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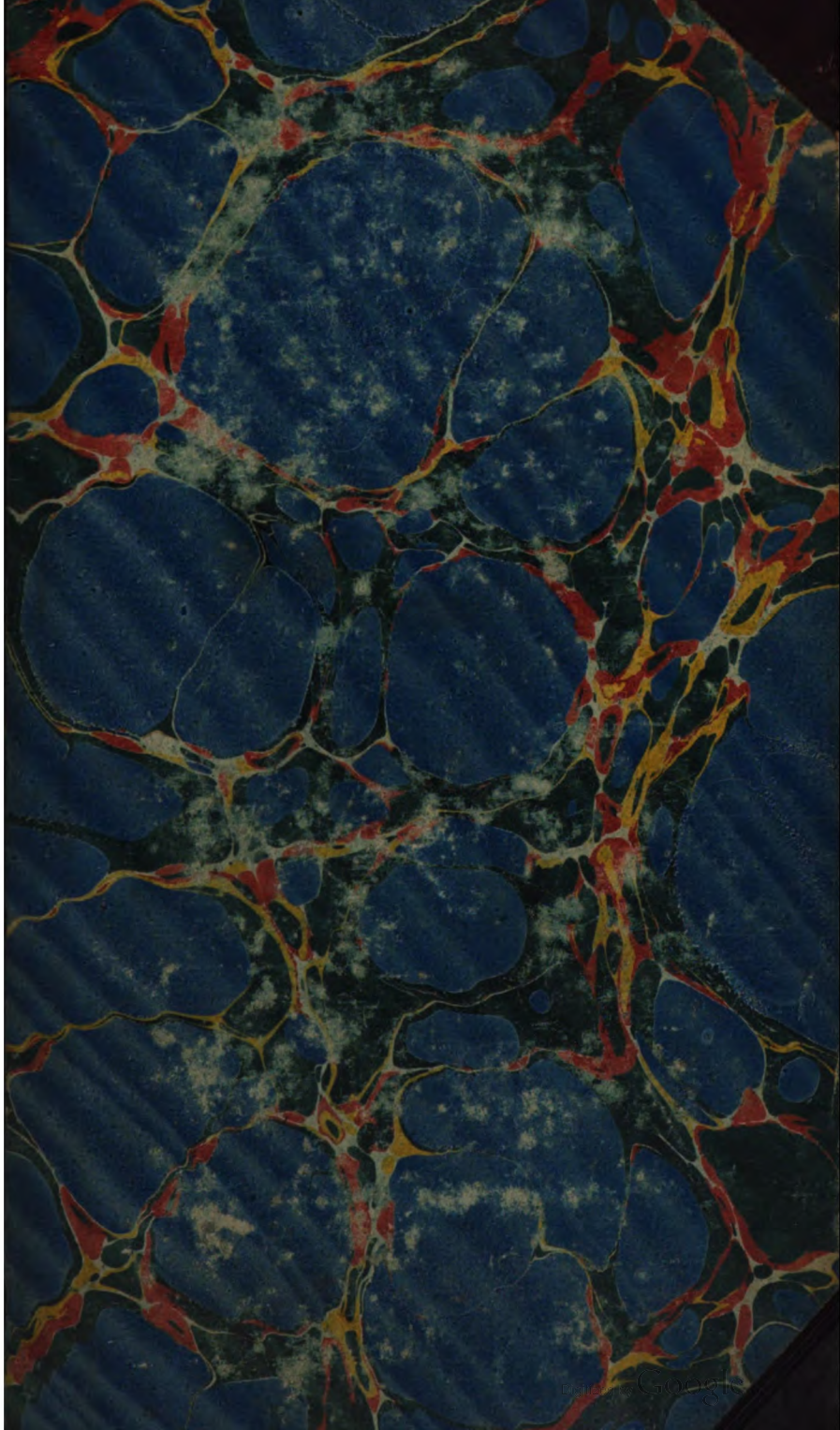
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THE
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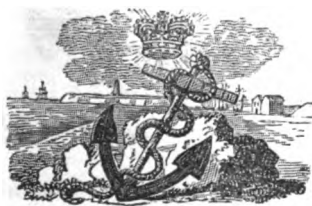
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FOR 1838.

A JOURNAL OF PAPERS

ON SUBJECTS CONNECTED WITH

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CONTENTS OF VOL. FOR 1838.

ENLARGED SERIES.

ORIGINAL PAPERS.

- ACCOUNT of a self-registering apparatus for shewing 'the stability and various motions of a ship at sea. By Mr. J. C. Mitchell, Mate of H.M.S. Excellent, communicated by Commander Washington, R.N. 764.
- Actæon Islands, Pacific Ocean, 13.
- Additional light on Cape Grinez, on the south side of the Strait of Dover, 365.
- Agger Channel, coast of Jutland, 217.
- Alterations in the positions of Lights and Buoys in the entrance of the port of Liverpool, 9.
- American Steam Boats, 536, 671.
- Appropriation of Seamen's Dues, 375.
- Arrowsmith Bank, West Indies, 366.
- Atlantic Ocean, Jaquet Island, Vigia, 366.
- Australian Surveys, Torres Strait, 200.
- Atmospheric Phenomenon, seen near the Equator, north Atlantic, 824.
- Bank off the north coast of Brazil—vessel struck, 221.
- Bars of Harbours—Lowestoft-ness, 97.
- Bars of the Rio Grande de San Pedro, Brazil, 297.
- Beachy Head Light, 511.
- Blossom's Voyage—Captain Beechey's Refutation of Capt. Duperrey's Remarks, 237
- British Flag in India, 264.
- Carrick's Paddle-wheel, 114.
- Cay Arenas, Gulf of Mexico, 723.
- Changes in the form and extent of Sable Island since the year 1811, 444.
- Chasing, on, by Lieut. Henry Raper, 446.
- Chronometer Accuracy—verification of the longitude of Paris, 402.
- Chronometer Rates, 374.
- Claudius Rock, Sunda Strait—ship struck, 151.
- Collier's Boilers, 379, 473.
- Cunningham's Catamaran, 303.
- Life-boat, 179.
- Currents of the Ocean, 589.
- Custom-house and Quarantine Regulations, 30.
- Description of Alacran and Cay Arenas, in the Gulf of Mexico, 804.
- Directions for sailing from the coast of Chili or Peru, to the South Sea Islands, Sandwich, Society, Marquesas, and Pitcairn, by Mr. George Biddlecombe, Master of H.M.S. Actæon, 225.
- Examination of the Captains and Officers of Prussian Merchant Ships, 193.
- Officers of the Mercantile Marine, 157.
- Pacific Ocean, 300.
- Expenditure of Coals in the Atalanta and Berenice, 93.
- Experiments on the horizontal magnetic force, 91.
- Extract from the Regulations of the Prussian School of Navigation, 264.

Finding the Time at Sea, 236.

French and English Maritime Laws, 14.

Galapagos, the, Floriade, 96.

General Remarks respecting the Currents and Tidal Streams in the St. Lawrence, 75.

Graham Shoal, Mediterranean, 150.

Ground Tackle of Ships-of-war, 345.

Harbour in Tootooilla island, Navigator's Group, Pacific, 119.

Harbour of St. Thomas, Virgin islands, 151.

Holyhead harbour as a Packet Station, 104.

Hurricane experienced by the Ship Feliza, Captain Reynolds, from Jamaica to Bristol, on the 18th, 19th, and 20th August, 1837, 454.

Illustrations of cases of Damage by Lightning in the British Navy, 590, 747.

Inner Passage from Sydney to Torres Straits, 296.

Instructions for preserving Specimens of Plants, 164.

Iron Steam-boats—Voyage of L'Egyptienne, 105.

Jury Anchor. By Com. A. Milne, of H.M.S. Snake, 344.

Latitudes and Longitudes in the gulf and river St. Lawrence, determined by Capt. H. W. Bayfield, R.N. 83, 148, 226.

Life Rafts in case of Wreck, 461.

Lightning Conductors, 111.

————— in Ships, 185, 304.

Light for Caernarvon Bar, 293.

———— on St. Catherine's Point, Isle of Wight, 295.

Local Attraction—Report from H.M.S. Princess Charlotte, 104 guns, 52.

Manacles Buoys, 294.

———— Rocks, 294.

Management of Chronometers, 386.

Manning the Navy, 524, 767.

Mean Level of the Sea, 199.

Menai Light, 295.

Merchant Seamen's "Dues," 246, 522.

Merchant Service Discipline, 668.

Midgley Shoal, in the Atlantic, 587.

Morgan Rock, Inner Passage to Torres Strait, Australia—Ship lost, 147.

Nature of the Vegetation which has covered the surface of the earth at the various periods of its formation, 314.

Nautical Libraries, 339.

Naval Changes, 533.

Negro Slavery, 170.

New Buoys at the entrance of the Dee, 295.

New Lighthouse at Valparaiso—Directions for entering the Port, 649.

New Light in Waterford harbour, 367.

New Pilotage Bill, 688.

New Shoals in the China Sea, coast of Palawan. By Capt. J. H. Brown, 721.

Notes on Curacao. By Lieut. A. W. B. Greevelink, of the Swedish Royal Navy, 363

———— in the Indian Seas—Hydrography—By Com. M. Quin, H.M.S. Raleigh, 793.

———— on the Gulf of Dulce, West Indies, 816.

Nova Scotia Lighthouses, 362.

Observations on Europeans in India, 326, 392.

———— on the Hurricanes of the 26th July and 2d of August, 1837, 35.

- On the adaptation of different modes of illuminating light-houses, depending on situation, and the object intended in their erection. By W. H. Barlow, Esq., 806.
- On the fact of small fish falling during rain in India. By Capt. C. W. Grant, Bombay Engineers, 683.
- Pacific islands—Extract of a letter from Capt. Bruce, of H.M.S. Imogene, at Valparaiso, 514.
- Paddle-wheels—unshipping and disconnecting, 334.
- Passages in India, 292.
- Passages of H. M. S. Cornwallis, Capt. Sir Richard Grant, between North America and the West India islands, in the winter of 1837, 433.
- Pilotage Bill, 543, 761, 827.
- Plan of a Navigable Raft in case of Shipwreck, 266.
- Plymouth Breakwater, Teneriffe, Bahia, and the Cape—longitude, 610.
- Poisonous Serpents—Remedies for their bites, 529.
- Port of Boulogne, 145.
- Proceedings of H.M.S. Beagle, Capt. J. C. Wickham, 679.
- Sulphur in the Pacific Ocean, 611.
- Proposals for Steam Navigation, read to the Ashmolean Society, 597.
- Provisioning of Merchant Ships, 114.
- Prussian Mercantile Navy, 535.
- Public Quays at home and abroad—shewing the want of proper facilities on the banks of the Thames, for the embarkation and debarkation of passengers in the port of London, 40.
- Qualification of the Officers of the Merchant Shipping, 152, 733.
- Qualifications of Masters and Mates of Ships, 399.
- Questions for the consideration of those who encounter hurricanes and tyfoongs, 460.
- Raising Sunken Vessels, 101.
- Ramble amidst the rocky mountains of Socotra. By Lieut. J. R. Welsted, F.R.S., F.R.A.S., &c., Author of Travels in Arabia, 603, 725.
- Random Rambles, or the Mariners' Club, 659.
- the Mariners of England, 462.
- the Steam-boat, 368.
- Refrigerating Steam-engine Condensement, 235.
- Remarks on Canea and the north coast of Candia. By Mr. W. H. Hall, R.N., late Master of H.M.S. Alfred, Captain R. Maunsell, 758.
- Remarks on Captain Ramsay's Caisson, 266.
- on the Navigation of the Gulph of Mexico, towards Vera Cruz, and thence along the coast, towards Laguna de Terminos, 505.
- on the St. Lawrence, by Capt. H. W. Bayfield, R.N. 1.
- Report on the river Dee and port of Chester. By Sir John Rennie, 123, 249.
- to the Bristol Committee on the subject of Steam Navigation, 24.
- River Plate—Observations on the anchorage off Buenos Ayres. By Mr. R. Thompson, Master of H.M.S. Imogene, 222.
- River Thames and the port of London, 260.
- Ross's Anchor, 610.
- Rule for finding the time at Ship by equal altitudes, and thence the longitude, 121.
- Sea Snakes, 528.
- Self-acting Feeder for Boilers, 34.
- Ship's well guage and leak alarm, 409.
- Sierra Leone, 122.
- Sisal Bank and Madagascar Shoal, 589.
- Steamers as sailing vessels—Unshipping *v.* disconnecting, 47, 190.
- Steam-boat accidents, 163.
- intercourse with India, 50.
- Navigation—Report of Committee of House of Commons on steam communication with India, 85.

