The power and brilliancy of the light were tested by several captains and persons connected with the harbour, going out to sea, and their report was very favourable. The substitution of gas for oil will reduce the expenses about half, and will remove the danger said to arise from the lamp with concentric wicks, which requires constant attention, and considerable judgment in the management. There has hitherto been considerable difficulty in adapting gas to lighthouses where a single large light is required, for the only burners which were large enough to give sufficient light, burned with so unsteady and irregular a flame, that they were unsuitable to the optical apparatus employed to concentrate the rays. These difficulties have been overcome, and a most desirable end attained.

ERROR IN THE LONGITUDE OF THE NORTH CAPE OF EUROPE.

Glasson Dock, Port of Lancaster, Oct. 27th, 1847.

SIR,—Having for the last nine or ten years been a constant reader of your valuable *Magazine*, and from which I have derived knowledge, amusement, and many useful hints on the Science of Navigation, I beg to submit to you the following remarks, made on my passage from Archangel towards Glasson Dock.

My chronometer, I carefully found the rate of by artificial horizon during my stay in port, and sailed on the 16th September, had fine weather and fair winds, found the bearings of the land and ship's position by chronometer to agree tolerably well as far as Cape Sweetnose. On arriving off the North Cape, on the 20th September, I had beautiful weather, light airs from the eastward, and clear horizon. The altitude taken for chronometer in the morning at eight o'clock, gave the long. $26^{\circ} 0' 30''$ E. The hour angle of course worked with the true lat. reduced back from noon. The true bearings of the Cape were S.W. $\frac{3}{4}$ S., 14 miles distant, which gave the long. in by bearings, $26^{\circ} 30'$ E.

Again, about four o'clock, P.M., altitudes were taken with great care, which gave long., by chronometer, $25^{\circ} 7' 30''$ E. The bearings of the Cape, same time, S.b.E. $\frac{1}{4}$ E. (true) 23 miles distant, gave the long., in by bearings, $25^{\circ} 39' 30''$ E., from which I conclude that the North Cape is laid down on Norie's Chart about 30' of long. too far East, and in place of $26^{\circ} 00' E.$, (the long. assigned to it.) it lays in long. $25^{\circ} 30' E.$ The coast along as far as Röst Island to the westward, partakes of the same error in long. I passed close along the North Ferroe Islands, and found their positions well laid down, and agreeing with the chronometer; and on my arrival at the entrance of the River Lune, in Lancaster Bay, the ship's position, at anchor, was carefully found by cross bearings, and sights taken for chronometer, and which I found perfectly correct.

Should you think the above of any importance, you will please publish it, and rely on its being perfectly correct.

I remain, &c.

WM. THOMS,

Master of the brig Triad of Kirkaldy.

To the Editor of the Nautical Magazine.

Trinity House, London, 28th Oct. 1847.

The following Notice having been communicated to this Corporation, by direction of the Right Honourable the Lords Commissioners of the Admiralty, the same is reprinted by Order of this Board for the general information of Mariners.

J. HERBERT, *Secretary.*

Hydrographic Office, 29th Sept. 1847.

BEACON BUOYS IN THE GROUNDS BETWEEN THE KULLEN AND HELSINGBORG.—Notice has been received from Her Majesty's Consul at Elsinore, that on the 31st of August the following beacon buoys, with black staves surmounted by white vanes, were laid down on the Grounds off the Swedish Coast, between the Kullen and Helsingborg, viz.

1. In front of Skärs, or Norrskärs bottom, S.W. of Nyhamn in $5\frac{1}{2}$ fathoms water, and about $1\frac{1}{2}$ cable lengths from the Ground. From thence the light-house on the Kullen bears N.b.W. and Wäsby Church S.E.

2. At the Mölle Ground, opposite Hogänäs, W.N.W. of the Ground, in 5 fathoms water, and about 2 cable lengths from the same; the Kullen light bearing N. and Wäsby Church E.b.S.

3. At the Jungnäas bottom, opposite Lerberg, W.N.W. of the Ground, in 5 fathoms water, and about 2 cable lengths from the same; Wiken Church bearing S.S.E. and Wäsby Church E.b.N.

4. At the Swine bottom, N. of Wiken, W.b.N. of the Ground, about 2 cable lengths from the same, and in $4\frac{1}{2}$ fathoms water; Wiken Church bearing S.E., and Wäsby Church N.E. $\frac{1}{2}$ E.

5. At the Grolle Ground, N.W. of Kulla Gunnarstorp, W.N.W. of the Ground and about half a cable's length from it, in $4\frac{1}{2}$ fathoms water; the Kullen light bearing N. $\frac{1}{2}$ W. and Kulla Gunnarstorp S.E.b.E.

These Beacons will be removed in November, and again laid out in May.

The above bearings are all magnetic.

Trinity House, London, 25th Oct. 1847.

SOUTH CALLIPER OF THE GOODWIN SAND.—Information has been this day received, that the Beacon upon the South Calliper of the Goodwin Sand, the erection of which was notified by advertisement from this House, under date the 26th of August last, disappeared during the gale on the 23rd instant.

By order,

J. HERBERT, *Secretary.*

Trinity House, London, 27th Oct. 1847.

PRINCES CHANNEL AND MARGATE SANDS.—This Corporation having caused two additional buoys to be placed on the North side of the Princes Channel,—Notice thereof is hereby given, and that both buoys are coloured red, and marked as follows, viz.—

The buoy marked "Shingles," lies in $4\frac{1}{2}$ fathoms at low water spring tides, about midway between the Shingles and Girdler Beacons, with the following marks and compass bearings, viz.—

Mount Pleasant in line with Birchington Western

Mill

S. $\frac{1}{4}$ W.

The West End of Margate East Cliff, midway
between Margate New Church and St. Peter's
Church - - - - -

S.b.E. $\frac{3}{4}$ E.

Shingles Beacon - - - - -

S.E.b.E. $\frac{3}{4}$ E.

Girdler Beacon - - - - -

W.b.N.

North Tongue Buoy - - - - -

S. $\frac{1}{2}$ W.

The Buoy marked "South Girdler," lies in 4 fathoms at low water spring tides, about midway between the Girdler Beacon and Girdler Buoy, with,—

North Down Tower shut in behind the Tower of

Margate New Church - - - - -

S.S.E. $\frac{3}{4}$ E.

Ash Church a ship's length open to the westward

of Sarr Mill - - - - -

S. $\frac{1}{2}$ W.

Girdler Beacon - - - - -

S.E.b.E. $\frac{1}{2}$ E.

Girdler Buoy - - - - -

W.b.N. $\frac{3}{4}$ N.

The North Spit Buoy of Margate Sand having been moved about 4 cables length to the eastward of its former position, now lies in 8 $\frac{1}{2}$ fathoms at low water spring tides, with the following marks and compass bearings, viz.—

St. Peter's Church just open to the westward of

Margate Coast Guard Station - - - - -

S. $\frac{1}{2}$ E.

St. Nicholas Church in line with St. Nicholas

Easternmost Preventive Station - - - - -

S.W. $\frac{1}{2}$ W.

N.E. Spit Buoy - - - - -

E.S.E.

Wedge Buoy - - - - -

W.b.N. $\frac{1}{2}$ N.

East Tongue Buoy - - - - -

N. $\frac{1}{2}$ E.

By order,

J. HERBERT, *Secretary.*

*Office of Committee of Privy Council for Trade,
13th Nov., 1847.*

THE MEXICAN GOVERNMENT.—Sir.—I am directed by the Lords of the Committee of the Privy Council for Trade, to acquaint you, for the information of the Committee for managing the affairs of Lloyd's, that information has been received by Her Majesty's Government, that a decree was issued on the 4th Sept. last, by the Mexican Government, opening to foreign commerce and the coasting trade, the port of Altata, in that Republic.

(Signed)

G. R. PORTER.

W. Dobson, Esq., Secretary, Lloyd's.

*Swedish and Norwegian Consulate General,
2, Crosby Square, 4th Nov., 1847.*

LIGHT HOUSES AT FARON AND YSTAD.—Sir.—I have the honour to communicate to you the following translation of an ordinance issued by the Royal Navy Board at Stockholm, on the 24th Sept., 1847:—

"The Royal Navy Board, hereby makes known, for the information of mariners, the following publication regarding the light-houses at Faron and Ystad, viz:—

"1st. The light-house on the north-east point, or the Holm point, on Faron, referred to in the ordinance on the 16th April last, has been built during the summer, and will be lighted about the latter half of the month of October, of the present year. As a difference between the light-house on

the Island of Ostergarn, east of Gottland, this new one will be revolving, and will give four equally strong lustres, of about thirty seconds each, during a period of eight minutes, with a minute and a half's darkness between each lustre. The light will be visible in every direction from north to east, and to south-west, and can be seen from a ship's deck in clear weather at a distance of three and-a-half geographical miles.

"2nd. In place of the lanterns at Ystad, hitherto only lighted on certain occasions, there have been built two light-houses, provided with sidereal lamps. The larger one, or the one furthest in the harbour, will have a common white lustre, fifty-two feet above the level of the sea, and will be visible from W.N.W. to S. to E.N.E., and can be seen at a distance of from two to three miles during clear weather. The lesser, and outer light-house, is erected on the farthest end of the west pier of the harbour, is twenty feet above the level of the sea; and to distinguish it from the greater light-house, as well as from the lights of the houses in the town, has a red lustre visible all round the horizon, at a distance of about one to one-and-a-half geographical miles. This lighthouse, on entering the harbour, must be taken close on the larboard tack. The bearings of these light-houses from each other are N.E.b.N., and S.W. b.S., and the distance between them is 1451 feet. The light-house on the west pier is painted white, and the larger one is painted two-thirds from the bottom red, and the remainder white. These two will be lighted first, towards the end of the month of October, and will, as well as the light-house on the Island of Faron, be lighted during the hours appointed by government in the rules and regulations regarding pilotage and beacons.