- Strait of Allas, 218.
 Submarine Volcano near the Equator, Atlantic Ocean, 361.
 Sunken Rock in the port of Herradura, coast of South America, Pacific, 443.
 Sunken Rocks off Candia—eastern end, 444.
 Symington's Condensment, 89.
- Table for reducing Middleburgh feet to English, and English feet to Middleburgh, 468
 ————— Norwegian feet to English feet, and English feet to Norwegian, 338
 ————— Polish feet to English, and English feet to Polish, 513.
- Table of Port Charges at Madras, 595.
 Thoughts on Alien and Quarantine Laws, 797.
 Timber compared with iron, as a material for the construction of steam vessels, 255
 To John Bull—On the defective construction of his merchant ships, 810.
 Towing Ships, on, 323.
 Trinity house of Deptford Strand—its constitution, 388.
- Visit to the Geysers, Iceland. By John Barrow, Esq., 818.
 Voyage of H.M.S. *Actæon*—Valparaiso to the Marquesas islands, 73.
 —————, Capt. the Rt. Hon. Lord Edward Russell—England to
 Valparaiso. By A. Eardley Wilmot, R.N., 469.
 —————, Valparaiso to the Marquesas, Sandwich, Tahiti, and
 Pitcairn islands, 514.
 Voyage of H.M.S. *Imogene*, Capt. H. W. Bruce—Sandwich, Tahiti, and Pitcairn
 islands, 651, 737.
 Voyage of *L'Astrolabe* and *La Zelee* 182.
- Waterlogged Ships and British gratitude, 227.
 Weather on the Coromandel coast throughout the year, 289.
 Wells proposed in Steam Vessels. By Capt. J. B. Martin, harbour master, Rams-
 gate, 45.
 Winter Passage round Cape Horn, and visit to the Marquesas islands, by H.M.S.
Imogene, Capt. H. W. Bruce, 577, 651, 737.

NAVAL CHRONICLE AND LAW PROCEEDINGS, &c. &c.

- Adelaide*, H.M.S., 104 guns, 202
 Admiralty memorandum, 134
 Annular Scuppers, 62
 Atlantic steamers. Abstract of the log of the *Sirius* from Cork to New York, 488.
 ————— steam ships, 455
- Britannia*, 62
 Births, marriages, and deaths, 71, 142 215, 287, 358, 431, 503, 575, 647, 719.
 Boyd's impervious tar paint, 353
- Chronometers, 134
 ————— Madras, 278.
 Committee of naval and military officers, 422
 Cockney Aquatics, 355
 Columbus steam-ship, 202
- Dido and Clio, trial of sailing, 520
 Deepening the beds of navigable rivers, 717
- Elsinore, 422

- Engineers in the Navy, 641
 Establishment of a lighthouse at Pondicherry, 277
- First Lord of the Admiralty, 202
 Fog, signals, 133
 Floating light at Demerera, 422
 Funchale Roads, Madeira, 206
- Gull stream light, Ramsgate, 53
 Governor, (Gouverneur) Rock, off Donaghadee, 62
 Greatest speed on record, 62
 Greenwich Hospital, 131
 General signals to shipping, 135
 Gulf of Finland Navigation, 422
 Gorgon steam frigate, 563, 700
- Honourable testimonials, 131
 Hurricanes, 133
 Hook of Margate Buoy, Margate Sand, 553
 Harbour of Tadousac, St. Lawrence, 567
 Hurricanes, 566
 Harbours of refuge on a new principle, by Mr. Tait, Civil Engineer, 70
- Improvement of Wexford Harbour, 169.
 Indian navy, 273.
- Killybeg's Harbour lighthouse, 691.
- Lighthouses and light vessels, 700.
 Light on Cape Frio, Brazil.—interesting to navigators, 53.
 Late fires in the metropolis, 130.
 Lights at Tees mouth, 131.
 Lights of Cape Grinez, and Cape de la Hague, North coast of France, 133.
 La Terpesshore, French frigate, 202.
 Lights at the mouth of the Thames, 207.
 Literature, 569.
 Light on Isle Penfret Glennar Islands, depart of Finnisterre, 634.
 Light vessel at Key-West, 634.
 Light on Cape Brune Van Dieman's Land, 635.
 Light at Porkale and Kanning, in the Gulf of Finland, and at Euskar, in the Gulf of Bothnia, 636.
 Local attraction in iron vessels, 637.
- Merchant seaman's society, 58.
 Monarch and Apollo, 61, 136.
 Meteorological society, 63, 208, 421.
 Movements of Her Majesty's ships in commission, 70. 141, 214. 286, 357, 429, 502
 573, 717.
 Meteorological Register, 72, 143, 216, 288, 360, 432, 504, 576. 648, 720.
 Miramichi, the, 104.
 Mariners compass, 203.
 Midshipman, 200.
 Monthly gossip on Nauticals, 346, 409, 478, 544, 622, 694.
 Marine insurance, 352.
 Mean level of the sea, 421.
 Meeting of Her Majesty's squadron stationed at Portsmouth, 497.
 Menai lighthouse, 553.
 Merchant ships logs, 698.
 Mutiny and murder at seal 793.

New York liners

- Northern Royal Yatch club, 135.
 Notice to whalers, 206.
 New patents, 207.
 Nelson's memorial, 267.
 Nautical surveys, 272.
 Naval officers, 351.
 New lighthouse at Gibraltar, 412.
 New Harbour light of Cherbourg, 554.
 Naval discipline, 562.
 New light in the Baltic, 566.
 Navigation of the Bristol channel, 636.

Observations on the thermometers, during the frost of Jan. 1820, 122.
 Origin of half-pay to sea officers, and Lord Anson, master *v.* marine officers 20

- Presentation of plate, 64.
 Promotions and appointments, 69, 141, 213, 216, 356, 429, 531, 571, 615, 717.
 Paumbam passage, Ceylon, 130.
 Presentation of a piece of plate, and a public dinner, to A. Russell, 144.
 Portrait of Her Majesty, 246.
 Pier at Deal, 268.
 Pembrey, 262.
 Pincher, H. M. S. schooner, 273.
 Paumbam Pass, 274.
 Port Novo, Cowmandel, 275.
 Port regulations, of Tahiti and Moorca, 418.
 Plymouth breakwater, 423.
 Port of Bideford, 499.
 Polytechnic institution, 628.

- Royal Geographical Society 63, 136, 202.
 Rocken End light 132.
 Rhode's universal signals 133.
 Royal humane society.—Prizes awarded 133.
 Royal National Shipwreck Institution 135.
 Ranger, Her Majesty's packet 202.
 Ranger Packet, 270.
 Return of Slave vessels, captured under the late Spanish treaty 351.
 Rainbow new Iron Steam-vessel 523.
 Royal Geographical premiums, 554.
 Roger's small palmed anchor, 638.
 Records of Wrecks 66, 138 201 284 427 710.

- South Australian settlements 53.
 Seamen wrecked in the Eastern Seas 59.
 Sunderland harbour lights 131.
 Sierra Leone 135.
 Slave dealing 271.
 Steam to America 279.
 Steam boat accidents 279.
 Steam docks at Greenwich 279.
 Shipwrecked and distressed sailor's asylum 491, 558.
 Steam navigation to America, 493.
 Shoebury-ness Buoy.—Swin channel, 553.
 Sailing directions for the entrance of D'Eutrecasteaux channel, from south west-ward 635.
 St. George's shoal 637.
 Symington's condensement 638.
 Submarine Volcano 642.
 Statement of the Packets 712.

CONTENTS OF VOL. FOR 1838.

Table of officers on the Navy List, from Jan. 1816, to Jan. 1838, 132.
Table for reducing Irish miles to English, and English miles to Irish 417.
Table for reducing Roman Feet to English, and English Feet to Roman 631.
The Tides 632.
Table for reducing Scotch miles to English, and English miles to Scotch 699.

Underwriters at Lloyd's, 135.

Wrecks of British Shipping from the Shipping Gazette, 68, 213, 283, 356, 571.
Wyre Harbour, 135
Wexford Harbour, 274

Law Proceedings :

Isabella, salvage 427
Providence, salvage 427
Carrow, salvage 427
Velocipede, salvage 427
Belgrave, salvage, 427
Melby, salvage, 427
William, Ritson v. Craig, 570
Columbia, Salvage 570.
Alarm, Wages 520
Nelson, lien 647
Macdonald v. Joplin, wages 642
Isabella and Crescent, collision 643
Union salvage 709
Ocean salvag 709.
Maria, salvage, 64
Commerciant, salvage 65
Margaret, steam-vessel, salvage, 64
Meg Merrilies, salvage, 64
Carolus, collision 65.
Dantzic packet, salvage 65
Victory, collision, 65
Magnus, wages 65
Suffolk, refusal of duty 66
Hersey, bottomry 66
Dredging steamer, salvage 137
Flora, salvage 137
Helena, salvage 137
Percy, bottomry 137
Iris, wages 137
Nelson Village, collision 137
Waring and others, v. Mortimer, collision 137
Yates v. White, marine insurance, 210
Wightson v. Bywater,—a ship or no ship 210
Rapid, salvage 210.
Court martial, 211
Transit Collision, 211,
Perth steamer, collision 279
Laing v. Foster 280
Colonist, salvage 280
Hope, salvage, 280
Richmond, collision 281
Grainger v. Bain, libel, 281
Charles Cain, Manslaughter, 353
Gladiator, collision, 354
Thomas Moulden, salvage, 426
Howard, salvage, 426

CONTENTS OF VOL FOR 1838.

New Books.

- Complete Nautical and General navigation Tables; including every table required with the Nautical Almanac, in finding latitude and longitude. By T. Kerigan, 354
 Scandania, Ancient and Modern; being a history of Denmark, Sweden, Norway &c. By a Crichton and H. Wheton, L.L.D., 355
 Topsail Sheet-blocks; or, the Naval Foundling. By the Old Sailor, 355,
 Barometric Tables, for the use of Engineers, Geologists, and scientific travellers
 By W. Galbraith, M.A. 355
 Madame Tassaud's Memoirs and Reminiscences of France, forming an abridged history of the French Revolution 499.
 Adele: a tale of France. By Miss E. Randall 500
 Greenwich Pensioners, the. By Lieut. Hatchway 500
 Parthenon. Adapted to the purpose of a national monument &c. By A. Robertson, A.M. 500
 Sermons on Miscellaneous Subjects. By W. J. E. Bennett, M.A. 500
 Adele, a tale of France 569
 Narrative of an expedition in H.M.S. Terror, undertaken with a view to geographical discovery on the arctic shores, in the years 1836-7, by Capt. Back, R.N. 644
 Attempt to develop the law of storms, by means of facts, arranged according to place and time, and hence to point out a cause of the variable winds. By Lieut. Col. W. Reid, C.B. 712
 Land sharks and Sea Gulls, By Captain Glascock, R.N. 715
 Dictionary of Arts, Manufactures. and Mines; containing a clear exposition of their principles and practice. By Andrew Ure, M.D. 116.
 Proposed plan for improving Dover Harbour. by an extension of the South pier head, &c. By I. Worthington, R. N., 716.
 Mariner's latitude and longitude ready computer 716.
 Book of Formula for finding the latitude at sea, &c., 716
 Logarithmic and Trigonometric Tables, to seven places of decimals 68.
 Natural history of the birds of Great Britain and Ireland. By Sir W. Jardine, bart, 68.
 Letters to Brother John, on Life, Health, and disease, by Mr. Johnson, surgeon 69.
 Life of Richard Earl Howe, Admiral of the fleet and general of the Marines by Sir John Barrows, Bart., F. R. S., 139.
 Elementary Treatise on Steam, more particularly as applicable to the purposes of Navigation, with a familiar description of the engine, by Robert Otway, Com. R. N. 140.
 Narrative of an Expedition into the interior of Africa, by the river Niger, in the steam-vessel Quora and Alburkah, 1332-4. By Macgregor Laird, and R A B Oldfield, surviving officers of the expedition 212
 Celestial scenery; or the wonders of the Planetary system displayed Illustrating the Perfection of Diety and a plurality of worlds. By Thomas Dick, L L D &c , 233
 South America and the Pacific Comprising a journey across the Pampas and the Andes, &c By the Honourable P Campbell Scarlett 284
 Outward Bound; or a Merchant's Adventures By the author of Rattlin the Reefer &c 284
 Simplicity of Living, Observations on the preservation of health in infancy youth manhood and age &c By J H Curtis Esq 284
 Life and correspondence of John Earl of St Vincent G C B Admiral of the fleet &c By Edward Pelham Brenton Captain R N 354

New Charts:—

- Ballyshannon harbour West coast of Ireland 284
 Dragon's mouth (Bocas de Dragos) Trinidad 285
 Africa, West coast sheet 1 By Lieut Arlett R N 235
 Africa, West coast sheet 4 285
 Shetland islnads surveyed by George Thomas commanding H M S Investigator 235
 Gulf of St Lawrence Magdalen islands Surveyed by Lieut. P E Collins R N 501
 Bay of Seven Islands By Captain H W Bayfield R N 501
 Gulf of St Lawrence Mingin Islands western sheet By Lt H W Bayfield R N. F A S 501

THE
NAUTICAL MAGAZINE.

ORIGINAL PAPERS.

JANUARY, 1838.

REMARKS ON THE ST. LAWRENCE, BY CAPTAIN H. W. BAYFIELD, R.N.

1. Former Charts of the St. Lawrence.—2. Massey's Sounding Machine.—3. Variation.—4. Deviation.—5. Local Attraction of Rocks.—6. Ice.—7. Fogs.—8. Winds and Weather.—9. The Marine Barometer.

1. THE navigation of the Gulf and River of St. Lawrence has been supposed always to be attended with a considerable degree of difficulty and danger, and the numerous accidents which are constantly occurring to vessels there seem to show that the opinion is well founded. The want of soundings, in many parts, near the shores; the irregularity of the tides and currents; the severity of the climate, especially towards the close of the navigable season; and, above all, the frequent fogs, are difficulties which may well cause much anxiety in the mind of the seaman, and which call for the exercise of all his vigilance, prudence, and ability. Nevertheless, a very large proportion of the losses which annually take place, may, I think, be attributed to other than these natural and irremediable causes. Erroneous charts, a want of knowledge of the direction and strength of the tides and currents, and a false variation of the compass, are, although not the only, certainly the most frequent, causes of shipwreck in the St. Lawrence. It is hoped that these last will be removed by the survey which has been made by order of the Lords Commissioners of the Admiralty; and by these directions and remarks, written also by their command, in order to accompany the charts.

Of the various charts of the St. Lawrence which have hitherto been in use, those of Major Holland, re-published by Des Barres in 1778, are the least inaccurate, yet the least in general use. The others appear to be taken from them with alterations, which, it seems, rest on no better foundation than the fancy of the chart makers, who, in their compilations, from materials generally inaccurate, appear to have considered the latest as necessarily the best information. The effect

ENLARGED SERIES.—NO. 1.—VOL. FOR 1838.

of this has been the retention of old errors and the addition of new ones, for it so happens that the most recent charts of the St. Lawrence at present in use, are the most erroneous of any. In Des Barres' charts, although thus mentioned as the best, the errors and omissions are numerous and important. The soundings are generally incorrect, frequently so much so as to be directly contrary to the truth; for he occasionally shows a moderate depth of water, where there should be 100 fathoms or more, and in other places a great depth where there is bottom to be found with the hand lead. Commanders of ships having found that they could not trust to the soundings in these, and the other charts, have considered it of no use to sound, from which many fatal accidents have occurred within my own knowledge.

2. In the Admiralty charts will be found accurate soundings, taken with Massey's patent sounding machine, which gives the exact perpendicular depth, independent of the effect of currents or drift of the vessel. I strongly recommend the use of this excellent instrument, with which every vessel, in my opinion, ought to be furnished. It is not expensive, and will last, with care, for a long period of time: correct soundings may be obtained with it in thirty fathoms of water without heaving to, if the vessel be not sailing at a rate exceeding seven knots; and no vessel ought to be permitted to run faster in a thick fog, or dark night, when in the vicinity of land, or other danger. Furnished with this instrument, or, instead of it, with Burt's buoy and nipper, and with correct charts, a vessel may be run in safety up the St. Lawrence as high as Green Island. In short, there, as elsewhere, correct soundings are the best of all guides to the navigator.*

3. The variation, given in Des Barres' charts, was probably correct for the time when the charts were made; and though greatly changed since, has been copied nevertheless into most of the charts in general

* There is no difficulty in the use of Massey's patent sounding machine, and it is sold, accompanied with directions for setting, reading its indications, &c. The common deep sea lead line is not strong enough to bear the strain of the lead and attached machine. When the vessel is going fast through the water a superior line should be employed for the purpose. When sailing at a rate not exceeding five knots, bottom may be struck in fifty fathoms of water, and when going slower, at still greater depths; but the hollow cylinder of the wings will seldom bear the pressure, at depths much exceeding 100 fathoms. The deep sea lead line, with the machine attached, should be passed forward, from the weather quarter of the vessel, outside all, to the weather cathead, or bowsprit end. If going slow, it may be dropped, very conveniently, from the weather gangway, abaft the fore rigging, taking care, in all cases, to drop it perpendicularly into the sea, and not to throw, or swing it, as is sometimes carelessly done. An iron staunchion, "to ship and unship," on either quarter, as required, with a small snatch-block attached, to pass the line through, will enable four or five hands to walk the lead-line in with ease and expedition. Mr. Massey has recently much improved this machine.

use. For instance, in some of those charts the variation at Anticosti is given as 17° west, too little by three quarters of a point. The effect of this upon the run of a vessel from the entrance of the gulf to Anticosti, or from the latter to Point de Monts, will be obvious to any seaman, and has doubtless occasionally been one cause of shipwreck.

4. There is another source of error, independent of charts altogether, which it is astonishing to find obtaining so little attention, particularly in the merchant service, considering how much has been written concerning it of late years. I allude to the deviation, or local attraction, of the needle. This subject may be seen fully treated in Mr. Barlow's treatise on magnetic attraction; and Scoresby in his works on the arctic regions, and on the Greenland whale fishery, gives many valuable and practical directions respecting the methods available under different circumstances, for finding its amount in various positions of the ship's head, and applying a correction according to the course steered. The amount of error from this cause will be a point of the compass in most vessels, and, in particular circumstances, may become twice that quantity in those latitudes.

5. An opinion is prevalent that the compasses of vessels are disturbed in the Gulf and River St. Lawrence, and such disturbance has been attributed to the magnetic ores of iron in the hills, particularly those of the north coast. The magnetic oxide of iron does exist abundantly, and attracts the needle very powerfully at some points, particularly along the coast from the Bay of Seven Islands eastward. Among the Mingan Islands, we found the variation to vary from this cause from 19° to 31° west. At Port Neuf, and on Manicoagan Point, the needle was also disturbed. But these effects were only noticed when the instrument was placed on the shore. In one or two instances only, when sailing within two miles of the shore, have we observed any effect of the kind upon the compasses on board the *Gulnare*, the schooner in which the survey has been carried on, and then only to the amount of a very few degrees.

When running from place to place, at greater distances from the coast, nothing of the kind has been noticed; so that I feel sure, that in nine cases out of ten where this source of erroneous reckoning has been alleged as the cause of accidents to vessels, they originated either in errors of the chart, or in the local attraction on board the vessel.

6. Among the difficulties of the navigation, may be mentioned the ice. In spring the entrance and eastern parts of the gulf are frequently covered with it, and vessels are sometimes beset for many days. Being unfitted for contending with this danger, they often suffer from it, and are occasionally lost; but serious accidents from this cause do not frequently occur, because the ice is generally in a melting state from the powerful effect of the sun in spring. In the fall of the year accidents from ice seldom occur, except when the

winter commences suddenly; or when vessels linger imprudently late from the temptation of obtaining high freights.

7. But all danger from ice is far less than that which arises from the prevalent fogs: they may occur at any time during the open or navigable season, but are most frequent in the early part of summer; they are rare, and never of long continuance during westerly winds, but seldom fail to accompany an easterly wind of any strength or duration. The above general observation is subject, however, to restriction, according to locality, or season. Thus winds between the south and west, which are usually clear weather winds above Anticosti, are frequently accompanied with fog in both the eastern parts of the gulf. Winds between the south and east are almost always accompanied with rain and fog in every part. E.N.E. winds above Point de Monts, are often E.S.E. or S.E. winds in the gulf, changed in direction by the high lands of the south-coast, and have therefore in general the same foggy character. I speak of winds of considerable strength and duration, and which probably extend over great distances. Moderate and partial fine weather winds may occur without fog at any season, and in any locality. In the early part of the navigable season, especially in the months of April and May, clear weather N.E. winds are of frequent occurrence, and they also sometimes occur at other seasons, in every part of the Gulf and River St. Lawrence.

The fogs sometimes last several days in succession, and to a vessel either running up or beating down, during their continuance, there is no safe guide but the constant use of the deep sea lead, with a chart containing correct soundings.

The fogs, which accompany easterly gales, extend high up into the atmosphere, and cannot be looked over from any part of the rigging of a ship. They, however, are not so thick as those which occur in calms after a strong wind, and which are frequently so dense as to conceal a vessel within hail; whilst the former often, but not always, admit the land, or other objects, to be distinguished at the distance of half a mile, or more, in the day time.

The dense fogs, which occur in calms, or even in very light winds, often extend only to small elevations above the sea; so that it sometimes happens, that when objects are hidden at the distance of fifty yards from the deck, they can be plainly seen by a person fifty or sixty feet up the rigging. In the months of October and November the fogs and rain, that accompany easterly gales, are replaced by thick snow, which causes equal embarrassment to the navigator.

8. The prevailing winds, during the navigable season, are either directly up or directly down the estuary, following the course of the chains of high lands on either side of the great valley of St. Lawrence. Thus a S.E. wind in the gulf becomes E.S.E. between Anticosti and the south coast, E.N.E. above Point de Monts, and N.E. above Green Island. The westerly winds do not appear to be

so much guided in direction by the high lands, excepting along the south coast, where we have observed a W.S.W. wind at the Island of Bic become west, W.N.W., and N.W., as we ran down along the high and curved south coast, until it became a N.N.W. wind at Cape Gaspé. These winds frequently blow strong for three or four days in succession; the westerly winds being almost always accompanied with fine, dry, clear, and sunny weather; the easterly winds as frequently the contrary, cold, wet, and foggy. In the spring, the easterly winds most prevail, frequently blowing for several weeks in succession. As the summer advances, the westerly winds become more frequent, and the S.W. wind may be said to be the prevailing wind in summer in all parts of the river and gulf. Light south winds take place occasionally; but north winds are not common in summer, although they sometimes occur. Steady N.W. winds do not blow frequently before September, excepting for a few hours at a time, when they generally succeed easterly winds which have died away to a calm, forming the commencement of strong winds, and usually veering to the S.W. The N.W. wind is dry, with bright clear sky, flying clouds, and showers. After the autumnal equinox, winds to the northward of west become more common, and are then often strong steady winds of considerable duration. In the months of October and November the N.W. wind frequently blows with great violence in heavy squalls, with passing showers of hail and snow, and attended with sharp frost.

Thunder storms are not uncommon in July and August; they seldom last above an hour or two; but the wind proceeding from them is in general violent and sudden, particularly when near the mountainous part of the coast; sail should, therefore be fully and quickly reduced on their approach.

Strong winds seldom veer quickly from one quarter of the compass to another directly or nearly contrary: in general they die away by degrees to a calm, and are succeeded by a wind in the opposite direction. I do not mean, however, by this observation, that they may not veer to the amount of several points. N.W. winds seldom or never veer round by north and N.E. to east and S.E.; but they do frequently, by degrees, to the S.W., after becoming moderate. S.W. winds seldom veer by the N.W. and north to the eastward, but sometimes by the S. to S.E. and E. Easterly winds generally decrease to a calm, and are succeeded by wind from the opposite direction.

In the fine weather westerly winds of summer, a fresh topgallant breeze will often decrease to a light breeze or calm at night, and spring up again from the same quarter on the following morning: under these circumstances only may a land breeze off the north coast be looked for. I have observed the same off the south coast also, but not so decidedly or extending so far off shore. I have occasionally carried the north land wind nearly over to the south coast just before

daylight, but have never observed the south land wind extend more than five or six miles off, and that very rarely. Under the same circumstances, that is with a fine weather westerly wind going down with the sun, a S.W. land breeze will frequently be found blowing off the north coast of Anticosti at night and during the early part of the morning. If, however, the weather be not settled fair, and the wind does not fall with the sun, it will usually prove worse than useless to run a vessel close in shore at night in the hope of a breeze off the land. Such is the usual course of the winds in common seasons, in which a very heavy gale of wind will probably not be experienced from May to October, although close reefed topsail breezes are usually common enough. Occasionally, however, there are years, the character of which is decidedly stormy. Gales of winds, of considerable strength, then follow each other in quick succession and from opposite quarters.

9. The marine barometer, which is at all times of great use to the navigator, becomes particularly so in such seasons; and the following remarks upon its general indications, when taken in connexion with the usual course of the winds and weather in the St. Lawrence, may therefore be useful. The barometer has a range from 29 to 30.5 inches in the Gulf and River St. Lawrence during the navigable season, and its changes accompany those of the winds and weather with a considerable degree of constancy. The fluctuations of the barometric column are much greater and more frequent there than in lower latitudes; and sudden alterations, which in other climates would be alarming, may occur there without being followed by any corresponding change either in the wind or weather. But the navigator should not be inattentive to those minor changes, as a constant attention to the instrument can alone enable him to appreciate those decisive indications of the mercury which seldom or never prove deceptive. The following remarks will apply to those well-marked changes which usually indicate the approach of a gale of considerable strength, or of a shift of wind and weather; the correct anticipation of which is often of the utmost consequence to the safety of a vessel, as well as to the length of her voyage. When after a continuance of westerly winds and fine weather, the barometer has risen nearly to its greatest height, say some tenths above thirty inches, or begins to fall a little, an easterly wind may be soon expected. If to this notice given by the barometer be added a warm hazy atmosphere during the day, and a heavy precipitation of dew at night, with very bright twinkling stars, or a coloured aurora borealis, the approach of an east wind is almost certain. If land be in sight at such a time, and appears much distorted by terrestrial refraction, or if vessels in sight have the relative proportions of their hull and sails changed by the *mirage*, or present double or treble images, such appearances will render the before probable indications of the barometer certain. At

the commencement the easterly wind will probably be light with fine clear weather, but this will not last above a few hours if the barometer continues to fall; on the contrary, the wind will gradually increase, and as it does so the sky will become overcast by degrees until it is completely clouded. Rain and fog will follow, and continue during the continuance of the easterly wind with little intermission, until they are dissipated by a fresh breeze from the contrary quarter.