(Signed,)

"CHARLES TOTTIE."

W. Dobson, Esq., Secretary, Lloyd's.

Trinity House, London, 8th November, 1847.

BUXEY SAND, AND SWIN SPITWAY.—The corporation having caused an iron beacon to be placed on, and two black buoys laid near, the Buxey Sand, viz:—one buoy on the north, and the other on the south side thereof, for the safety of vessels navigating in that vicinity, notice thereof is hereby given, and that the beacon, distinguished by a cross, is placed on the north-western part of the sand, which is dry at low water spring tides, and with the following compass bearings, viz:—

Tillingham Preventive Station Staff	W.b.S.
West Buxey Buoy	S.W. $\frac{1}{2}$ S.
Maplin Light-house,	S. $\frac{1}{2}$ W.
North Buxey Buoy	N.E.b.E. $\frac{1}{2}$ E.
Ray Sand Beacon,	W.S.W.

The buoy on the north side, marked "North Buxey" is laid in 4 fathoms at low water spring tides, with the following marks and compass bearings, viz:—

A large brick-built house, just in sight to the southward of the black preventive station, on Foulness Island,	S.W.b.W. $\frac{3}{4}$ W.
Wivenhoe Mill, just open to the eastward of the eastern-most trees on Mersea Island,	N. $\frac{3}{4}$ E.
Buxey Beacon,	S.W.b.W. $\frac{1}{2}$ W.

The buoy on the south side, marked "South Buxey" is laid in 2½ fathoms at low water spring tides, with the following marks and compass bearings, viz:—

Brightlingsea Church, just open to the eastward of two remarkable round-topped trees, at the west end of

Brightlingsea Wood,	N. $\frac{3}{4}$ E.
Whitaker buoy,	S.E.b.E. $\frac{1}{2}$ E.
Whitaker ridge buoy,	W. $\frac{1}{4}$ S.

The black buoy, marked "Swin Spitway," having been moved about $1\frac{1}{2}$ cables' length to the eastward, now lies in 3 fathoms at low water spring tides, with the following marks and compass bearings, viz:—

A white Cottage between St. Osyth and the beach, in line with the body of St. Osyth's Church	North.
A white house on the cliff, in line with great Clackton Church	N.N.E. $\frac{1}{2}$ E.
Wallet Spitway buoy,	N. $\frac{1}{4}$ W.
Whitaker buoy	S.W.

The red beacon buoy, marked "Wallet Spitway," has also been moved about $2\frac{1}{2}$ cables' lengths to the eastward, and now lies in 4 fathoms at low water spring tides, with the following marks and compass bearings, viz:—

A white Cottage between St. Osyth and the beach, in a line with the chancel of St. Osyth's Church,	North.
The Naze Tower, half the length of the Tower, on the Cork land,	N.E.b.E. $\frac{1}{4}$ E.
Eagle buoy,	N.W. $\frac{3}{4}$ W.

By order,

J. HERBERT, *Secretary.*

Trinity House, London,

1st November, 1847.

GOODWIN SAND.—The beacon upon the South Calliper of the Goodwin Sand, having disappeared in the storm of the 23rd ult., as notified in the advertisement from this house, bearing the date the 25th ult.; notice is hereby given, that instead thereof, a large nun buoy, surmounted by a staff and cage, and painted black and white, in horizontal stripes, has been moored off that part of the sand, in 13 fathoms at low water spring tides, and with the following marks and compass bearings, viz:—

Waldershare Monument in a line with the centre of the low cliff, north of Kingsdown,	W.b.N. $\frac{1}{4}$ N.
Thanet Mill, midway between Ramsgate Church and the Obelisk on the pier,	N.b.W. $\frac{3}{4}$ W.
S.E. Goodwin buoy	S.W. $\frac{3}{4}$ W.
South sand head, light vessel,	W.b.S.
Swatchway beacon,	N.E. $\frac{1}{4}$ N.
Goodwin light vessel	N.E.b.N.

By order,

J. HERBERT, *Secretary.*

Hydrographic Office, 16th Nov. 1847.

KATTEGAT.—*Light on Spotsbjerg, at the Entrance of the Iseffjord.*—Notice has been received from Her Majesty's Consul at Elsinore, that on the 1st of November, 1847, it was intended to exhibit a fixed light on Spotsbjerg, on the eastern side of the entrance of the Iseffjord, in lat. $55^{\circ} 58' 35''$ N., long. $11^{\circ} 51' 50''$ E.

This light to be 120 feet above the level of the sea, 10 feet above the base of the light-house, and visible at the distance of about 3 leagues.

This new light will be kept burning during the same period as the other Danish lights, and will supersede the fishery light, hitherto shewn from the 1st of September to the 1st of November.

Trinity House, London, 18th Nov. 1847.

SCROBY SAND, OFF YAERMOUTH.—Notice is hereby given, that the large black beacon Nun Buoy, at the South End of the Scroby Sand, broke adrift during the gale of the 17th instant; and that a black beacon buoy marked "South Scroby," will be laid at that Station as soon as practicable.

By order,

J. HERBERT, *Secretary.*

CAUTION TO MASTERS OF VESSELS.—The schooner *Gem*, of London, R. Fowler, master, 102 tons, from London to Bridgewater, with a cargo of wheat, ran on shore on the Hook Sand, off Poole Harbour, under circumstances which should operate as a warning to masters against stowing their chain cable or other mass of metal aft, so as to be near the binnacle. The *Gem*, having passed the Isle of Wight, was steering by compass a due course, as was supposed, from St. Catharine's Head to Portland, there being at the time so thick a fog as to prevent anything being seen. She suddenly struck on the back of the Hook Sand, off the mouth of Poole Harbour, and was unable to get off. The only cause, that can be assigned for being so out of her course, was the *irregularity of the compass occasioned by the chain cable, which, for the sake of trimming the vessel, had been stowed in the after part of the ship.*

REAR-ADMIRAL BANDIERA.—Letters from Venice, announce the death of Rear-Admiral Bandiera. With him the last of his race is consigned to the grave, a race that the two noble youths who fell on the scaffold of Coesena were to have continued to posterity. The hand of fate fell heavy on the veteran's white hairs, who in the self-same hour was informed of the tragical death of his sons, and his dismissal from the command of his frigate. He was buried with all the naval honours due to his rank.

The Lords of the Treasury have been pleased to approve of masters in the Royal Navy, when appointed chief officers in the Coast Guard, being placed on the same footing, in regard to pay and allowances, as lieutenants holding the same situation; viz., salary, 18*l.* per annum, and 4*s.* per day, with compensation for loss of half-pay.

Malta, 3rd November, 1847.

A few days ago an English schooner, named the *Europe*, arrived here from Messina, having on board three persons compromised by the recent events at that place, and whom the captain had managed to get away and save from being executed. Immediately they arrived here, it is said that the Neapolitan consul applied to the government to prevent them landing, and insisted that

the vessel should take them on to England, whither it was bound; but the captain, as an Englishman, and a man fully cognisant of the laws of England wherever the British flags flies, insisted upon landing them, and they were landed, but not at liberty; for they were kept in close confinement for three days, having intercourse with no one, until some English gentlemen came forward as their guarantees.

SUNDERLAND DOCKS.—The works of the Sunderland Docks are prosecuted with great energy and spirit, notwithstanding the derangement of monetary affairs which have occasioned the suspension of railway works and other extensive undertakings in other parts. The excavation of the tidal dock is proceeding with great success and surprising activity, and several hundred men are constantly employed in the various works connected with this great undertaking.

NEW BOOKS.

THE ELEMENTS OF SAILMAKING.—*Being a complete Treatise on Cutting out Sails, &c.* By Robert Kipping.—London: C. Wilson, (late Norie and Wilson,) 157, Leadenhall Street.

We have had occasion to notice the appearance of Part I. of this useful Work, and have now an opportunity of announcing its completion in a neatly bound volume. As we know of no existing treatise applicable to the present system of Sail-making, we make no doubt, but Mr. Kipping will meet with the encouragement he deserves, by seeing his mode generally adopted throughout the Merchant Service. His experience has already gained for him the notice of several eminent ship builders, and while we announce that the work before us, is replete with scientific rules, exemplified by numerous cases for cutting out sails of every description, we can confidently recommend it to the attention of all ship builders and seamen.

MURRAY'S HOME AND COLONIAL LIBRARY.—Murray, London.

These most interesting little volumes may indeed be called "Cheap Literature for all Classes." Several numbers lie on our table replete with information. One of them, No. 48, "A voyage up the Amazon" has been a useful reference in the translation of Mons. de Castelnau's report on that river, which appears in the present number. They carry their own recommendation with them, all that the journalist can say is, that they will form a library calculated to store the mind with useful knowledge and amusement; and while we make known the interest we have taken in their perusal, we can sincerely recommend them as *bijoux* which cannot fail to be sought after.

NEW CHARTS.

(Published by the Admiralty, and sold by Mr. Bate, for November, 1847.)

HARTLEPOOL BAY, Com. Slater, 1838 and 47. Price 3s.

TIDE TABLES FOR 1848. Price 1s. 6d.

EXAMINATION OF MASTERS AND MATES.
Continued from page 558.