If the fall of the barometer, during the continuance of the easterly wind, be very slow, the gale will probably continue, and not be very violent: if rapid, it will probably be of short duration, and of greater strength: at any rate, when the mercury falls towards 29 inches, a change is certainly at hand, and the gale will in general come from the N.W. The strength of this succeeding gale will be in proportion to the fall of the barometer, and to the strength of the easterly gale which preceded it. In such a case, there is seldom many hours' interval between the one gale and the other. The east wind generally dies away to calm, and in a very few hours, or sometimes in much less time, the N.W. gale springs up. A heavy cross sea remains for some time from the previous gale. The barometer sometimes begins to rise in the interval of calm which precedes the N.W. gale, at others at its commencement: the fog and rain cease, and the weather becomes quite clear, generally in a few hours, and sometimes almost immediately. The strength of the westerly gale is usually greatest soon after its commencement, and diminishes as the barometer rises, veering gradually to the west and S.W. It is worthy of remark, that the circumstances just mentioned are exactly the reverse of those attending the easterly gale. The latter usually commences with clear weather and a high barometer, light at first from the south or S.E., and gradually increasing as it veers to the eastward, with a falling barometer. To return to the westerly gale.—If, after it has veered to S.W. and become moderate, the barometer remains steady at a moderate height, fine weather may be expected. If it remains at a considerable height, but still fluctuating and unsteady, within certain limits, variable but not heavy winds, and variable weather may be expected. If, on the contrary, it rises quickly to a great height, a repetition of the easterly gale will not be improbable. We have experienced seasons in which the barometer may be said to have been no sooner blown up by one wind, than it has been blown down by another, and this stormy alternation to have continued for several months, whilst in others we have scarcely had a double-reefed topsail breeze during the whole summer.

There is in fact so great a difference in the phenomena of the weather in different seasons, that it becomes very difficult to write anything respecting it that shall not be liable to many exceptions. There are, however, some strongly marked cases of connexion

between the indications of the barometer and changes of the winds and weather, which, within our experience of eight or nine years, have been subject to few, I might almost say no, exceptions. The first of these cases is that most common one, which I have endeavoured to describe, of an easterly gale, with a falling barometer, being always wet and foggy, and succeeded by a strong wind from the opposite quarter with a rising barometer. A second case, not of so frequent occurrence in common seasons, excepting in spring or early in summer, is the easterly wind with a rising barometer; which, although it may not be at first for a few hours, will almost always become fine and clear, and end in fine weather. A third case may be considered certain: if the barometer fall suddenly and greatly, at any time, a northerly, and most probably a N.W. gale, of great strength, may be confidently expected. It does not follow that it will be immediate, for it may be preceded by a strong gale from S.W., for a few hours, during which the barometer will seldom rise, and even, probably, continue to fall; but when the S.W. gale dies away, the northerly or N.W. will soon succeed, with a rising barometer.

In conclusion, I may remark that as, on the one hand, a considerable fall of the barometer may occur, without being followed by a strong wind; so, on the other, a breeze of considerable strength may come on without any indication from the barometer, but not anything that deserves the name of a gale. There has never, within our experience, occurred a gale, so heavy as to be of serious consequence to a good vessel, the approach of which has not been indicated by the barometer. But it must be remembered that a high barometer, in this climate, and under the circumstances which I have mentioned, is often indicative of an easterly gale. It is remarkable that, in the gulf and estuary of the St. Lawrence, a high barometer may be considered as the forerunner of wet and foggy weather, which usually accompanies its fall: whilst a low barometer renders it equally probable that dry weather will ensue, since it often accompanies its rise. I am fully of opinion, that the marine barometer is of the greatest assistance in the navigation of the Gulf and River St. Lawrence, and that by attending constantly to its state and changes, with reference to the winds and weather which preceded them, combined with the indications afforded by the appearance of the sky, &c., those changes of the wind and weather, which are about to take place, may be anticipated with a degree of certainty sufficient, in most cases, to enable us to avoid being caught on a lee-shore, or in an unsafe anchorage, as well as to regulate our course in a voyage, in anticipation of the coming change.

[The numerous commanders of our merchant shipping, will not fail to derive the advantages of a careful attention to the foregoing valuable remarks of Captain Bayfield. His observations on local attraction are just, and equally worthy of attention. In our April number (1837) we printed some concise and simple directions for finding it, which are to be had separate at either of our publishers.—Ed. N.M.]

**ALTERATIONS IN THE POSITIONS OF LIGHTS AND BUOYS IN THE
ENTRANCE OF THE PORT OF LIVERPOOL.**

Dock Office, Liverpool, October 5th, 1837.

THE Trustees of the Liverpool Docks and Harbour do hereby give notice, that for the better guidance of the mariner into and out of this port, the following alterations will be made in the Formby, Leasowe, and Bidston lights, and exhibited on and after the evening of Saturday, the 11th of November next.

Formby Light.—This light will be distinguished as a fixed red light; and, in order to give a clearer berth to the northwestern and southeastern elbows of the banks of the New Channel, which have changed their positions, it is necessary, when inward bound from the westward, to take the bar of that channel with the red shore light, open a sail's breadth to the southward of the Formby floating light, and, after crossing the bar, which the soundings will show, open them as much to the northward, and thus nearing the floating light, instead of taking up and preserving those lights in one.

This alteration in the character of the Formby shore light will also afford a distinction for identifying it when approaching from the northward.

Leasowe Light.—This light will be so masked as to give a defined light in the Rock Channel, within certain limits, and will suddenly disappear, bearing S.W. to vessels inward bound, when off West Wharf buoy, R. 3, red, and suddenly appear, when outward bound.

Bidston Light—This light will also be masked so as to give a defined light in the Rock Channel, within certain limits, and to vessels inward bound will suddenly disappear on the bearing of S.S.W., when abreast of East Wharf buoy, R. 4, red, and suddenly appear, when outward bound.

These lines of masking and unmasking intersect that spot in the Crosby Channel where the course alters, so that, in running up from the Formby floating light, the mariner must haul up from S.S.E. $\frac{1}{4}$ E. to S. by E. $\frac{1}{4}$ E., on losing Bidston and Leasowe lights, and, on running down, keep away from N. by W. $\frac{1}{4}$ W. to N.N.W. $\frac{1}{4}$ W., on their opening out. All bearings by compass.

By order of the Committee,

H. M. DENHAM, CAPT. R.N.,
Marine Surveyor.

Marine Surveyor's Office, Liverpool, Oct. 30th, 1837.

The under mentioned buoys having been moved to suit the alterations in the banks, since Captain Denham's chart, of 1835, pilots, coasters, and others are hereby informed of the same.

10 POSITIONS OF LIGHTS AND BUOYS IN THE PORT OF LIVERPOOL.

(All bearings by Compass.)

These two buoys bear of each other, north and south, nearly $\frac{1}{2}$ of a mile apart, the width of the Channel entrance.	}	N 1, Black, (<i>Nun</i>) N. W. Spit of New Channel.	}	Moved 3 cables to the S.W. and bears E. $\frac{3}{4}$ S. 1 mile, nearly, from Bell Beacon, and E.N.E. from N.W. light ship $4\frac{1}{2}$ miles.
		N 1, Red, (<i>Can</i>) S.W. Spit of New Channel.		Moved 3 cables W. $\frac{1}{2}$ N., bearing from Bell Beacon E.S.E. 1 mile, and from N.W. light ship E. by N. $\frac{3}{4}$ N. 4 miles.

NOTE.—The bearing of the Bell Beacon has been corrected. It now bears from N.W. light ship, N.E. by E. $\frac{1}{4}$ E. $3\frac{1}{2}$ miles, nearly, instead of N.E. by E. $\frac{3}{4}$ E. $3\frac{3}{4}$ miles, as stated on chart of 1835.

These buoys bear from each other, north and south, $\frac{1}{2}$ of a mile apart, and both bear N. $\frac{1}{4}$ E. of Leasowe lighthouse.	}	N 2, Black, (<i>Nun</i>) North side of New Channel.	}	Moved $\frac{1}{2}$ of a mile due west, and bears from N 1, <i>Black</i> , east $\frac{1}{4}$ of a mile.
		N 2, Red, (<i>Can</i>), south side of New Channel.		Moved $\frac{1}{2}$ of a mile W. $\frac{1}{4}$ N., and bears from N 1, <i>Red</i> , east $\frac{1}{4}$ of a mile.

These buoys bear north and south of each other $\frac{1}{2}$ of a mile apart, and show the width of the Channel there.	}	N 3, Black, (<i>Nun</i>) N. E. Spit of New Channel.	}	Moved $1\frac{1}{2}$ cables N.W. by N., bearing from Formby light vessel N.W. by W. $\frac{1}{4}$ W. 1 mile, nearly, and from N 2, <i>Black</i> , east $\frac{1}{2}$ of a mile.
		N 3, Red, (<i>Can, with Perch</i>) S. E. Spit of New Channel.		Moved $\frac{1}{2}$ of a mile N.W., bearing from Formby light vessel W. $\frac{1}{4}$ N. $\frac{3}{4}$ of a mile, and from N 2, <i>Red</i> , east $\frac{1}{4}$ of a mile.

C 1, Black, (<i>Nun</i>) on N. W. Spit of Formby Middle Bank, (<i>Taylor's Buoy</i> .)	}	Moved 1 cable N.W. by N., bearing from Formby light vessel N.W. by N. 3 cables distant.
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NOTE.—A scouring away of the south margin of Little Burbo Bank has taken place, forming a considerable bight between N 2 and 3 black buoys; but, as the ebb sets direct on, vessels in turning out should not stand northward of the line of those buoys. It should also be borne in mind, that the outer and shoalest edge of the Bar (12 feet on low watersprings) has spread nearly half a mile farther out, towards Bell Beacon, than in 1835. You are fairly without the bar, however, when deepening your soundings 2 fathoms, or half-way between the Bell Beacon and outer buoys, N's 1, red and black, (Bidston light bearing S. by E. $\frac{1}{4}$ E. ;) and you are fairly within the bar when, deepening your soundings 1 fathom, or half-way between N's 1 and 2 buoys, (Bidston bearing S. $\frac{3}{4}$ E.)

Bidston will throw a better light to the northward after the 11th of November next.

R 1, Black, (<i>Can with Perch</i>), Spencer's Buoy, at North Spit.	}	Moved 75 fathoms S.W. of former position, Spit advancing westward.
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NOTE.—The above, as well as the new sailing lines of Formby Lights, and the several alterations in the banks, &c., will be shown on a corrected edition of Captain Denham's chart, up to the date hereof.

H. M. DENHAM, CAPT., R.N.,
Marine Surveyor.

REMARKS ON ALTA VELA, BEATA, AND AVIS ISLANDS.*—*West Indies.*

IN October, 1834, Her Majesty's ship *Racehorse*, being at anchor off the west side of the Island of Beata, on the south coast of St. Domingo, sights were taken there, and on the west end of the Island of Alta Vela, for the purpose of obtaining a meridian distance from Fort Charles, Port Royal. The latitude by the sun's meridian altitude was $17^{\circ} 28' 12''$ N., and the distance east of Fort Charles $0\text{h. } 20\text{m. } 49,32\text{s.}$ The place of observation, on the Isle of Beata, a sandy beach, off which the ship was anchored, was in latitude, by observations, $17^{\circ} 33' 44''$ N., and the distance east of the place of observation on Alta Vela $27,0\text{s.}$ On Beata, where we landed, there was an establishment of hunters of wild pigs who kept a pack of a small breed of blood hounds there for that purpose. When the work was done on Alta Vela, Mr. Tonkin, the master, and Mr. Drury, midshipman, who had been taking sights, and myself, ascended the mountain on the S.E. side where it appeared most easy. We reached the summit a short time before sunset. The extent and grandeur of the view was great in the extreme, but could not be enjoyed from the fatigue of climbing up, and the necessity of immediately commencing our descent, a work which we found more painful and difficult than climbing up, caused by the great uncertainty where to step, or what to hold on by, it being twilight. The soil was loose stones and earth, thickly covered with the cactus *fragilis*, a plant most properly so called, for on the slightest touch the lobes break off from the plant and adhere most firmly to the flesh by the sharp spines with which they are armed, and are barbed at the point like a New Zealand spear. Landing on the island is not difficult in fine weather, but very dangerous in strong breezes. The best place is a cove to leeward on the west side, and a more convenient one on the N.E., but the weather must be very fine; there is no fresh water. The island is sometimes visited from St. Domingo for the purpose of quarrying stone. It was my intention to take a barometer up to measure the height, but it was quite impossible; it is, however, in the opinion of an officer best qualified to judge, 500 feet.

In March, 1835, being off the island on my way from Port Royal to Barbados, I again landed, and confirmed the latitude before obtained, and by sights made the meridian distance from Fort Charles $20\text{m. } 45,86\text{s.}$, the observers being the same as in October.†

* The positions of these Islands on the charts are very incorrect.