Name of Party who has received the Certificate	Class of Certificate	Age	Present or last previous Service	Register Ticket	Where Exam.	When.
Roberts, H.	1st	30	Severn, 1800 tons (as chief mate)	19959	Portsmouth	4 June, 1847
Robertson, A.	2nd	46	Hydrabad, 694 tons	.....	London	26 May, 1846
Robinson, J. J.	2nd	28	Earl Grey, 571 tons (as mate)	20522	London	23 Jan. —
Robinson, W. T.	2nd	23	Raby Castle, 228 tons	.....	S. Shields	27 Nov. —
Rogers, J. M.	2nd	25	Clyde, 1159 tons ... (as chief officer)	55944	Portsmouth	30 Jan. 1847
Ross, John	1st	42	Hashemy, 638 tons	.....	London	23 April —
Russell, T. J.	1st	...	Anna Robertson ... 317 tons	345509	London	13 July, 1846
Ryrie, Alex.	1st extr	33	Hibernia, 1400 tons	.....	Liverpool	28 Nov. —
Salt, Matthew	2nd	...	John & Rebecca, 90	.....	Plymouth	23 Mar. —
Sawyer, T. W.	2nd	37	Teviot, 1121, tons... (as mate)	207729	London	13 Mar. 1847
Scott, T. S.	1st	...	Isabella Blyth, 443 tons (as mate)	325349	London	6 July, 1846
Shannon, Niel	1st	...	.....	.....	London	16 Dec. 1845
Sheppard, R.	2nd	...	Cinderella, 357 tons (as mate)	19053	London	20 Mar. 1846
Shiple, W.	3rd	32	Zaider, 217 tons ... (as mate)	.....	S. Shields	23 Jan. —
Shotten, R.	3rd	44	Hope, 213 tons	.....	S. Shields	21 Apr. 1847
Shuyler, R. S.	2nd	24	Avon, 1450 tons ... (as mate)	207728	London	23 Apr. —
Sims, F. A.	1st	28	Joshua Waddington 440 tons (as chief mate)	129064	Liverpool	13 Feb. —
Sinclair, L.	3rd	28	John Burrell, 243 ... tons (as chief mate)	.....	S. Shields	8 Apr. —
Smith, Charles	2nd	...	Tryphena, 131 tons (as mate)	.....	London	20 Mar. 1846
Smith, John	1st	...	Mars, .....	.....	Dundee	11 Dec. 1845
Smith, J. H.	1st	...	.....	.....	London	28 Nov. —
Smith, W.	2nd	25	Tynemouth Castle 280 tons (as mate)	.....	S. Shields	20 Jan. 1846
Smith, John	2nd	27	.....	45318	S. Shields	13 Feb. —
Smith, Andrew	3rd	26	Jane, 220 tons ... (as mate)	.....	S. Shields	14 Jan. 1847
Smith, Andrew	3rd	26	Chance, 226 tons ...	.....	S. Shields	19 Mar. —
Snelling, W. S.	1st	24	Mary Ann, 216 tons	.....	Liverpool	16 Feb. —
Sparrow, James	1st extr	23	Levantine, 343 tons (as first officer)	159836	Liverpool	9 Feb. —
Spicer, John	1st extr	28	Osprey, 98 tons..... (as mate)	97917	Plymouth	13 Jan. —
Staincup, W.	2nd	31	Onyx, 278 tons (as mate)	45385	S. Shields	9 Feb. 1846
Staincup, W.	2nd	31	Onyx, 278 tons (late mate)	.....	S. Shields	23 Nov. —
Stephens, J.	3rd	29	.....	54150	S. Shields	13 Feb. —
Stephens, J.	2nd	39	Dorothy, 244 tons	.....	S. Shields	3 May, 1847
Stewart, Fran.	2nd	26	Arun, 309 tons (as mate)	.....	London	8 May, 1846

Stone, James	1st	31	Hibernia, 1400 tons	108019	Liverpool	29 Dec. 1846
	extr		(<i>as mate</i>)			
Stonehouse, D.	2nd	30	Harmony, 238 tons	.....	S. Shields	19 Mar. —
Stonor, Thos.	2nd	25	Sybria, 171 tons	175096	Dundee	16 Dec. —
			(<i>as mate</i>)			
Storey, Robert	2nd	25	Renovation, 350 tons	.....	S. Shields	3 Feb. 1847
			(<i>as mate</i>)			
Stowell, Thos.	2nd	23	Auspicious, 245 tons	138650	S. Shields	30 Dec. 1846
			(<i>as mate</i>)			
Stride, Robert	2nd	32	Isabella Blyth, 443 tons	343866	London	4 Feb. 1847
			(<i>as mate</i>)			
Stuart, Francis	1st	27	City of Derry, 447 tons	18059	London	10 May —
			(<i>as mate</i>)			
Sturdee, E. T.	1st	30	Tay, 1856 tons	.....	Portsmouth	30 Dec. 1846
Sturley, W. J.	2nd	...	Earl of Leicester 147 tons	274390	London	21 Sep. —
			(<i>as mate</i>)			
Sturrock, J. D.	2nd	21	Alexander, 324 tons	247169	Dundee	23 Mar. —
Swan, Joseph	2nd	21	.....	.....	Newcastle	26 Feb. 1847
Swan, Thomas	2nd	26	Catherina, 263 tons	.....	S. Shields	10 Feb. —
			(<i>as mate</i>)			
Swinton, Edulf	2nd	31	Reliance, 605 tons	.....	London	22 Dec. 1846
Symons, W.	2nd	42	Clyde, 1853 tons	.....	Portsmouth	23 Jan. 1847
Taylor, W.	2nd	26	Tyne, 210 tons	.....	S. Shields	25 June, 1848
Taylor, R. M.	2nd	23	Mary, 207 tons	.....	S. Shields	25 Jan. 1847
Taylor, T. P.	1st	28	Anna Maria, 487 tons	.....	London	4 May —
Telfer, F.	1st	27	Satellite, 300 tons	.....	London	8 June, 1846
Tindale, C. S.	1st	30	May Flower, 327 tons	5376	London	20 May, 1847
			(<i>as mate</i>)			
Totherick, J.	2nd	25	Rollo, 292 tons	.....	S. Shields	17 Feb. 1846
Thom, William	2nd	28	Arethusa, 209 tons	17598	London	19 May, 1847
			(<i>as mate</i>)			
Thomas, John	1st	26	Eliz. Grange, 350 tons	255905	Liverpool	17 Nov. 1846
	extr		(<i>as chief mate</i>)			
Thomas, T.	3rd	39	Salus, 301 tons	.....	S. Shields	10 Dec. —
			(<i>as mate</i>)			
Thompson, J.	1st	28	Renovation, 325 tons	.....	S. Shields	13 Jan. —
Thompson, G.	2nd	37	Jos. Somes, 774 tons	.....	London	29 April 1847
Thompson, J. J.	2nd	25	Watkins, 236 tons	.....	S. Shields	22 April —
			(<i>as mate</i>)			
Tracy, J.	1st	...	Severn, (<i>as chief officer</i>)	336518	Portsmouth	27 Aug. 1846
Train, George	3rd	...	Bradford, 195 tons	.....	S. Shields	30 July —
Trivett, J. F.	1st	35	Iris, 230 tons	.....	London	12 Nov. —
Turner, G.	2nd	30	Middleton, 316 tons	185185	S. Shields	29 Jan. —
			(<i>as mate</i>)			
Turner, W. C.	2nd	...	Oriental Queen, 645 tons	326635	London	1 Oct. —
			(<i>as mate</i>)			
Urquhart, J.	2nd	25	D. of Northumberland, 541 tons	329112	London	23 April, 1847
			(<i>as mate</i>)			
Walker, R.	1st	28	Calcutta, 716 tons	121012	Liverpool	23 Feb. —
			(<i>as second mate</i>)			
Waugh, Henry	1st	...	Samarang, 600 tons	28782	London	3 April 1846
			(<i>as mate</i>)			
Waugh, Henry	1st	25	Samarang, 600 tons	28782	London	13 May, 1847
	extr		(<i>as mate</i>)			
Weynton, A. J.	2nd	...	Australasian Packet, 180 tons	327399	London	10 Aug. 1846
			(<i>as mate</i>)			

Whitby, G.	2nd	29	Bucephalus, 985 tons (<i>as mate</i>)	26882	London	29 May, 1847
White Henry	2nd	...	Tory, 483 tons (<i>as chief officer</i>)	29979	Portsmouth	29 Sept. 1846
White, Alex.	2nd	27	Mary Bannatyne 535 tons (<i>as mate</i>)	18247	London	20 May, 1847
Whitehead, J.	2nd	35	Duke of Cornwall 580 tons	.....	London	25 May, —
Whyte, Alex.	2nd	29	Oregon, 928 tons ... (<i>as mate</i>)	118659	Dundee	26 Aug. 1846
Whyte, John	2nd	42	Berkshire, 583 tons	.....	London	14 May, 1847
Wild, R.	2nd	...	Buctouch, 284 tons	.....	London	24 Aug. 1846
Wilkinson, S. L.	2nd	29	Briton, 240 tons ...	15688	London	10 Dec. —
Williams, John	1st	...	Chelydra, 350 tons	.....	London	6 Aug. —
Wilson, John	3rd	31	Navigator, 130 tons	.....	S. Shields	14 Jan. —
Wilson, R. jun.	2nd	...	Blackett & Ridley, 213 tons	.....	S. Shields	9 June, —
Wilson, A.	1st	24	Avon, 1800 tons ... (<i>as second officer</i>)	341240	Portsmouth	30 Dec. —
Wilson, G. H.	1st	27	Severn, 1900 tons ... (<i>as chief officer</i>)	252553	Portsmouth	4 Mar. 1847
Wishart, D. D.	1st	32	Margaret, 251 tons	.....	London	18 Jan. —
Wolfe, H. J.	2nd	43	Avon, 1148 tons ... (<i>as chief officer</i>)	252704	Portsmouth	26 Apr. —
Wood, Thomas	2nd	39	Jennett, 236 tons ...	.....	S. Shields	9 Feb. 1846
Woolley, Fred	1st	...	Eagle, 600 tons (<i>as chief officer</i>)	207718	London	27 Mar. —
Work, John	3rd	34	Duke of Clarence 229 tons	.....	S. Shields	7 Oct. —
Work, John	2nd	35	Duke of Clarence... 229 tons	.....	S. Shields	27 Apr. 1847
Young, Chas.	2nd	33	W. Wilson, 407 tons	327316	London	20 Feb 1846

MATES.

Achesson, A.H.	2nd	21	Blenheim, 700 tons (<i>as ordinary seaman</i>)	238051	Portsmouth	18 June, 1846
Allen, Robt.	1st	...	.....	.....	Dundee	10 Dec. 1845
Bowden, Thos.	2nd	...	Queen Victoria, 634 tons (<i>as apprentice</i>)	327544	London	9 Mar. 1846
Bridie, James	1st	...	.....	.....	Dundee	19 Dec. 1845
Callard, Henry	2nd	...	H.M.S. Fly..... (<i>as able seaman</i>)	338404	Plymouth	4 Aug. 1846
Cleveland, R. L.	1st	22	Orlando, 344 tons ... (<i>as second mate</i>)	17506	Portsmouth	27 Apr. —
Cleveland, G.H.	2nd	26	Japan 359 tons (<i>as second mate</i>)	34391	Portsmouth	19 Mar. 1847
Cooper, George	2nd	22	Achilles, 448 tons...	116563	Dundee	30 Dec. 1846
Craggs, D. E.	3rd	...	.....	.....	Plymouth	12 Jan. —
Crompton, C.G.	1st	...	Meg Merrills, 314 tons (<i>as apprentice & mate</i>)	307555	Portsmouth	10 Mar. —
Cross, Edwin	3rd	...	Hope, 163 tons... ..	38958	London	1 Sept. —
Dall, George	1st	22	Aurora, 136 tons ...	64546	Dundee	27 Feb. —
Deane, John	2nd	...	Dahlia, 646 tons ...	24401	Plymouth	6 Mar. —
Ducat, P. S.	3rd	22	Livonia, 177 tons	12140	Dundee	23 Jan. —
Dundas, R. T.	2nd	21	Garland, 162 tons... (<i>as able seaman</i>)	324896	Liverpool	23 Feb. 1847

Ella, Henry B.	2nd	...	Gil Blas, 145 tons	104620	London	17 Sept. 1846
Forbes, T. M.	2nd	24	Barham 1200 tons... (as midshipman)	22097	London	13 May, 1847
Gammon, J. E.	2nd	...	Alert, 394 tons (as able seaman)	204813	London	5 Mar. 1846
Gardyne, John	1st	.....	.....	.....	Dundee	26 Dec. 1845
Gilbert, Hump.	3rd	...	Dahlia, 646 tons ... (as seaman)	.....	Plymouth	6 Mar. 1846
Gilbert, J. V.	2nd	23	Saucy Jack, 165 ton	50403	Dundee	6 Mar. —
Gilks William	2nd	...	Isab. Blyth, 443 tons	17519	London	6 Aug. —
Gray, John	2nd	.....	.....	.....	London	1 Dec. 1845
Hean, David	2nd	23	Elgin,	235543	Dundee	4 May, 1846
Hynd, William	3rd	26	Commodore Napier 291 tons (as seaman)	57480	Dundee	20 Jan. 1847
Imrie, William	1st	...	Java, 1175 tons	307578	Portsmouth	20 Mar. 1846
James, J. W.	2nd	.....	.....	.....	Newcastle	15 Feb. 1847
Johnson, John	1st	24	Felicity, 298 tons ...	96710	Liverpool	29 Dec. 1846
Johnson, R. K.	2nd	24	.....	.....	Newcastle	20 Mar. 1847
Keen, Thomas	2nd	24	Camilla, 148 tons ...	74415	London	23 Jan. 1846
Kenny, Robert	1st	...	H.M.St. Sp. Ardent (as quarter master)	326149	London	27 Feb. —
Laing, James	2nd	27	Edmondsbury, 523 tons	18927	London	22 May, 1847
Lapidge, W. F.	1st	25	Grecian, 486 tons ... (as senior mate)	.....	Plymouth	9 Mar. —
Latto, Andrew	1st	22	Mars, 423 tons	104493	Dundee	12 Nov. 1846
Madox, F. M.	2nd	25	Conway, 1350 tons (as second officer)	26245	Portsmouth	16 Mar. 1847
Menzies, Rob.	1st	.....	.....	.....	Leith	7 Oct 1846
Metherall, J.	2nd	23	Fanny, 233 tons ...	241988	Plymouth	29 Jan. 1847
Napier, David	2nd	.....	.....	.....	Newcastle	23 July 1846
Norie, W. F.	2nd	21	Ellen 230 tons	7711	London	22 May, 1847
O'Slaughter, D. Charles	1st	27	Queen, 3000 tons ... (as midshipman)	.....	Plymouth	6 April —
Pearce, A. F.	1st	...	Louisa Munro, 300 tons (as chief mate)	19723	Portsmouth	26 Mar. 1846
Philips, John	3rd	...	Charles Buchan, 130 tons (as master)	265050	London	27 Mar. —
Pridham, W. F.	3rd	28	Chili, 700 tons	327249	London	8 April 1847
Roy, J. Wild.	2nd	...	Duke of Bronte, 424 tons	343620	London	11 June, 1846
Skerrett, J. C.	1st	22	Litherland, 305 tons (as second mate)	163379	Liverpool	27 April 1847
Sladeen F. B.	2nd	22	Lee, 79 tons	28274	London	18 Feb. —
Spencer, John	3rd	31	Psyche, 260 tons ...	27046	London	17 Feb. 1846
Stephens, W.	3rd	22	Wellington, 500 tons (as third mate)	32428	Plymouth	20 Mar. 1847
Stephenson, R.	2nd	36	Graham, 402 tons ...	327400	London	1 June, 1846
Thatcher, T. W.	2nd	28	Thames, 852 tons ... (as first officer)	220694	Portsmouth	13 May. 1847
Torr, Geo. B.	2nd	...	Chief-Just. Robinson 500 tons	32756	London	27 Feb. 1846
Wade, Nath.	3rd	...	New Jane, 74 tons	77730	Plymouth	13 Mar. —
Watson, Josh.	1st	.....	.....	.....	London	3 Jan. —
Wise, H. W. C.	2nd	20	Royal Albert 662 tn. (as ordinary seaman)	250379	Plymouth	13 May, 1847

WOOLWICH.—*Royal Arsenal*.—Such is the demand for military stores in consequence of the vast increase of guns and carriages required for the coast defences, and the advanced ships preparing for commission, that orders have been received for the entry of more than one hundred mechanics and labourers for the royal carriage department of the Royal Arsenal. The establishment now employs more men than it did during the war of 1814. The buildings are now inadequate to the accomodation of so large a body of workmen, and the department is to be enlarged.

THE ISLAND OF POONAH.

Letters have been received from the ships *Herald* and *Pandora*, dated Guayaquil, September 16th. They left Callao on the 23rd of July, and after calling in at Payta on their way up, arrived at the river Guayaquil on the 31st, and commenced their survey at the Island of Poonah. About 12 miles up the river there is a bar, which can only be crossed at spring tides. The river is about a mile and a half in width, very rapid and muddy, the banks of slimy mud, dotted in every direction with alligators. The ships continued moving up the river by six and eight miles at a time, in order to allow of the boats returning to the ship every night, as the mist and smell would be highly injurious to the men if sleeping in open boats. The scenery is very like that of the rivers on the coast of Africa, and almost as productive of fever. About ten miles below Guayaquil the river is not more than half a mile wide, and the banks dense mangrove swamps. All breezes are excluded, and the air is insufferably hot, although it is now called the "cool season." The town presented a very pretty appearance at the time being built on the bank of the river, with windows all lighted up for the evening visiting parties. A promenade runs the whole length of the town between the houses and the river. The officers of the ships received great attention and kindness from the inhabitants. The town is chiefly built of wood, and the French possess most of the retail trade. Cocoa is shipped here in large quantities for Spain and the United States. The water for the use of the town is brought from a considerable distance up the river, in earthen jars, from a hundred to a hundred and fifty of which are packed on a *bolsa* (logs of very light wood lashed together with vine), and floated down. The river opposite to the town is fresh at the last of the ebb, but the water is considered unfit for drinking, passing as it does through a mass of poisonous mangroves. The mosquitoes are so troublesome that the ships lying opposite to the town are obliged to send their crews on shore at night. On the 25th they had completed their survey, and descended the river, and anchored on the 29th at Poonah, outside the bar, where the captain and sixty of the officers and men, in two divisions of three boats each, proceeded to survey the island, which would occupy them ten days. They expected to quit the neighbourhood on the 16th, and proceed upwards to Esmeraldez, so as to arrive at Panama about the end of November, then returning southward, to survey from Point Garrachino to Cherambirar; then to the Sandwich Islands in March, and to be at Mazatlan or San Blas in June. They will then again proceed northward to

the Gulf of California, and be again at San Blas in November, 1848. The Pandora has been sent, by order of the Admiral to the Gallapagos, to look after coal, as the surgeon of a Yankee whaler had reported that he had seen some in those islands. She had just returned when our letters came away, but we are unable to learn the result of her visit. Saw mills are rapidly finding their way out here, so that a discovery of such a valuable mineral would be inestimable, when it has now to be brought across the Atlantic. The Grampus, Collingwood, and Carysfort, were at Valparaiso on the 27th of August. The Constance is daily expected to arrive there from the northward, whither she had gone to collect freight.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

CAPTAINS—The Hon. R. Gore, late M.P., has been appointed Chargé d' Affaires and Consul General at Monte Video, vice Mr. Turner, who has retired—R. Tryon of *Mutine*, vice Willes, deceased.