† These observations were again confirmed in January, 1837, when it was $20\text{m. } 50,0\text{s.}$, or in October, 1834..... $20\text{m } 49,32\text{s}$
 March, 1835 $20 \quad 45,84$
 January, 1837..... $20 \quad 50,0$

3) 145,016

Mean..... $20 \quad 48,38$

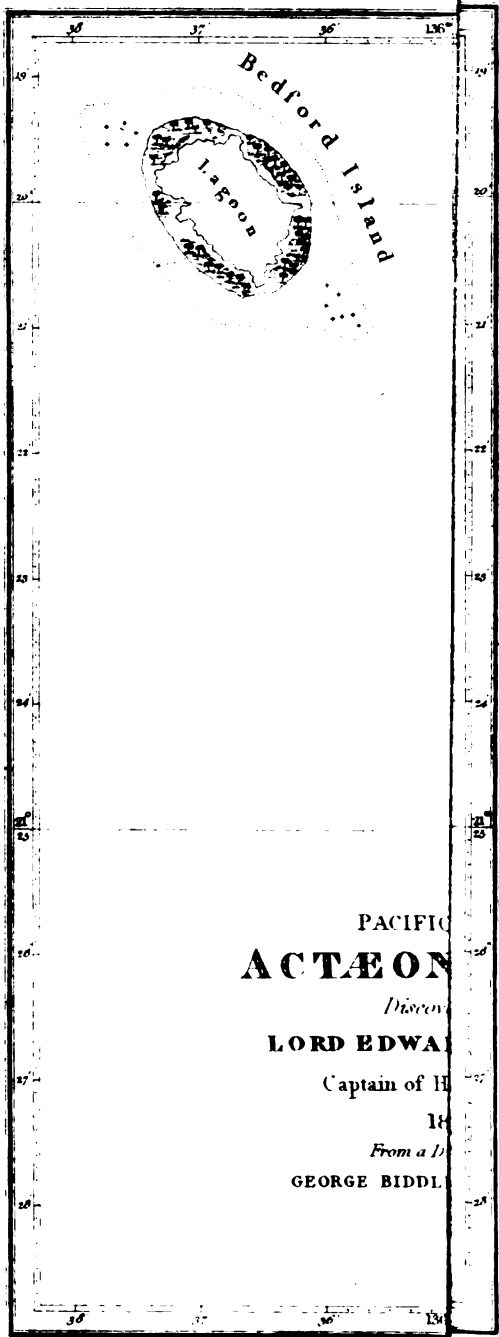
The wind being from the northward I kept to southward of the island, and on the 17th, in the afternoon, the isle of Avis was seen. The evening was very fine, and although it had been well looked for, the island was first observed from deck about six miles distant.* The sandy beach of the island appeared like a white line below the horizon, the grass with which its top is covered being of the same colour with the water that surrounds it, renders it most difficult to be seen till close on board of it. The next morning I landed with the master and Mr. Drury, and got sights which gave the distance east from Fort Charles, 52m. 57,ls., and from the Engineer's Wharf, Barbados, when we arrived there, west 15m. 56,85s. The meridian altitude of the sun was observed over the sea horizon; the latitudes were 15° 39' 39" N., 15° 41' 14" N., and 15° 41' 56" N.; the mean 15° 40' 56" N.

A light had been observed upon the Island the night before, and a party of Danes from the Island of St. Thomas, were on the Island gathering the eggs of the birds that inhabit the Island, and from which it derives its name, and which their infinite number fully justifies, for at a little distance from the Island they appear like a cloud hanging over it. They are of two species of *Sterna*, † *S. fuligenosa*, keeping possession of the north half of the Island, and *S. Stoldida*, the southern. They make a nest of a few small smooth pebbles, and lay two eggs, which are speckled, blackish red and white; they are in size and flavour, exactly like those of the plover. The Danes collect them twice a day, and during the time we were on shore, nearly enough were gathered by the boat's crew, to load the gig. They are sold at St. Thomas's, and when we were on the Island, a boat arrived from thence to take them away, the season being over.

The form of the Island is a long oval, in length about 830 paces, and in the broadest part 116 paces; it is not quite level, but the highest part is so little above the sea, that by lying flat on the ground there, I could but just see the extreme end of the blade of an oar 16 feet long, when held perpendicular, the handle resting in the sand at the water's edge. It is bordered round the east and west by the north, with rock and shingle, with a reef extending a short distance from the east and west extremities. The centre of the Island is covered with grass, and a verge between that and the shingle all round, of a species of *arenosia*, about sixteen paces wide. In the middle of the Island towards the south side, is a permanent hut for the egg collectors, off which there is good anchorage. In the centre, near the highest ground is a tomb; the spot is marked by a few

* The boys were immediately sent for on the fore-castle to show them the great necessity of keeping a good look out at all times.

† These names were given me at the Zoological Society, from skins I had brought from the Island, for the purpose of naming the species.



PACIFIC
ACTEON

Discovery

LORD EDWARD

Captain of H.M.S.

1841

From a Drawing

GEORGE BIDDLE

stones set round the edge. The governor, a person at the head of a party of egg collectors, having died, was buried there. The ship did not anchor, but soundings were carried out from the hut one cable's length, and were at that distance, 3, 5, $5\frac{1}{2}$, 6, 7, (which was half a mile from the shore, the hut then bearing north, where there is good anchorage, being protected by the reefs from the east and west.) Then standing S.E. by E., $7\frac{1}{2}$, 8, $8\frac{1}{2}$, $8\frac{3}{4}$, three casts with 9, thirteen casts with 10, 11, all fine sand, then no bottom with fifteen fathoms.

It would be a great advantage if a double row, or more, of cocoa nuts were planted or sown along the north side of the Island; they would not in any way interfere with the birds, whose eggs are an article of trade to the Danish colonists, and would render the situation of the Island visible to a far greater distance than is the case at present.

Having found several intelligent officers unacquainted with the method of measuring differences of meridians by chronometers, independent of the time at Greenwich, I add an example—

	h.	m.	s.
Feb. 28, 1835, at noon, a chronometer of Arnold's, was + on mean time, Port Royal	5	17	57,5
Rate, gains per day, 2,5s. + six days, the interval to March 6.		+	15
Error of chronometer on Port Royal, time carried to time of sights at Alta Vela	5	18	12,5
Error of chronometer as found by sights on mean time at Alta Vela, March 6.	4	57	27,8
	20	44,7	

Difference of meridian from Fort Charles, Port Royal, where the first error was taken, to the Island of Alta Vela, where the other set of sights were taken.

E. H.

ACTÆON ISLANDS,—*Pacific Ocean.*

HER Majesty's ship Actæon, under the command of Captain Lord Edward Russell, left Tahiti on the 20th December last, for Pitcairn's Island and Valparaiso. The following is an extract from the remarks of Mr. Biddlecombe, the master of that ship.

“On the 3rd of January, when standing to the N.E., we discovered land, and at 3 P.M. made out three islands; the N.W. point of the westernmost N.N.E. three miles. These islands not being laid down

in any charts, or mentioned in any publications, named them Actæon's Group, and the easternmost island, (its southern point in lat. $21^{\circ} 28' 30''$ S., and long. $136^{\circ} 26' 46''$ W.,) Melbourne Island *** the centre island in lat. $21^{\circ} 23'$ S., and long. $136^{\circ} 32'$ W. Minto Island *** and the westernmost island the N.W. point in lat. $21^{\circ} 18' 30''$ S., long. $136^{\circ} 37' 46''$ W. Bedford Island, ***. These islands are very low, with trees, and a heavy surf on the beach; no appearance of anchorage. The westernmost island appeared to be a lagoon island, with a reef about three quarters of a mile off its N.W. and N.E. extremes."

Mr. Biddlecombe in his laudable zeal to improve our charts, has added this group to them, and it is to be regretted that he had not an opportunity of giving a fuller account of the Actæon's discovery. There are many islands we believe well known to the local traders in the Pacific, which have not yet found their places on the charts, and Mr. Biddlecombe informs us that this group is among the number, an account of which he received from Mr. Thomas Ebrill, master of the Tahitian merchant ship Amphitrite of twenty-three years' experience in the low or dangerous Archipelago.

FRENCH AND ENGLISH MARITIME LAWS.

IN the year 1835, M. Marec,* a French gentleman, visited this country on a mission from his government, with the object of inquiring into the nature of the laws by which our mercantile marine is regulated.

Having collected much information from Mr. Charles Jones, the Admiralty solicitor, and Mr. Charles Boyd, collector of the customs in the port of London, to whom, with Mr. Enderby, he acknowledges himself under great obligations for their attentions to him, M. Marec forwarded his report to Admiral Duperre, the Secretary of State for the marine and colonies, a considerable portion of which has appeared in that useful work the *Annales Maritimes*. As we consider that much of M. Marec's report on this important subject will interest our own readers, both from the comparison made between the English and French laws, as well as the information it affords respecting the latter, we have prepared the following, and shall complete it in some of our future numbers.

QUESTION.

1. In what court of England are captains, officers, and seamen of merchant vessels, tried for such misdemeanours and crimes as they may have committed on board?

The French law classes the pun-

ANSWER.

Formerly all crimes committed beyond the jurisdiction of the ordinary courts of justice on shore, that is to say, the crimes committed within the flow of the tide and the mouths of great rivers, were

* Chef du bureau de la police, de la navigation commerciale et des peches maritimes.

QUESTION.

ishable offences or infringements under these heads:

An offence punished by *peines de police* (imprisonment from one to five days, and a fine of one to fifteen francs) is a (*contravention*) transgression.

An offence punished by *peines correctionales* (imprisonment beyond five days and fine exceeding fifteen francs) is a (*delit*) misdemeanour.

An offence punished by *peines afflictives*, or ignominious alone (such as death, hard labour for life, transportation, hard labour for a certain time, imprisonment, solitary confinement, banishment, civil degradation) is a *crime*.

Does there exist in England any analogous classification to this?

ANSWER.

cognizable by the court of Admiralty proceeding *without jury*. But in the reign of Henry VIII. (in the 16th century) parliament passed a law, declaring, that certain heavy crimes committed within the jurisdiction of the Admiralty court, should be tried according to the rules of common right; that is to say, by a *jury* sitting in a court constituted by virtue of royal commission: the said court being presided over by a judge of the Admiralty court, with the assistance of two of the common law judges.

The English law, does not admit of so minute a classification of punishable offences, as that which the French law does. Nevertheless, under the denomination of *transgression*, which corresponds to the French word

infraction, are included those of misdemeanour and felony, the first of which signifies *un delit*, and the second *un crime*.

Subsequently, all misdemeanours and crimes committed at sea, could not be judged but in London, either by a special commission, of which a judge of the court of Admiralty was the chief, and which is called in practice the Admiralty court, or by the ordinary criminal court in London. This last privilege is derived from an act of parliament of the 25th July, 1834, (4th and 5th of William IV. chap. 36. sec. 2. authorizing the central criminal court to try offences committed on the high seas:) it has been conferred on the criminal court of London, with the view of obtaining a more expeditious termination of business, this court sitting every month; while the commission or Admiralty holds its sittings only every six months. Thus the criminal maritime causes are very seldom brought before the Admiralty court, the intervention of which entails much delay and trouble. A judge of the Admiralty court is always appointed in the royal commission for the institution of a criminal tribunal; but he does not sit unless a maritime crime is to be judged.

It is to be observed that an act of parliament lately passed, that is, the act of 30th of July, 1835, relating to merchant seamen, art. 38, has brought certain offences committed on board merchant vessels, such as common assault and battery, within the provision of an act of the 9th year of the reign of George IV., which invests two justices of the peace with the power of judging offences of the same nature on shore. The punishment which the justice may inflict in this case consists in a fine of *5l.*, and imprisonment in fault of payment.

If, for the assault and battery on shore, has been admitted the propriety of avoiding the form of judgment by jury, how much more was it not necessary to subject offences of this kind committed on

QUESTION.

ANSWER.

board merchant vessels, to the mode of summary judgment instituted by the act of the ninth year of the reign of George IV. This want has been felt, and is here provided for.

2. Has the court of Admiralty which sits in London, jurisdiction in other courts in other parts of England ?

Or rather, do there exist other Admiralty courts independent of the court established in London, and in what ports ?

Do the colonies of England possess tribunals of this kind ?

the governor when it is necessary. colony, the circumstance is sufficient to give the Vice-Admiralty court power over her as if all the elements

What is the rule by which any particular Admiralty court is authorised to take cognizance of an affair in preference to any other ?

3. Formerly in France, independent of civil causes belonging to commerce and navigation, the Admiralty (according to the law of 1681) took cognizance of piracies, robberies, and desertions of the crews, and generally of all crimes and offences committed at sea, in ports, harbours, and rivers. The Admiralty court in France took cognizance also of the transgression of the regulations of the maritime fishery. Is it so with the jurisdiction of the Admiralty in England ?

Has the Admiralty court jurisdiction over an offence committed on board a ship, *in port*, equally as if it had been committed in a ship either *at sea*, or *at a roadstead* ?

tion of the Admiralty. The power of the Admiralty only extends to high water, and to the part of the shore actually covered by the sea water, so that the same part of the shore which may be under its jurisdiction at high water, ceases to be so at low water.

No; all come to the court in London. Nevertheless there exist in what are called the Cinque Ports, Admiralty courts, which on principle only, have the right of jurisdiction for the judgment of offences and crimes, but this right is not exercised.

Yes; there are Vice-Admiralty courts which proceed with a jury and are convened by the order of The moment that a ship reaches a give the Vice-Admiralty court of instruction existed at the place.

See former answer, from which it appears that all cases are tried in London, either by the Admiralty court or by the ordinary criminal court, excepting those which are of a nature to be judged in the colonies.

The jurisdiction of the Admiralty embraces all civil or criminal causes which originated on the high seas, in merchant vessels, on the coasts of the kingdom, or those of the colonies. It recognizes also, decisions of prizes, and questions of salvage, (on appeal,) and concurringly with ordinary justice, the discussions relating to the engagements of seamen. It judges also the transgressions of the regulations of the maritime fishery.

If the affair have happened in port, there is generally an agreement; that is to say, the jurisdiction of the shore may be adopted as well as of the sea; but if it happen at sea or at a roadstead, it always falls under the jurisdiction

QUESTION.

ANSWER.

Some years ago, a singular case occurred on this point of jurisdiction: a murder had been committed by a smuggler, who, from the shore, not then covered by the tide, shot a custom house officer while swimming. Which had the jurisdiction competent to try him? It was decided to be that of the shore.

Is this power of jurisdiction without distinction of the rank of persons, or is it limited to persons belonging to the crew?

This power of jurisdiction admits of no respect of persons; it is determined by the nature of the place, *ratione loci*.

4. How are maritime cases in criminal matters brought before a competent tribunal?

On a complaint lodged before a justice of peace, who examines the matter, who collects the witnesses, with the depositions, and

examines them, and sends the witnesses with the depositions and the accused, before the criminal tribunal. Should the justice of the peace decide there is no ground for allowing the complaint to go forward, the plaintiff may address himself directly to the Admiralty court; a jury then examines the affair, and decides whether there is ground or not, for taking it before this court.

The above course is likewise followed when the matter, instead of being referred to the ordinary criminal court, has to be judged by the Admiralty court. It depends on the plaintiff to choose either of the two.

Is there any public officer who either on denunciation or complaint, in virtue of his office, is authorised in the name of society to issue process, and to demand punishment by the laws?

No, except in some cases, which are few, and seldom occur; either the Attorney General, the Solicitor General, or a particular solicitor or attorney of the Treasury, or that of the Admiralty, according to the branch of the administration which the question may concern.

Thus, for a maritime criminal matter to receive judgment, it is necessary, in general, that a particular person should call forth the exercise of justice, in presenting himself as plaintiff: this person commences the prosecution in the name of the king.

5. In what essential points of proceeding does the Admiralty court differ from others? Are its proceedings more expeditious, or

No: they are slower, and more expensive.

Can the Admiralty court judge an offence, and at the same time apply the law, or does it proceed with the assistance of a jury, the declaration of which would form the basis of its decision?

The Admiralty court, like the criminal court, requires the assistance of a jury.

Mr. Jones knows only of two instances of it. He quoted one of a merchant captain, who was brought before a court of Admiralty for having improperly hoisted on board his vessel the flag exclusively intended for the royal navy.

N.B. Some offences, or acts of a particular nature, are brought before the court of Admiralty, (a single judge,) which decides without a jury. This case is very rare.

Is the intervention of a jury required for the trial of common offences, as it is for those of felony?

Yes.

QUESTION.

How many judges is the Admiralty tribunal composed of?

When this last court judges a maritime offence, it is not presided over by an ordinary judge, but the judge of the Admiralty court, who is then sitting, gives those necessary explanations of the affair which his special experience enables him to do.

Is it intended to modify the actual state of the law in any essential points for the punishment of offences and crimes committed on board merchant vessels?

It has been already seen by the first question, that this plan was adopted, the bill containing it, being that of the 30th July.

6. By what funds are the expenses of criminal process defrayed in maritime affairs?

but with regard to offences committed on the high seas, the expenses are defrayed from a fund placed at the disposal of the Admiralty, in the same manner as before the jurisdiction of the Admiralty was transferred to the central criminal court.

Thus, in whatever port the ship arrives, either of England, Scotland, or Ireland, if the complainant goes before the justice of peace, and if he be bound over with witnesses to prosecute the affair in the central criminal court, the expenses of his journey to London are allowed him, as well as those summoned to appear before the grand jury, and those served with process of judgment.

But in cases where the complainant or witness is not bound over by the decision of the justice of peace to follow up the affair, the expenses are not allowed.

The expenses of the defendant's witnesses are never allowed them, whether he be acquitted or not.

The expenses are allowed in all cases of prosecution for felony, and only in some cases for misdemeanour.

It is always at the discretion of the presiding judge to allow the expenses or not, and should he think that the prosecutor, or any witnesses, are blameable, he often refuses them their expenses.

N.B. It was Mr. Deane, advocate of the central criminal court, who gave me the preceding information on the article of expenses. This information is not so correct as might be desired: it is contradicted by the ship owners whom I have consulted, as will be seen in the observations against the succeeding questions.

7. Is the assistance of an advocate indispensable in the trials of maritime criminal affairs?

According to the French law,

ANSWER.

There are four judges at least in a special commission or Admiralty court, as in the ordinary

criminal court. When this last court judges a maritime offence, it is not presided over by an ordinary judge, but the judge of the Admiralty court, who is then sitting, gives those necessary explanations of the affair which his special experience enables him to do.

When this question was put, (in the month of July,) a bill then under consideration of parliament, that is the bill concerning *merchant seamen*, contained the proposal to take from the jury, and

to transfer to two justices of the peace, the right of judging certain offences, committed on board merchant vessels. It has been already seen by the first question, that this plan was adopted, the bill containing it, being that of the 30th July.

As far as concerns those cases which are not maritime, the expenses of prosecution before the central criminal court, are de-

frayed by the counties in which the offences have been committed, but with regard to offences committed on the high seas, the expenses are defrayed from a fund placed at the disposal of the Admiralty, in the same manner as before the jurisdiction of the Admiralty was transferred to the central criminal court.

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The assistance of an advocate is not indispensable. The accused has the right to secure the assist-

ance of an advocate at his own

QUESTION.

(art. 294, of the criminal code, and for the affairs of the court of assize) the accused is obliged to have an advocate chosen either by himself or the judge.

ANSWER.

expense; even if he be not in a condition to pay him he may obtain one, who upon his demand is appointed to that office by the judge; but the judge is not obliged to acquiesce with this demand, and may grant or refuse it, as he pleases. Generally the accused has no advocate, the judge filling up the office for him.

It may be moreover observed, that by an inconsistency, of which the English mode of proceeding affords so many examples, the advocate of the accused in criminal matters, is admitted to plead only the points of right; whilst in those of misdemeanours he may discuss the whole case.

8. Are judgments which are delivered on maritime cases of simple misdemeanour liable to be referred for appeal?

No: for misdemeanours as well as crimes, the judgments are final. They cannot be set aside, except by the issue of a trial, on some point of right, the decision of

which is then submitted to the fifteen judges of the kingdom.

9.—What authority is the captain invested with for the suppression of offences against the good order and discipline of his ship? Has he only the power to preserve discipline?

Does this power extend over his passengers as well as the crew of his vessel?

Here, necessity alone constitutes law: it would be dangerous to establish or lay down any particular rule, to fix limits of rigour which would afterwards become the source of a multitude of trials. In principle, the captain has all the authority over his crew and passengers that is required for the safety of his ship, and success of

the voyage. By the terms of his engagement, the seaman, on pain of forfeiting all, or part of his wages, or of all that belongs to him in the vessel, must obey the orders of his captain with respect to the duty of the vessel; and likewise those having for their object the maintenance of good order, and the prevention of vice and immorality. The captain ought, in all cases, to use his authority with moderation. On his return to England he may be brought to justice by any man in his crew, whom he may have struck, ill-used, or imprisoned in the course of his voyage; and, if he cannot prove that the punishment was just and moderate, he may be sentenced to make reparation in the shape of damages. The captain is authorized to employ force to suppress an outrage or crime; that is to say, to secure the punishment of a delinquent, by putting him beyond the power of doing any more harm; but he has no criminal jurisdiction over him, and on his return to the united kingdom, he must deliver him over to competent authorities, unless by falling in with a man of war, he may get rid of him sooner. In the case of mutiny, or open revolt, on the part of the crew, the resistance of the captain, with regard to the serious consequences which it may produce, is considered justifiable, as falling under legitimate defence, and his conduct will be judged accordingly. In one word, the captain should regulate the exercise of his authority by circumstances which will be afterwards appreciated by the court. I was

QUESTION.

told a very remarkable fact of this kind. Some years ago, a ship having on board a great number of passengers, had arrived in sight of the coast of England, when a storm overtaking her, all the passengers remained on deck, interrupting, by their presence, the management of the vessel and thereby increasing the dangers of her situation. The captain ordered the passengers to be battened down in the hold; they were crowded into it, and the want of air caused the death of several of them. A charge of murder was brought against the captain, in the name of the parents of the deceased, but the captain was acquitted on the consideration that the part he had acted was fully justified by the circumstances.

Has the captain the right to inflict punishment by his own means, the vessel being in a port of England, as if she were at sea, or at a roadstead?

Before inflicting punishment is he obliged to consult his officers, and to state it in writing, in any act whatever?

Company, but not in any others; the captains of which are bound to enter in their logs the punishment they have awarded.

ANSWER.

Not in port.

This ought to be done; prudence requires that there should be on board a kind of council of justice. This custom was followed in the ships of the East India

PENALTIES.

1. What punishment is assigned to him who uses abusive language towards the captain, or other officer?

In France, in the present state of the law, the man who commits such an offence, incurs no more than a fine of from one to five francs, established by the code of mere abusive words, acts 376 and 471, of the penal code of 1810. This punishment might be deemed sufficient between citizens; but it is easy to conceive, that the injury done to the captain, or his officer, presents a character of gravity which demands a severer check. Thus, by the project of penal law laid down for the mercantile marine, the punishment, in a case of abuse, would be imprisonment from six days to one year, with power in the judge to inflict an additional fine, from sixteen to 100 francs.

2. What punishment does the man incur, who threatens his captain or officer?

In France, in the present state of the law, no punishment will reach the author of a verbal threat, unless this threat be accompanied by an order, or under a condition,

None whatever. The captain in this case knocks the man down, or returns the compliment, or adopts any other method he pleases.

The English law in not providing any punishment for cases of abusive language, has acted (as the Admiralty's solicitor told me) up to the vulgar adage, that "*Bones are never broken by words.*"

Here again, the captain, in this case, punishes by any means in his power. The Admiralty's solicitor thinks it would be well to establish in England, a punishment against this offence, as it is intended to be done in France: the sailor should forfeit his wages

QUESTION.

(that is, an order to deposit a sum of money in a place indicated, or to fulfil any other condition,) in which case the offender is liable to be punished, art. 307 of the code, with from six months' to two years' imprisonment, and a fine of from 25 to 300 francs. It was deemed important, that a man who had offered to threaten his captain, even without an aggravating injunction or condition, should be hereafter punished; and for this the projected law provides the punishment of imprisonment from six days to one year, with power to add a fine of 16 to 100 francs.

ANSWER.

by judgment of the court of Admiralty without a jury. This should be a term of the contract, between the sailor and captain.

3. What is the punishment for the man who strikes his captain, or an officer?

In France, while (according to art. 309 of the penal code of 1810, modified in 1822) it is from six days to two years of imprisonment, and a fine of 16 to 200 francs, or one of these two punishments only; the intended law raises the minimum and the maximum punishment: thus, three months to three years of imprisonment, with power to add a fine of 50 to 300 francs.

with a weapon of any kind, he would be liable to suffer death or transportation for life.

There is no special provision made for this case, on the position of the sailor with regard to his captain. The general punishment consists in fine and imprisonment. The judge modifies its application according to the station of the giver and receiver of the blow, and naturally its application is more severe when a sailor is charged with exercising his pugnacious qualities upon his captain, than if deciding between one person and another in the ordinary relations of civil life.

If the sailor had struck him

4. What punishment is provided for seamen, who by fraud or violence towards the captain, take possession of the ship?

In France at present, it is (according to the law of 1825) punishment of death against chiefs and officers.

Punishment of perpetual hard labour for life against the crew.

Death to all concerned in the perpetration of the deed.

5. Is theft on board ship punished more severely than it is on shore?

According to the French laws in force, (art. 15 of the law of 10th April, 1825, referring to art. 386 of the penal code,) the author of a theft committed on board, even if he be a passenger, is subject to the degrading punishment of confinement for five years at least, and ten years at furthest.

Yes; a theft of that species is considered as a domestic theft. Nevertheless, the estimation of it is left to the discretion of the judge, who considers the value of the article stolen, and pronounces according to this value, and the circumstances of the theft, the punishment of transportation for a time, or for life.

QUESTION.

6. What is the punishment for the case of mutiny?

ANSWER.

Death: it is a case of felony.

7. What is the punishment for the case of plotting against the safety, the liberty, or the authority of the captain?

Death, if it should have been commenced carrying into execution, otherwise, it is only a conspiracy, punishable by imprisonment.

According to the law of 22nd August, 1790, (art. 11,) on the punishment inflicted in the French navy, conspiracy specified as above, entails on the authors, in a vessel of war, the punishment of hard labour for life.

For the same crime committed on board a merchant vessel, no punishment is provided at present. That which the amended law provides, consists of confinement, or, according to circumstances, of hard labour for a limited time.

By the term plot, is understood, a resolution, with the object of a criminal purpose, concerted and resolved between two or more persons.

8. What is the punishment assigned to desertion from merchant vessels?

The desertion of a merchant seaman is considered in England only as the violation of a civil contract, which is attended with loss of wages due at the moment of desertion. A justice of peace pronounces this if the sum be below 20*l.* sterling, but if above, it is decreed by the court of Admiralty with jury. In case of deser-

In France, it is the loss of wages and a servitude from three to six months in the lowest rating, in a vessel of war. (Ordinance of 31st Oct., 1784—law of 22nd Aug., 1790.)

tion after the advance of wages, the justice of peace may order one month's imprisonment.

If, after having signed his engagement, a sailor refuses to embark, the captain may obtain from a justice of peace, an order for arrest against him; if he persist in not embarking, without offering a sufficient reason, he would be condemned to hard labour in prison, during not more than thirty days, and not less than fourteen. The wages of a deserter are made over to Greenwich Hospital, if he were engaged at fixed wages, and they remain with the owner if he was engaged by share in the voyage.