COMMANDERS—W. H. Webb (1840)—L. B. Mackinnon—J. J. Palmer.

LIEUTENANTS—R. Bateman (1846)—S. J. Greville (1846)—J. H. Howard (1847)—N. D. Blenherhassett (1831)—E. F. Dent, acting mate, (1846)—H. D. Hickley, acting mate, (1846)—The Hon. A. L. C. Cochrane (1845)—J. B. Scott—C. O. B. Hall.

SURGEONS—A. Browning and G. Evans (1842), the latter to the *Bellerophon*.

APPOINTMENTS.

CAPTAINS—F. W. Beechey to *Caledonia*—H. W. Bruce to *Queen*—Sir H. Leeke, KNT., K.H., to *San Josef*—C. Hope to *Trafalgar*—W. L. Sheringham to *Victory*—R. A. Yates to *Blenheim*—S. C. Dacres (1840) to *St. Vincent*.

COMMANDERS—W. Ellis to *Alert*—G. H. Richards to *Acheron*—F. Kemble (inspecting) to the Coast Guard—E. Pierce to *Nerbudda*—H. Dunlop to *Star*, vice Ellis—A. Little (1846) to *Queen*—G. A. Frazer (1841) to *Crocodile*—J. B. West to *Bellerophon*—G. Ogle to *Victory*—S. H. Christian to *Trafalgar*.

LIEUTENANTS—H. A. Hollingsworth to *Raleigh*—W. U. L. Lockyer to *Caledonia*—G. Raymond to *Widgeon*—S. S.

Greville to *Vengeance*—H. J. Bloomfield to *Odin*—F. Moresby to *Cambrian*—J. B. Ballard (1843) to *Raleigh*—J. R. Harwood (1846) to *Penelope*—G. H. Thomas (1846) to *Alert*—R. Bateman reappointed to *Excellent*—C. G. Rigge (1838) to command *Comet*, str.-v.—M. H. Rodney (1840), E. S. Hinde (1844), R. Patey (1843) to *Nerbudda*—P. H. Young (1845) to study at the steam factory at Woolwich—E. Horrock (1815) to *Victory*—A. C. Strode to *Excellent*—W. Moorsom and W. J. Pollard to *Alert*—H. L. Cox and H. G. Veitch to *Victory*—E. F. Roberts to *Porcupine*—J. R. Black and W. Thomas to transport service—E. R. Read, G. L. Boyar, H. W. Comber, and R. B. Oldfield to *Meander*—R. E. Bullen to *Victory*—T. E. L. Moore to *Plover*—W. F. G. Fead to *Hibernia*—J. Cartwright to *Bellisle*—B. G. Rowles to *Queen*—W. R. G. Palliser to *Gladiator*.

MASTERS—F. J. O. Evans to *Acheron*—J. E. Petty to *Lightning*—J. Rundle to *Cockatrice*—W. J. Luke to *Fly*—G. H. Loveridge (acting) to *Alert*—J. Wallis to *Nerbudda*—F. H. May to *Meander*—C. Pope to *San Josef*—J. B. Tucker to *Queen*—G. H. Blakey (act.) to *Stromboli*.

MATES—N. E. Stone, C. B. Payne, D. Spain, C. T. Currie, and J. Burgess to *Excellent*—G. C. Grylls to *Sidon*—F. A. L. Bullock to *Fisgard*

SECOND-MASTERS—J. W. Smith to *Acheron*—E. Swain to *Vindictive*, 50 flag ship—R. Sturgess (1845) to *Crocodile*—W. P. Haines to *Birkenhead*—E. J. Kemp to *Porcupine*.

MIDSHIPMEN—M. Smallpage to *Hecate* strn. sloop—D. Walker to *Arab*, 16—F.

S. Twysden to *Asia*, 84—C. Standish to *Bellerophon*—R. Deane to *Hibernia*, 104—J. W. H. Thomson to *Excellent*—R. Bradshaw to *Acheron*, s'm sloop—H. Cotter and G. F. Low to *Nerbudda*—W. Clark to *Asia*—H. Hathorn to *Excellent*—D. Walker to *Bellerophon*—E. N. Russell to *Excellent*—G. J. M. Shirreff, W. C. S. Sullivan, and A. Bedford to *Alert*—J. H. M. Calcroft to *Sidon*—M. J. Parks to *Victory*—R. P. Cator, J. H. Coxon, T. Saumarez, and P. Staples to *Ocean*—R. P. Gresham to *Birkenhead*—W. D. Harris to *Excellent*.

NAVAL CADETS—F. G. P. Kemp, P. A. Maekesy, N. D. F. Lellington, F. H. Mackenzie, and G. Y. R. Rattray to *Bellerophon*—C. Bridger and J. Brockman to *Amphion*—H. Lees to *Arab*—J. Suttie to *San Josef*—A. Eaton to *Amphion*—A. Lenon to *Bellerophon*, 78—H. Bathurst to *Fly*, 20—R. Walker to *Acheron*—G. Rivington to *Penelope*—H. D. Grant to *Eagle*—F. O. Handfield to *Nerbudda*—C. Baillie to *Asia*, 84—S. Curtis to *Amphion*—W. Bennett to *Canopus*—A. E. Pierson to *Trafalgar*—E. Hawes to *Acheron*—T. E. Carslake, J. Rudd, and J. W. N. Spalding to *Meander*.

MASTERS' ASSISTANTS—R. Reed to *Lightning*—R. Wheatland to *Cockatrice*—W. G. Aldrick to *Blazer*—C. J. Saunders to *Lightning*—W. Pearce to *Fly*—J. Chapple to *Oberon*—J. Molloy to *Hecate*—P. H. W. Oke and D. Pender to *Acheron*—W. Long to *Victory*—W. Shairp to *Asia*—M. Norman to *Nerbudda*—A.

Wylde to *Poictiers*—H. P. Ward to *Alert*—J. B. Ilaines to *Fly*—C. S. Williamson to *Bellerophon*—H. W. Gillham to *Stromboli*—W. Pead and J. Tucker to *Crocodile*—G. Polglaze and W. Long to *Comet*—A. Sidlatter to *Birkenhead*—J. F. R. Aylen to *Rhadamanthus*—C. Downward to *Ocean*—N. B. Herbert to *Terrible*.

SURGEONS—D. Lyall (1846) to *Acheron*—J. Patrick to *Nerbudda*—R. M. Cormick to *Fisgard*—T. W. Jewell to *Victory*—B. Bunce to *Ocean*—J. P. Burke m.d., to *Stromboli*—W. R. Dalton to *Cygnnet*—F. J. Whipple to *Alert*

ASSISTANT SURGEONS—G. Yeo to *Stromboli*—L. Carey to *Porcupine*—J. Ward to *Vengeance*—H. Gimlett to *Lizard*—W. C. Tucker to *Raleigh*—C. S. Lester to *Bellisle*

PAYMASTERS AND PURSERS—W. Hamley to be Secretary to Commodore Plmridge—H. Tucker to *Acheron*—J. Hugbins to *Ocean*—H. Cooper to *Fly*—C. E. P. Hall to *Alert*—R. H. Bullen to *Nerbudda*—G. Simmonds to *Meander*.

CLEKKS—E. G. Hooper to *Hibernia*—B. P. Heather to *Blazer*—G. G. Rickets and C. J. Prance to *Nerbudda*—H. S. Dyer to *Caledonia*, 120—C. Saunders to *Terrible*—C. P. Fillon to *Alert*—E. G. Hooper to *Fly*—F. C. Dusantry to *Stromboli*.

ENGINEERS—W. J. Pook and H. Thomson to *Fisgard*, 42—C. Hobbs to *Birkenhead*—C. W. Jeffrey to *Fisgard*.

MARRIAGES AND DEATHS.

Marriages.

On the 17th of Nov., at Great Yarmouth, by the Rev. Duncane Travers, the Rev. C. J. Fisher, M.A., Rector of Ovington and Tilbury, Essex, to Mary, daughter of Capt. Sir Eaton Stannard Travers, R.N.

On the 20th of Nov., at Alverstoke Church, near Gosport, Mr. T. Forster, R.N., to Miss Maria Varney, both of Gosport.

Deaths.

On the 25th of Nov., at the Royal Hospital at Haslar, S. J. Butcher, esq., Paymaster and Purser of the Birkenhead steam-frigate.

On the 27th of Nov., at Great Prospect Terrace, Portsea, Mr. W. Davies, Paymaster and Purser, R.N., aged 50.

On the 29th of Nov., at his residence in Chapel-street, Gosport, Mr. J. Hammond, after fifty years service as Clerk at the Royal Naval Medical Establishment at Haslar, aged 70.

METEOROLOGICAL REGISTER.

Kept at Croom's Hill, Greenwich, by Mr. W. Rogerson, of the Royal Observatory
From the 21st of October, to the 20th of November, 1847.