The seaman who absents himself from his vessel without leave from his captain, forfeits for every day of his absence, two days' pay, which goes to Greenwich Hospital.

If on the arrival of a vessel, he leaves her without a written permission from the captain before the unloading of the cargo be completed, he loses one month of his wages, which also goes to Greenwich Hospital.

In the merchant seaman's act, of the 30th July, 1835, articles 6, 7, 8, 9, 10, will be found, new provisions against desertion and absence without leave.

9. Is the captain who becomes intoxicated while he is entrusted

No; that is an affair between him and the owner, who, if the

QUESTION.

with the charge of the vessel, liable to any punishment?

In France there is none at present. By the amended law he is to be interdicted the command from six months to two years, and even perpetually, with the additional power on the part of the judge to inflict, in all cases, imprisonment, from fifteen days to one year.

ANSWER.

drunkenness of the captain has occasioned him any loss, may sue him for damages in court.

10. On the arrival of a British merchant vessel in an English or foreign roadstead, and finding an English vessel of war there, has her commander any duty to fulfil towards the captain of this vessel? Is he bound to go on board the said vessel on his arrival or departure? does he run any risk of punishment by not doing so?

This obligation is finally imposed on the captains of French ships by the old ordinances, particularly by those of 25th May, 1745, and 25th March, 1765. It has been renewed and confirmed, by an ordinance of 31 Oct., 1827 (art. 101.)

According to the amended law, the punishment for neglecting it is a suspension from command from a month to six months, or imprisonment from ten days to six months.

11. Can punishment be inflicted on board of a man-of-war, on a man belonging to a merchant vessel, for an offence committed on board his ship?

No.

12. What are the punishments which the captain of a merchant ship is authorized to inflict, on the score of preserving discipline amongst his crew.

According to the French law (ordinance of 1681, liv. 11. chap. 1, art. 22) a captain has the power to inflict, on the score of discipline, as follows: imprisonment, stripes with a rope's end, confinement in irons, keeping on bread and water, placing on a capstan bar with two shot to the feet for one or two hours, &c.

The punishment of keel-hauling and that of rope's ending (with a gasket) have not been resorted to for a long time, and the mode of punishment commonly employed at present, consists in confinement in irons and putting on bread and water, or only a reduction of the allowance of wine and rations.

No: the captain of the man-of-war sends on board, if he have any communication to make, or if he have information to transmit to the commander of the merchant ship.

There is no provision made on this head. The captain may punish without having the formal right of doing so, but he exposes himself then to an action for damages, before the court of ordinary civil jurisdiction; and if it be found that he has exceeded the limits of moderation and justice, he is cast.

According to an English captain, whom I have specially questioned on this subject, the means of punishing on board of merchant ships, consists generally, only in confinement in irons and the reduction of the allowance of grog and rations. *The captain dare not strike, for fear of the consequences.*

present, consists in confinement in irons and putting on bread and water, or only a reduction of the allowance of wine and rations.

REPORT TO THE BRISTOL COMMITTEE, ON THE SUBJECT OF STEAM NAVIGATION.

[As the vessels* destined to make the important experiment of crossing the Atlantic by steam, will probably commence their voyages in the course of the present year, we consider the following report, which led to the adoption of the plan, will be so far interesting as to afford the means of comparing the estimated with the actual results.—Ed. N.M.]

Bristol, Jan. 1, 1836.

IN consequence of the daily increasing importance of steam navigation, and the general impression that the advantages possessed by this port fully entitle it to rank with others, between which and the United States projects for the establishment of a steam communication are already on foot, several gentlemen have commenced the formation of a company, with the view, first, of examining minutely the feasibility of the undertaking; secondly, for ascertaining in detail, from correct data, everything connected with its organization; and lastly, if such an investigation should leave no doubt of a successful and profitable result, to carry it into effect.

The first of these points, the feasibility of the plan, is the principal subject of the present report; and neither the labour of actual survey, nor the trouble of a critical examination, has been spared to arrive at a safe conclusion. Having visited all the principal steam ports, and sailed on every steam line, where the best practical information was to be obtained for this express object, the following remarks are submitted, although with great diffidence, as being fully borne out by facts observed, and as the results of a somewhat laborious investigation.

The principal voyages now regularly performing by steamers, are the following:—to Hamburgh, Bordeaux, Lisbon, Cadiz, Gibraltar, Malta, and the Ionian Isles; in the West Indies from Jamaica to Barbados against the trade winds; from Bombay to Suez; from Holland to Surinam; and from New York to Charlestown and the Havana. The voyages from, to, and between these places, have been performed, winter and summer, with regularity and safety, which fact of itself furnishes data sufficient for drawing conclusions favourable to feasibility, and which will be the more decisive when it is considered that most of them have been accomplished in vessels of less than 500 tons, not built for their stations, and with steam power disproportionably weak.

It is not therefore too much to assume, that vessels built expressly for their stations, modelled upon scientific principles, and propelled by efficient engines, are capable of performing long voyages, and can encounter the heaviest gales.

If particular proof be desired, I would instance the *Firefly*, of 560

* For an account of the "*Great Western*," one of these vessels, see pages 194, 608, 618, of our last volume—1837.

tons, and 140 horse power, which, without damage, made a run of 1,000 miles against a long and severe gale from the S.W. And I would here notice, that the open sea with its long swell is much more favourable for steaming than the short chopping angry seas of our own coasts and channels.

Assuming the point of feasibility to be established, I proceed to communicate the results of inquiry: first, as to the kind of vessels suited to the station; secondly, the requisite steam power, quantity, and nature of fuel, &c.; and lastly, I will notice some points bearing generally on the probable success of the undertaking.

SIZE AND KIND OF VESSEL.

First. The advantages of large steam ships over smaller ones, are more apparent in bad weather than at other times; they can hold on a straight course with a gale abeam, when small vessels would be buried in the trough of the sea, and would be compelled to deviate so as to bring their bows or their quarters to the swell, and either way lose ground. They neither lose their way nor do they fall off so soon; they labour less, are more steady to their work, and their paddles are not so often alternately immersed and free.

Secondly. The accommodations for passengers should be at least equal to those of the present first-rate sailing vessels, otherwise a prejudice would be raised against the steamers which would blight at once every prospect of success; this can best be effected by vessels of much greater dimensions than the largest steamers now in use.

Thirdly. It is well known that the proportionate consumption of fuel decreases as the dimensions and power of the engines are increased, and consequently that a large engine can be worked more economically than a small one. The resistance of vessels on the water does not increase in direct proportion to their tonnage. This is easily explained, the tonnage increasing as the cubes of their dimensions, while the resistance increases about as their squares; so that a vessel of double the tonnage of another, capable of containing an engine of twice the power, does not really meet with double the resistance. Speed, therefore, will be greater with the large vessel, or the proportionate power of the engine and consumption of fuel may be reduced. This accounts for the success of large vessels over small ones.

Fourthly. A large vessel having more hold on the water is with strong side winds less likely to be forced to leeward than a small one, and exposing less surface of upper works to her tonnage than a smaller one, is also, according to the foregoing rule, considerably less affected, in comparison, by contrary gales.

Fifthly. Expense in equipment does not ascend in the ratio of tonnage. Very nearly the same crew, and expense of outfit and stores, that 900 tons require, would be efficient in 1,200 tons.

Sixthly. It would be of great advantage to be enabled to carry a certain quantity of goods; this on a long passage is impracticable, except in a vessel of considerable tonnage.

Seventhly. As to the kind of vessel. Every steamer of large dimensions was inspected, both on and off the stocks, in the principal steam ports of England and Scotland; great improvements are being gradually introduced, more particularly observable in the Clyde than elsewhere, and I feel confident that a vessel, constructed upon scientific principles, with more regard to the strength required for a long sea voyage than came under my observation, would fully bear out the calculations as to speed and capacity. Such a vessel should be so rigged as to offer a good spread of canvass, for running free in breezes, when, with all sail set, she should average eight knots, with or without steam; or for scudding before the heaviest gales at possibly eleven or even twelve knots. She should also have well-fitted fore and aft sails, for sailing on a wind, to enable her to reach a port in safety;—this, with the means of throwing her paddles out of gear, would give her resources, and with the other combinations, would render her, in point of safety and certainty, superior to anything on the water. Long experience shows that steamers, built as they are, with greater length than is usual for sailing vessels, are not only quite as good sea boats, but also sail as fast, whether on a wind or going free as the generality of sailing vessels. The foregoing considerations, together with the following calculations, lead me to the opinion that, for the purposes of carrying cargo as well as passengers, the most speedy and certain passage, the greatest economy of power, and the best assurance of a profitable return for the capital invested, will require a vessel of at least 1,200 tons.

2. STEAM POWER, FUEL, ETC.

A most important consideration is, the relation of size to speed and power, the grand desideratum being the largest possible size that can be efficiently propelled with the smallest possible power. A vessel of tolerably fair proportions, and which makes in fine weather and smooth water eight knots with engines of small power, with engines of double the power would increase her speed to ten knots, and the effect of any addition in power beyond this is not worth consideration.

Small vessels, or vessels having only short passages to make, pay but little attention to economy of fuel; as long as they move at the desired speed, or are enabled to contend against the seas of their several stations, nothing else is considered. My calculations are, therefore, generally made upon vessels above 400 tons register. The average number of tons to one horse power, is less in the vessels belonging to the Bristol company than elsewhere; (except in isolated cases;) it is little more than two tons to the one horse; but the *Mermoid*, belonging to the Waterford company, one of the fastest and finest, approaches nearly to three tons upon the same power. On the

Dublin and Bordeaux line it is exactly three tons, and this is a trying voyage, the coals being shipped in Dublin for the passages out and home. The *Hugh Lindsay*, a heavy vessel built of Teak, requires more than one horse to three tons. The average of all the steamers trading on the west coast of England and Scotland, as well as of those belonging to the Irish companies, at the beginning of 1835, was about $\frac{7}{8}$ ths, but of the 85 included in the calculation, sixty were under 365 tons. Of those trading between Scotland and London, the *Perth* and *Dundee* have less than three tons to the horse power, while $3\frac{1}{2}$ tons is the allowance given to H. M. ships *Messenger*, *Phoenix*, *Rhadamanthus*, *Medea*, and *Dee*, whose average dimensions are rather above 800 tons. Of the packets running regularly between Falmouth and the Mediterranean, the *Plamer*, *Firebrand* and *Firefly*, average more than four tons. The *Curacoa*, of 400 tons, goes backwards and forwards to Surinam, with 100 horse power engines. H. M. St. ship *Hermes* is upwards of five tons to the one horse power; and the *Monarch*, one of the largest and finest vessels afloat, has four tons and one-third, and with that power makes excellent passages. The *Soho*, which has been running many years between London and Leith, and made trips to Portugal besides, is propelled by one horse power to the four tons of measurement.

From the above data it appears that increase of tonnage beyond a certain amount, say 500 tons, does not require increase of power at the same ratio that it does below that amount; my own observation, together with inferences drawn from the above, lead me to believe that a vessel of 1,200 tons, modelled on the present improved principles, and propelled by engines of 300 horse power, would contend much better against the elements, and go as fast, as a vessel of 600 tons and 200 horse power of the same build.

There is much difficulty in arriving at the true estimate of the consumption of any steam ship. One sort of coal will go one-fourth further than others, and a good fireman will use one-sixth or even one-fifth less to produce the same effect, than a careless or indifferent one. Some boilers generate steam better, and do not foul so readily as others, and some flues answer better than others. The best sorts of coal are stated to be the *Llanelly* and the *Swansea*; the former is called the *Langenock*, and the latter the *Graiola*; one authority states them to be as thirteen cwt. to seventeen cwt. of Newcastle coal; another as eleven to sixteen. The *Hugh Lindsay*, on her voyage from Suez found twelve cwt. go as far as fifteen cwt. of ordinary coal. I examined many engineers in their vessels at Glasgow, and never found their computed consumption to agree with the fact, which was only ascertainable by calculating the number and weight of the cart loads laid in, the length of time the fires were burning, and the quantity left at the end of the voyage, and even then no estimate could be correctly made of the loss by stoppages—

getting up steam—raking out fires—waste of steam—or of any other of the contingencies before alluded to.

The following table was laid before a committee of the House of Commons, as the consumption of different powers, by M^rGregor Laird, Esq., who filled the office of engineer of the vessels, and accompanied the Landers in their last expedition.*

Under 120 h. p.	10½ lb. pt. H.P. per hour.
160	9½
200	8½
240	8

In roughly calculating the consumption of engines, 9lb. per h. p. is usually taken, and that approaches probably to the nearest result of experiments. The question, however, suggests itself—Where have the majority of experiments been made? I should say in London. Certainly not in Bristol, or Llanelly, Swansea, Newport, or Lydney, as the same amount (9lbs.) has been handed down from the first establishment of steam packets. If the foregoing calculations, in respect to quality and quantity of coal and power, are correct, and the experiments whence conclusions have been adduced, were not made upon Langenock, Graiola, &c. &c., 7lbs. of either is equal to 9lbs. of the northern sorts; and engines of 300 horse power would not consume even 9lbs. of the northern sorts. In estimating the quantity which ought to be taken on board a steam ship, in the absence of positive information, I think it best to disregard this advantage, although the foregoing induces the belief that 600 tons of that which we shall be able to use, will turn out to be equal to 750 of the sorts in general use.