Month Day	Week Day	Barometer In Inches and Decimals.		Fahrenheit Thermometer In the Shade.				Wind.				Weather.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min	Max	Quarter		Strength		A.M.	P.M.
								A.M.	P.M.	A.M.	P.M.		
21	Th.	29.78	29.92	52	55	48	57	SW	W	4	4	or (2)	bc
22	F.	30.12	30.06	48	57	41	58	SW	SW	3	4	b	bc
23	S.	29.84	29.62	57	56	49	57	SW	SW	5	6	qor (2)	qor (3) (4)
24	Sa.	29.78	29.72	44	49	42	50	SW	W	4	2	bc	or 3)
25	M.	29.98	30.10	42	49	38	50	W	NW	3	3	bc	bcm
26	Tu.	30.38	30.27	38	52	25	53	SW	SW	1	1	bc	o
27	W.	30.37	30.25	49	52	44	53	SW	SW	2	1	o	or (3) (4)
28	Th.	30.26	30.31	52	55	49	56	SW	SW	1	2	o	o
29	F.	30.25	30.22	52	58	50	59	W	W	2	2	om	bc
30	S.	30.32	30.24	47	55	45	57	S	S	1	1	bcm	o
31	Sa.	30.11	30.15	57	58	53	59	W	SW	3	3	o	o
1	M.	30.24	30.32	55	60	53	61	SW	S	3	3	bc	l
2	Tu.	30.36	30.37	52	53	48	55	S	N	2	1	b	bef
3	W.	30.32	30.29	48	48	45	49	E	E	1	1	of	of
4	Th.	30.25	30.20	46	48	44	49	SE	SE	1	1	otr (2)	of
5	F.	30.06	29.98	47	52	45	53	SE	SW	2	4	o	bc
6	S.	30.06	30.00	52	54	50	52	S	S	3	2	o	or (3) (4)
7	Sa.	29.93	29.87	55	57	51	59	SW	SW	3	4	op (3)	bc
8	M.	29.65	29.56	55	57	52	59	S	S	5	6	qbc	qbc (3)
9	Tu.	29.88	30.02	45	51	44	52	SW	NW	2	2	b	bc
10	W.	30.32	30.29	39	52	26	53	SW	SW	2	4	b	b
11	Th.	30.26	30.19	50	53	42	54	SW	SW	2	3	bc	o
12	F.	30.04	30.08	54	49	46	54	W	NW	3	4	od (2)	op (3) (4)
13	S.	30.25	30.25	40	50	39	51	W	W	2	2	bm	bc
14	Sa.	30.31	30.26	47	52	45	53	SW	SW	2	1	o	bcd (4)
15	M.	30.25	30.24	55	57	52	58	W	W	3	2	o	o
16	Tu.	30.22	30.19	52	48	48	52	SW	N	5	4	qor (2)	od (3)
17	W.	30.09	30.12	41	42	38	42	N	N	6	6	qbc	qbc
18	Th.	30.32	30.34	34	40	33	41	N	N	5	5	bc	qb
19	F.	30.36	30.32	29	34	27	35	SW	SW	2	1	bcm	bm
20	S.	30.19	30.05	31	38	28	40	SW	NW	1	1	of	of

October, 1847.—Mean height of the Barometer=29.945 inches; Mean temperature=53.1 degrees; depth of rain fallen= 2.60 inch.

NOTICE TO OUR CORRESPONDENTS.

Our thanks to "Stormy Jack" for his letter.

In compliance with the wishes of an "Old Subscriber," we can only inform him that the book is published in Hamburg, we do not know where it can be purchased in London.

Hunt, Printer, 3, New Church Street, Edgware Road.

GENERAL INDEX TO VOL. FOR 1847.

ENLARGED SERIES.

- Abolition of the light dues, 19, 87.
 Account of an exploring expedition, 398.
 Aden, remarks on, 246.
 Admiralty court, 423, 499.
 ——— orders, 599.
 Akyab port, directions for, 267.
 Amazon, river of, report on, 629.
 ——— woman, statue of, found, 633.
 American steamers and Rodger's anchor, 238.
 Amherst, sands off, 421.
 Amount of rain in inches, table of, 54, 109, 166, 222, 278, 333, 389, 446, 502, 557.
 Anatto bay, plan of, 321.
 Anchors, 162.
 ——— Rodger's, and American steamers, 238.
 Andor harbour, 226.
 Andros island, Archipelago, 447.
 Anti-shipwreck league, 203.
 Anton Lizardo, directions for, 376.
 Appointments and promotions, 52, 106, 163, 220, 277, 335, 391, 445, 501, 559, 686.
 Arctic expedition, 37, 93.
 ——— Hudson's Bay Company's, 617.
 Arc of longitude between Greenwich and Valentia, 282.
 Archipelago, Andros island, 447.
 Arguin and its victims, 42.
 Armament, new, for steam navigation, 424.
 Atmospheric railways and steam navigation, 294, 349.
 Aurora Borealis, 642.
 Australia, Barrier reef of, 540.
 ——— North west coast of, 414.
 ——— Steam extension, 542.
 Auto-biographical sketches, 27, 73, 121, 191, 252, 355, 471, 529.
 NO. 12.—VOL. XV.
 Bangkok, 215.
 Barbados, want of light at, 256.
 Bark Patna, 422.
 Barnett, Com., observations at Bermuda, 273.
 Barometer, remarks on, 36.
 Barrier reef of Australia, 540.
 Beacon buoys, Kullen and Helsingborg, 675.
 Beacon on the Tongue sand, 552.
 ——— Lappegrund, 497.
 ——— South Calliper, washed away, 675.
 Beagle's voyage, 287.
 Bear haven light-house, 420.
 Becher's, Com., artificial horizon, 419.
 Berghan's atlas, 331.
 Bermuda, observations at, 273.
 Births, Marriages, Deaths, 56, 108, 164, 223, 227, 336, 392, 445, 503, 559, 685.
 Blyth Sand beacon, 493.
 Bombay light-house, 266.
 Borneo pirates, 259, 447.
 ——— and Labuan, 602.
 Bottle papers, 260, 268, 381, 422, 499, 598.
 Breakwater, Plymouth Sound, 420.
 Brief narrative of the conduct of Capt. Isomonger, 42.
 Bristol channel, survey of, 638
 British channel, shifting of sandbanks in, 58.
 ——— Merchant service, state of, 252, 529.
 ——— Shipping, wrecks of, 44, 95, 269, 324, 388, 353.
 Broad Fourteens, (shoals,) origin of, 344.
 Burnett's solution of problems, 546.
 Buoys, Cockle Gat, 265,
 ——— Goodwin sands, 378.
 ——— North channel, 580.
 ——— Nun, on south Calliper, 678.
 ——— on Scroby sand, 679.

- Buoys, on the Salt Scar, 204
 — Princes channel, 675.
 — Ras Marbot, 250.
 — River Middle, 322.
 — Scroby Elbow, 265.
 — Shivering sand, 266.
 — Swin channel, 378.
 — West Inner shoal, 265.
 — West Scroby, 265.
- Cahir-civcen, Kerry, 499.
 Calicut light, 422.
 Cape Chapman, coast of America,
 — Crozier, coast of America, 626.
 — Elling, 627.
 — Faquer, notice, on reported rock,
 493.
 — Fullerton, 618.
 — Horn light-house, 163.
 — Lady Polly, 620.
 — Lady Simpson, 627.
 — Samana, 449.
 Captain and part of a crew murdered,
 541.
 Carimata passage, and eastern route to
 Singapore, 169.
 Carmorian reef, 608.
 Caskets, bell on, 381,
 Caution to Masters of vessels, 672.
 — captains, 423
 — seamen, 421, 549.
 Cawood bay, Port Jessie, 498
 Central Africa, discovery in, 538.
 Chang-Chau, trip to, 402.
 Channel islands, bell on Caskets, 381.
 Charts, 106, 220, 332, 388, 447, 500, 553,
 680.
 — inaccuracies in, 672,
 — of the Sea of Marmora, 161.
 Chat about the winds, 526, 569.
 Chemical notes, for the use of sailors,
 509.
 China, 455.
 — Sea, 204.
 — typhoon in, 19.
 Chinha islands, stores of guano on, 149
 Chinese, 492, 604.
 Chusan to Port Essington, 1.
 Cinque Ports, 178, 233, 299, 343.
 Circular storms and temporary rudder,
 86.
 Cleopatra, loss of, 601.
 Coast of Australia, 414.
 — New Zealand, remarks on,
 459, 514.
 Cockle Gat, Yarmouth, 494.
 Cockle Sands, 494.
 College at Penge, for the Widows of
 Naval Officers, 491.
 Collinson's, Capt., directions for China,
 319.
 Com. Becher's Artificial Horizon, 419.
 — C. O. Hayes remarks on the coast
 of New Zealand, 459.
 Composition for ship's bottom, 500.
 Coolies, Emigration of, 213.
 Copy of a letter to Dr. W. Hyde Wol-
 laston, 442.
 Conservancy of the Thames, 140.
 Contraction of the whirlwind, 576.
 Court martial 308, 432.
 Cross sands off Yarmouth, 493.
 Currents, northerly between Guardafui
 and Socotra, 247.
 — on Mexican coast, 268.
 — easterly off Burnt Island, 248
- Dardanellas, piracy at, 42,
 Deep, treasures of, 545.
 Deer shooting, by Esquimaux, 622.
 Directions for Akyab Port, 267.
 — the Kii Island, 225.
 — entering Kenmore River
 199.
 — River Tay, 597.
 — of the Trade Wind, 452.
 Discovery, in central Africa, 538.
 Divisions of Practical Navigation, 139.
 Dover Harbour, 11.
 Drifting Wrecks, 49.
 Dust in the Atlantic Ocean, 80.
 Dyer Island Reef, 550.
- Earth's rotary motion, hypothesis of,
 452.
 Earthquake in Christiansted, St. Croix,
 263.
 East India Islands, notes on, 57.
 Eastern route to Singapore, 169.
 Effects of wind on the tides at Rams-
 gate, 65.
 Egyptian frigate, 604.
 Elizabeth, port of, 605.
 Engineers, in Royal Navy, rank of, 429
 Epauettes, gold lace, how to clean, 508.
 Esquimaux, 619.
 Estuary of the River Exe, 131, 195.
 Essington, port, 1.

- Equator, crossing the, 580.
 Equatorial current, 452.
 Examinations at Woolwich, 273.
 Examination of a Master of a British merchant ship, 70.
 ——— Masters and Mates in the Merchant Service, 148, 208, 362, 481, 553, 609, 681.
 Exmouth, loss of, 324.
 Experiments made with the Fumific Impeller, 183, 4C9.
 Exploring expedition S. W. of Nelson, 304, 338, 398.
 Explosion from fire damp, 36.
 Extension of steam, 542.
- Fisgard, H. M. S., struck by lightning, 205.
 Fixed light at Ceara, 97.
 Floating of the Great Britain, 535.
 French navy, 94.
 French seaman, generous conduct of, 136.
 Friendly Islands, volcano eruption at, 270.
 Free port, Macassar, 41.
 Fumific impeller, 183, 409.
- Gallant conduct of a midshipman, 110.
 Generous conduct of a French seaman, 136.
 Geography and hydrography illustrated, 424.
 Geographical discoveries, 315.
 ——— positions of reefs in Pacific Ocean, 372.
 ——— new sand shoal Nantucket, 273.
 ——— progress of Empire and Civilization, 500.
 Gibraltar, private signals, 596.
 Gold epaulettes, to clean, 558.
 Goram islands, 225.
 Goodwin sands, 522.
 ——— origin of, 344.
 ——— new beacon, 496.
- Gracias a Dios, Cape, origin of name, 274.
 Great Britain steam ship, 89,
 ——— floating of, 535.
 Great circle, position on the arc of, 666.
 Great circle sailing, 132, 228, 337.
 Guiana seizure, 423.
 Gulf stream, rock in, 161.
- Harbours, Andor, 226.
 ——— Dover, 11.
 ——— Lowestoft, 595.
 ——— Ramsgate, 10.
 ——— of Refuge, 136.
 ——— on S. E. coast, remarks on, 9.
 Hartlepool, Heugh, lighthouse, 496.
 ——— pier lighthouse, 205.
 Helder, the, 581.
 Heligoland sand, origin of, 344.
 H. M. S. Fisgard struck by lightning, 205
 ——— Mastiff, Stromness, 548.
 ——— in commission, stations of, 45, 437.
 Horizon, Artificial, Com. Becher's, 85, 419.
 Hourly velocity of the wind, 166, 222, 446, 502, 557,
 Hypothesis of the earth's rotary motion, 293, 452.
 Humanity of a British seaman, 90.
 Hurricane, in the Havana, 216.
 ——— Sophia Frazer, 209.
 Hudson's Bay Company's arctic expedition, 617.
 Hythe, Cinque Port, 233.
- Ignition by accident on board ships, with chemical notes, 505.
 Illustrated geography and hydrography, 424.
 Incrustation of steam boilers, 151.
 India, 213.
 Indian method of catching fish, 630.
 Indians, Oregon, remarkable for their ears, 633.
 ——— Yaguas, attachment to their children, 631.
 Infexible, H.M.S., performance of, 372.
 Investigator's straits, 551.
 Iceland, Bear haven lighthouse, S.W. coast of, 420.
 Irish channel, 447.
 Islands, Arru, 226.
 ——— Goram, 225.
 ——— Kii, 225.
 ——— Matabellas 225.
 ——— Newly discovered, 268.
 ——— Simoa, 97.
- Isthmus of Suez, cutting through, 670.
- Janet and Helvetia, whalers, loss of, 228.

- Kenmare, river of, 199.
 Kii Islands, 225.
 Kororarika, 467.
- Lady Feversham, removal of, 34.
 Lang's temporary rudder, 258.
 Lappegrund beacons, 497.
 Law notices, 423, 499.
 — prosecutions, city of Rotterdam, 274.
 League, Anti-shipwreck, 203.
 Leeghwater steam engine, 153.
 Letter from one of the Mastiffs, 547.
 Life boats and buoys, 93.
 Light dues, abolition of, 19, 87.
 — Bahama bank, Isle of Man, 593.
 — Beaver Island, 39.
 — Calicut, 422.
 — Campanilla point, 323.
 — Coast of Spain, 591.
 — Faron, N. of Gothland, 322.
 — Houge sound and Nidington, 39.
 — Isle of Chausey,
 — Kingstown harbour, 594.
 — Loch Tyne, 377.
 — Minot's ledge, 596.
 — Moro, Havana, 378.
 — Point of Bel-Air, 496.
 — Porer rock, G. Venice, 379.
 — Procida channel, 376.
 — San Juan, 378.
 — St. George and Cape Gil Blas, 549.
- Lighthouse, Bear haven, 420.
 — Beaver island, 269.
 — Bombay, 265.
 — Cape Frehil, 268.
 — Cape Havre, 160.
 — Faron and Ystad, 678.
 — Hartlepool, experiment with gas in, 673.
 — Hartlepool, Heugh, 496.
 — Le Four Rock, 268.
 — N. W. coast of Cornwall, 495.
 — St. Paul's Island, N. Cape, fog bell, 269.
 — Trevoze Head, 495.
- Lily court's martial, 432.
 Liverpool, arrival of the Great Britain, 535.
 — changes in lights, &c., 594.
 Localities of Cinque Ports, 178, 233, 299, 343.
 Loch Clay, rock off, 155.
 — Ryan, lighthouse, 159.
- Lord Mayor's bay, 625.
 Lord Wenlock, merchantman, wreck of, 669.
 Longitude of New York City, 544.
 Loss of the Heroine, 172.
 — Sirius, 102, 217.
 — H.M.S. Sphynx, 91.
 — Tweed, 523.
 Lowestoft Harbour, 595.
 — and Yarmouth, sands off, 264.
 Loos Shoals, 376.
 Lugo rock, 265.
- Macassar, a free port, 41.
 Maclear's, Mr., geodetical operations, 271.
 Madeira mountains, distance seen at, 261.
 Magnetic, disturbance, 600.
 — telegraph, New York, 544.
 — variations, (1718), 346.
- Making passages, observations on, 172.
 Mantinalla shoal, 421.
 Margate sand, 494.
 Mariners, caution to, 421.
 Marmora, charts of the sea of, 161.
 Marriages and deaths, 56, 108, 164, 223, 277, 336, 392, 445, 508, 559, 616, 687.
- Master of a British merchant ship and his examiners, 70.
 — in the merchant service, 208.
 — and mates of merchant ships, examination of, 148, 362, 481, 553, 681.
- Mastiff, H.M.S., 547.
 Matabellas, 225.
 Medals for H.M. Navy, 369.
 Memoir of Sir John Barrow, 327, 386, 441.
- Merchant seamen's act, 607.
 — service, British, state of, 252.
- Meteorological Register, 111, 112, 168, 224, 280, 336, 392, 448, 504, 560, 616, 688.
- Method of obtaining warning of combustion, 505.
- Mexican government, opening of port, Altata, 676.
- Mexican coast, currents on, 268.
 Min, river, 37.
- Minot's Ledge light, 596.
 Mirage at Ramsgate, 457.
- Mitchell, Sir. Thos. notice of, 373.
- Monsoons in the Timour sea, making passage to, 172.

- Monster of the deep, 480.
 Montauk point, shoals off, 226.
 Mootapilly shoal, 422.
 Morecombe Bay, waterspout in, 479.
 Moreton Bay, directions for, 578
 Moulmain river, 421.
 Murder of the Capt. and part of the crew of an English ship, 541.
 Murder of Chinese Emigrants, 209.
- Narrative of H.M.S. Gorgon, 104.
 Nantucket, new sand, position of, 273.
 Nautical notices, 37, 96, 108, 155, 204, 260, 373, 420, 492, 549, 592, 672.
 Naval Engineers, 429.
 Navy of 12th century, 313.
 Navigation, feat of ship Queen, 270.
 Navy in Commission, 609.
 Nelson, exploring expedition to, 304, 338, 398.
 Nemesis, steamer, attack on pirates, 602.
 New beacon on the Goodwin Sands, 496.
 — Light at Sand Key, 161.
 — York, longitude of, 544.
 — Zealand, remarks on, 459, 514.
 Northern Lighthouses, 37.
 North Star, H.M.S. remarks of, 1, 84.
 — Australia, 419.
 — Cape of Europe, error in the longitude of, 674.
 — Channel into Moreton Bay, directions, 578.
 — west coast of Australia, 414.
 Notes on the E. I. Islands, 57.
- Ordinance for the prevention of piracy, 455.
- Pacific Whalers, 127, 244.
 Pandora, H.M.S., 154.
 Parry bay, coast of America, 628.
 Passage to the eastward through Torres Strait, and the Monsoons in the Timour sea, 113, 172.
 Pay of Engineers, 432.
 Pelby bay, coast of, America, 626,
 Phenomena of Terrestrial refraction, 67.
 — in Mount's Bay, 382.
 — Black sea, 385.
 Piddington's pamphlet, 505.
- Pilot staff at Tampico, 550.
 Piracy at the Mouth of the Dardanelles, 42.
 Pirates, Borneo, 259.
 Plymouth sound, breakwater, 420.
 Point of Bel-Air Light, Isle of Bourbon 496.
 — Hargrave, coast of America, 620.
 Portland harbour of refuge, 546.
 Port Jessie, Cawood Bay, 498.
 — Royal and its associations, 15.
 Pre-adamite monsters of the deep, 480.
 Prevention of Piracy, an ordinance for, 455.
 Princely present to Adm. Sir C. Ogle, 545.
 Private signals at Gibraltar, 596.
 Problem, solution of, 546.
 Procida channel light, 376.
 Progress of discovery in Africa, 538.
 Promotions and appointments, 52, 106, 163, 220, 277, 335, 391, 445, 501, 559, 686.
 Proposed new armament for the English steam navy, 424.
 Provisions for tropical climates, 383.
- Quebec, desertions at, 607.
 Queen Adelaide's College for the widows of officers of the Royal Navy, 491.
- Rain in inches from each point of compass, 54, 109, 166, 222, 278, 333, 446, 502, 557.
 Ramsgate harbour, 10, 136.
 — mirage at, 457.
 Recovery of steam ship Sphynx, 200.
 Red sea, volcano, 314.
 Refuge, harbours of, 130.
 Reef of Australia, 540.
 Register, meteorological, 111, 112, 168, 224, 280, 336, 392, 448, 504, 560, 616, 688.
 Remarks on Aden, 246.
 — on the coast of New Zealand, 514.
 — of H.M.S. North Star, 1, 84.
 — on New Zealand, 459.
 — on ships burnt and destroyed, 563, 634.
 Removal of the Lady Feversham, 34.
 Rennie's report on atmospheric railways, &c., 294, 349.

- Report on the river Amazon, 629.
 Reported rock in the Gulf Stream, 492
 Repulse bay, 619.
 Result of experiments made with the
 fumific impeller, 183.
 Revised and amended instructions, 155.
 Rhodes' signals, 373,
 River Exe, the estuary of, 131, 195.
 — Kenmare, 199.
 Rodger's anchors, 162.
 Route from Singapore to Sydney, 30.
 Royal Humane Society, award of medals,
 &c., 271.
 Royal Navy in Commission, 98.
 — at Portsmouth, 168.
 — armament of, 665.
 Royal Naval Female School, 306.
 Royal Steam Mail Packet Company's
 Steamer, 523.
 Rudder, temporary, Mr O. Lang's, 258.
 Rocks, Blanquilla, 376.
 — Broad Fourteens, origin of, 344.
 — Carmorian, 603.
 — Cook's Straits, 323.
 — Congleton's car, 381.
 — Formosa, 320.
 — Goodwin Sands, origin of, 344.
 — Gulf Stream, 161, 492.
 — Kohl and Helsingborg, 596.
 — Loch lay, 551.
 — Lugo, 265.
 — Loos Shoals, 376.
 — Mantinalla Shoal, 421.
 — Montauk Point, 266.
 — Montufar Shoal, 380.
 — Mootapilly Shoal, 422.
 — New South Shoals, Nantucket,
 273.
 — Postillion, 322.
 — Ship Johns, 320.
 — in the Solomon's Archipelago,
 266.
 — Straits of Sunda, 322.
 — Trinder Shoal, 319.
 — Unknown, 608.
- Sailing directions for entering the river
 Kenmare, 199.
 Samana, St. Domingo, 449.
 — harbour on Port Napoleon, 650.
 Sand Key, new light, 161.
 Sands off Yarmouth and Lowestoft,
 421
 — Amherst, 421.
- Sandbanks in the British Channel,
 shifting of, 58.
 San Juan de Nicaragua, 159.
 Sarawak River, Borneo, 447.
 Scale of Medicines, 103.
 Seaton high lighthouse, 205.
 Sentence of the court, 437.
 Sextant double, Capt. Beechey's, 385.
 — pocket, (George's), 303.
 Shanghai, port regulations of, 375.
 Shipping returns, for 1846, 278.
 Ships burnt and destroyed by spontaneous
 combustion, 583, 634.
 Ships' bottoms composition, 500.
 — burnt by lightning, 635.
 — trimmer, description of, 90.
 Shipwrecked, fishermen's and mariners'
 benevolent society, 94, 323, 370.
 Simpson's peninsula, 626.
 Simpson, Sir G., journey round the
 world, 329.
 Singapore to Sydney, route from, 40.
 — route to, 169.
 — to Sydney, steam from, 78.
 Sir Charles Ogle's present, 545.
 Sirius, loss of, 102, 217.
 Sketches, Auto-biographical, 27, 73,
 121, 191, 252, 355, 471, 529.
 — Naval, 650.
 Smyrna, piracy at, 272,
 Society islands, South Pacific, 646.
 Solomons' Archipelago, new dangers
 in, 266.
 Solution of the problem, 546.
 — of problem for navigators,
 647.
 Sophia Frazer, 209.
 South Islands, emigrants from, 663.
 South-west coast of Ireland, lighthouse
 420.
 Spain and her dream, 288.
 — proposed lights on the coast of,
 561
 Sphynx, H.M.S., loss of, 91.
 — steam ship, 200.
 Spontaneous combustion by accident
 on board steamer, 505.
 — ships destroyed
 by, 583.
 St. George and cape St. Blas lights
 549.
 Stations of H.M.S. in commission, 45,
 98, 437.
 Steam boilers, incrustation of, 151.
 — for propelling vessels, claims of,
 origin of, 241.
 — from Singapore to Sydney, 78.
 — extension, Australia, 542.

- Steam navigation and atmospheric railways, 240.
 ——— navy, new armament for, 424.
 ——— ships, the Great Britain, 89.
 ——— engine, Leeghwater, 153.
 Steamers American and Rodger's anchor, 238.
 Stokes bay, nautical mile marked in, 268.
 Storm of 1703, 45.
 Stores of guano on the Chincha islands Peru, 119.
 Strömboli rock, 205.
 Surgeons in American navy, rank of, 270.
 Survey of the Bristol channel, 638.

 Tables of wind and rain, 54, 109, 166, 222, 278, 333, 389, 446, 502, 557.
 Tampico Bar, 497.
 ——— harbour dues, 380.
 ——— pilot staff at, 557.
 Taranaki roadstead, New Zealand, 378.
 Tay river, directions for, 597.
 Temporary rudder and circular storms, 85.
 Terrestrial refractions, phenomena of, 67.
 Thames, conservancy of, 146, 347.
 The America, accident to, 549.
 The barometer, 36.
 The Cinque Ports, 178.
 The recovery of the Sphynx, 200.
 The Sophia Frazer, 209.
 Thunderbolt, loss of, and court martial, 308.
 Torres Strait, geology of, 648.
 Two Sicilies, quarantine for English vessels, 673.
 Tide signals, 95.
 ——— at Ramsgate, effects of wind or, 65.
 Timour Sea, typhoons in, 113.
 Tonnage, 218.
 Torres Strait, and the monsoons, passage to, 113, 173.
 Trans-atlantic steam-ships, four new ones, 270.
 Treasures of the deep, 545.
 Trevose Head light-house, 495.
 Trip to Chang-Chau, 402.
 Tropical climates, provisions for, 383.
 Tweed, loss of, 523.
 Typhoon, 209.
 ——— in the China Sea, 12.

 Universal yacht signals, 441.

 Valparaiso, remarks on making the land, 281.
 Variation, magnetic, 346.
 Vera Cruz, 447.
 Volcano in Red Sea, 314.
 Victoria land, 605.
 Volcanic eruption at the Friendly Islands, 270.
 Voyage of H.M.S. North Star, from Chusan Port, 1, 84.

 Wager River, 618.
 Waterloo Bay, 117.
 Waterspout, 154.
 ——— in Morecombe Bay, 479.
 Waves, height of, 262.
 Whalers in the Pacific, 127, 244.
 Wheel, new, 591.
 Whirlwind, contraction of, 576.
 Winds, chat about, 526, 569.
 Wind in miles, table of, 54, 109, 166, 222, 278, 333, 389, 446, 502, 557.
 Windward, great circle sailing, 359.
 Woolwich, examinations at, 273.
 Wrecks, 324.
 ——— drifting, 49.
 ——— of British shipping, 44, 95, 269, 503.
 ——— of the Lady Feversham, 34.
 ——— of the Tweed, 523.

 Yacht club, Royal Mersey, 600.
 Yachting intelligence, 662.
 Yarmouth and Lowestoft, sands off, 263.

NEW BOOKS.

- A narrative of the recovery of H.M.S. Omoo, or Adventures in the South Gorgon, 104.
 Auto-biographical Memoirs of Sir John Barrow, 327, 386, 441.
 Elements of Sailmaking, 332, 680,
 Gatherings from Spain, 105.
 Geographical Progress of Empires and Civilization, 500.
 Journey round the World, 829.
 Lectures on Naval Architecture, 105.
 Murray's Home and Colonial Library, 680.
 Nautical Dictionary, 105.
- Physical Atlas, 331.
 Rough Notes, taken during some rapid Journies across the Pampas and among the Andes, 105,
 Tables far facilitating the approximate reduction of Occultations and Eclipses for any particular place, 219.
 The First Principles of Algebra, 106.
 The Seaman's Vocabulary ; or Poly-glossarium Nauticum, 613.
 Trigonometry, Plane, and Spherical, 105.
 Universal Yacht Signals, 441.

NEW CHARTS.

Admiralty, 106, 220, 332, 388, 447, 500, 553, 680.

WOOD ENGRAVINGS.

	Page.
Diagrams, Great Circle Sailing	145
Recovery of H. M. S. Sphynx,	200
Plan of a Temporary Rudder	258

LIST OF PLATES.

	Page.
Fumific Impeller, small plate	183
Fumific Impeller, large plate	409
Portishead Point	638
Tracks of Capt. Fayerer	492

LONDON:—HUNT, PRINTER, 3, NEW CHURCH STREET, EDGWARE ROAD.