The quantity required for engines of 300 horse power, at 9lbs. per horse power per hour, would not quite amount to 29 tons per diem, or 580 tons (calculating upon full power and consumption the whole time) for twenty days. But there are circumstances which operate to lessen consumption—when the wind is fair, and both powers are in use, the same quantity of steam not being required, the consumption of coal is proportionally lessened; and when the breeze is steady and strong, the fires might either be kept very low, or suffered to go out. With a strong head wind (which alone can cause the voyage to be extended beyond fifteen days) the consumption of steam is diminished, the number of strokes of the piston being reduced in proportion to the resistance; the quantity at these times required, and the fuel would be proportionably diminished. It is therefore certain that, with proper management, even after a twenty days' passage, a considerable portion of the coal would remain unexpended.

But under ordinary circumstances, say in ten cases out of twelve,

* Messrs. Lairds, of Liverpool, are the builders of the iron steamers, now fast coming into fashion, and deservedly so. The Mermaid was built under their inspection, and according to their model.

the passage outward would be completed in much less time; and the return passage, in all probability, would seldom exceed twelve days; the quantity therefore unconsumed at the end of the voyage would average full a quarter of the quantity shipped, thus rendering it unnecessary to purchase for the homeward passage more than 250 tons.

3. WEIGHT OF ENGINE STORES, ETC.

1st. A fair average for the computation of the weight of marine steam engines, with their boilers, iron work, and water, is after the rate of rather more than one ton per horse power, say 320 tons for two engines of 150 horse power each; this, with 580 tons of coal, and 50 tons of anchors, cables, and spare stores of various kinds, will make 950 tons, leaving 250 tons outwards, and about 420 tons homewards, for goods, provisions, water, and passengers' luggage.

2nd. The number of passengers would be subject to variation, but in calculating the weight of provisions, baggage, &c., data being necessary, I would assume the number, with the crew, to be 200. Water for this number, together with the tanks for holding it, would weigh about 20 tons; provisions 5 tons; spare provisions 5 tons; baggage, 300lbs. for each person, about 30 tons; these added to the former will give 1,010 tons.

As the vessel would certainly carry her full measurement, this would leave 190 tons for general cargo; and as she would only take measurement goods, the absolute dead weight when full, although subject to variation, would generally be very much below the specified amount of tonnage.

4. LENGTH OF PASSAGE.

The average passages of sailing vessels are, from Liverpool to New York, thirty-six days, and from New York to Liverpool, twenty-four, upon a calculation of ten years. A steamer of 1,200 tons, well modelled, and fitted with engines of 300 horse power, would, in smooth water and calm weather, make at least nine knots per hour; in strong breezes, head to wind, six or seven. This computation would much diminish the period of twenty days before given, and the prevalence of westerly winds would ensure an average return passage of about thirteen days. In heavy gales when against her she would make short traverses under her tysails, assisted by the engine at seventy-two horse power; go generally five knots, and even then stay easily on every change (if only *a point*) of wind in her favour, and within four and a half points, without making lee way.

5. COAL STATIONS.

In the shortest track to New York, there is no place to touch at; nevertheless going to the Western Islands would be no great deviation to the southward; and St. John's, Newfoundland, is very little out of the direct track to the northward. At the former, in the Port of Fayal, I should recommend the establishment of a depôt of at least 500 tons

of coal. At the latter, coal in any quantity may always be obtained. Touching at either would depend upon the discretion of the captain, who would hardly pass their longitudes unless he felt assured that his supply was amply sufficient for the remainder of his voyage. And it may be observed that in the former case a finer steaming parallel would in a great measure make up for increase of distance, and in both the current of the Atlantic, from the tail of the banks of Newfoundland to our own coasts, would be proportionally avoided.

6. NUMBER OF PASSENGERS.

The number of steam ships, built and building, the daily extension of old lines, and the formation of new, the increase of factories for the production of marine engines, all show that steam is rapidly superseding sailing vessels, whether for long or short distances; no line having hitherto been established without having immediately had the preference, and ultimately taking away all the passengers from the sailing vessels. New York, the great emporium of the western world, is almost hourly increasing in importance; and although Liverpool is the general resort of her men of business, yet there are many grounds (too long to notice here) for believing that a regular line of vessels from Bristol would cause a vast influx of persons from America, and that a still greater number would take their departure from her quays;—not among the least of these the all but certain establishment of cotton spinning factories, the profitable returns of which solely depend upon the price of female labour.

Besides the New York line, for which so many of our citizens have subscribed, it behoves me to allude to others, which, either in respect to investment of capital, or improvement of trade, may be found to offer advantages worthy of consideration. The lines established, the number of vessels plying, and the numbers about to ply, to and from the ports of continental Europe, afford tolerable grounds for presuming that success has crowned the efforts of enterprising capitalists of other places. In the absence of sufficient information, as to the state or prospects of trade with those ports, I content myself with alluding to Bordeaux, Oporto, Lisbon, Cadiz, and Gibraltar.*

CHRISTOPHER CLAXTON, *Managing Director.*

CUSTOM HOUSE AND QUARANTINE REGULATIONS.

MR. EDITOR,—Although much has been done during the happy period of peace, which we have so long enjoyed, to simplify the business of the departments of the customs and quarantine, yet there exist remnants of the old evils, which constitute great annoyances, and cause a prodigious waste of time; and very considerable improvement might and would yet be made, were some of the inconsistencies

* Established since from London, Iberia, Don Juan, Braganza, Tagus.

and useless attendances at the custom house, as well as delays and expenses of quarantine, brought to the notice of those who have the power to rectify them.

Oaths have very properly been dispensed with: their notorious abuse was a gross insult to the understanding; but to substitute "a declaration," is a refinement of which it is very difficult to see the advantage. When the abolishment of the oath was resolved upon, would not a signature have been sufficiently binding and respectful, without adding the form of "a declaration?" Is there a man who would place his signature to any document, knowing it to be false, who would for a moment hesitate to declare it to be true? In practice it is well known, that "the custom house oath," was proverbially a farce; no man could get through the business of that department who ever considered it in any other light; its abuse had become reconciled even to the most conscientious: it was most properly abolished; and yet we are called upon to the present day to continue the impropriety by "a declaration" to the truth of many things of which we can possibly know nothing. For my part, I will candidly confess, that I never so much as looked over a manifest in my life; and I can neither clear out nor report without making a solemn declaration to the truth of one. I think it would puzzle the most able, specious pleader to show in what consists the difference between this and taking an oath.

However, as I will not pretend to be fastidious on this subject, which the practice of our business, I must confess, has long taught me to hold very cheap, the oath taking and making of declarations, I will freely admit that, leaving this absurdity to be reconciled by the higher powers, my present object has more to do with the unnecessary and very inconvenient loss of time which is caused by the attendance to make this declaration; and for all the purposes of which, I think I can easily show, our signature would do just as well.

Common sense points out, that neither a master of a ship's declaration, nor attendance, nor even hardly perhaps his signature, should be required on clearing out a ship at the custom house. For what possible good end is he now called upon, to spend hours of most valuable time, perhaps a day or even more, to put his signature to a manifest, and "declare solemnly to its truth?" This document usually occupies the broker and the clerks in the searcher's office, a considerable part of one day, and sometimes a great deal more, to check and compare with the notes, &c., &c., furnished from the ship by the public officers attending on board, the master being prevented knowing anything about what is doing there, by this very attendance at the custom house. Surely this checking and examination, gone through by custom house clerks and the brokers, if certified by them upon the manifest, would render it quite as efficient a document as the master's signature and his declaration, of the detail of which he is wholly ignorant.

It is worthy of remark, that in enlightened England, this country of free trade, which is supposed to set an example in commercial matters, to all the rest of the world, there is a farce gone through in permitting a ship's departure, with a cargo, that causes more annoyance, more delay, and more vexatious personal attendance, than is to be found at any place abroad; (at least within my experience, and which includes no small number.) At foreign ports the agent can clear out a ship, generally without the attendance of the master; indeed I have very frequently had the charge of ships in ports, (and both delivered and taken in cargo,) without even entering the custom house; and where any attendance is required, it is only to prove, how utterly useless and intolerable the regulation is. For example, at one place I go to, I am compelled to sign my name in a book, at the bottom of a blank page; what is written about it, I never could find out. We do nothing quite so bad in England; but it would puzzle me, exactly to define how much more reasonable and in accordance with common sense, is the fact, of being called upon to sign and declare to a manifest, of which one cannot know the details: this is surely absurd enough; for England, especially.

But what are the further duties? to sign a bond for permitting the shipment of stores, for which no other reason can be given, than to exact payment of a small fee, (five shillings I believe;) why not abolish this absurdity, upon the same principle that we annihilated those annoyances called "boat's licences." The boats remain just as liable to seizure, if illegally employed, as before; why not therefore retain the master liable for the consequences of re-landing his stores? this fee can hardly pay for its collection.

There remains another farce to be gone through, on this "lost day;" which truly is worse than all the rest. The master has to answer some foolish questions about "the Victualling Bill;" always ending with this, "have you any ship chandlery for sale?" I never could understand, what was the intent of this question. This victualling bill, I suppose, is meant to show, that proper provisions are put on board for the voyage; if that is its object, it is wholly ineffectual. It is fitted up usually by the broker's clerk at random; if it is to effect any good, it should be leisurely and correctly done by the owners, and signed by them, (they provision the ship,) and might be signed also by the masters, if thought proper: after which, there surely can be no occasion for the latter to attend to answer questions. Let it be examined, and if insufficient, returned, and the ship not cleared till it is amended.

The attendance at the custom house, to report upon arrival, is equally a waste of time, and useless. First of all, we are to sign a document, which certifies that all letters are landed. Of what earthly use is this? Next, we are to go to the "Alien office"—for what, I never could even imagine. The very existence of such an office is a dis-

grace to a free country : and I defy any one to show, that in its working, it is not wholly useless. What prevents as many foreigners as choose to come to England, landing when they like, and roving all over the country, and departing again when they choose ?—Certainly not the Alien office ; nor would any establishment whatever prevent it, in a country, with the free institutions of Great Britain ; and more, it ought not to be prevented.

The next step is, “ a declaration,” to a manifest for the inward cargo ; this is made out by the broker, from the documents furnished him, and the master never so much as looks at it ; he is, however, to answer, generally, two questions ;—first, what number of foreigners there are amongst the crew ? which I believe is however always stated in writing upon the manifest : next, have you any foreign sails or cordage ? which might (if it is not) be just as well also stated in writing. Surely, if the master signed the manifest, (and even that I think might be dispensed with,) the broker could do all that is really essential, in reporting a ship on arrival.

Now all this may be considered matter of no public importance ; and being a grievance, brought to notice by one directly subject to it, may not add to its weight ; but I declare it to be a *public injury*. It occupies most important periods of time, when a master of a ship would otherwise be looking to the interest of his owners ; it prevents his attendance to interests that affect a number of others—the care and safety of his ship, which during the time lost at the custom house, is often compromised, being then usually swarming with crimps, rogues of all descriptions, and drunken sailors ; and this opinion I am quite certain, would be given by the pilots who have charge during such scenes of confusion.

In respect to quarantine regulations, I am far from thinking that they can be done away with altogether ; for this reason, that however it may be questioned, whether or not a *contagious* disease like the plague, can be introduced into England, by means of the cargo ; yet, that it often is, I think is beyond doubt, into some of the southern European ports ; (all experience proves this ;) deference therefore to the regulations of such foreign powers, requires that *some* precautions should be taken by all others having intercourse with them.

Excepting, however, strictly “ contagious” diseases, like the plague and small pox, no notice ought to be taken of merely infectious complaints, which the march of the cholera all over the world, has surely fully proved cannot be arrested by *cordon sanitaire*, nor the strictest quarantine regulations ; therefore, such enlightened countries as France and England, should unite in protesting against allowing their intercourse with any part of the world being subjected to the annoyance and inconvenience of unnecessary quarantine regulations. It ought to be more generally known and acted upon, that some of the European powers, most ready to adopt prohibitory steps of this nature,

are very apt to do so, as much (or much more) to aid their revenue law. To preserve the public health, some line should be drawn, to prevent this abuse; if for instance such a government as Naples, chooses to prohibit free intercourse with England because there happens to be a fever in London; it should not be permitted. Cut off intercourse with them altogether, till they are brought to their senses, and don't admit their flag into an English port.

There are, however, some inconsistencies in our own ports, which bear on the present purpose. For instance, can anything be more truly absurd than subjecting a ship to quarantine, because she has been in the Mediterranean, (nay, I believe to have been at Gibraltar is sufficient,) even should she have subsequently been all over the world? this is, however, I believe, law. Very lately one of the Malta packets was detained in quarantine some days; I believe because she had in some way communicated with Algiers, having subsequently been freely admitted both at Gibraltar and Cadiz. From the former of these places, some passengers came home in another ship, who were actually on board the packet when she thus became compromised by her communication with Algiers!! But they were not placed in quarantine, and what completes the folly of this proceeding is, the reason given for putting the packet in quarantine, which was, that the plague was raging very badly in Tripoli. In the name of common sense what has Tripoli to do with Algiers, more than with Malta, Marseilles, Naples, or any other place? The wisecracks who placed this packet in quarantine, under such a pretext, no doubt had heard that the two places used to be known as "Barbary Powers," and thus coupled them together, though distant considerably more than 600 miles by sea, and less by land, cannot be said to have intercourse at all!

Again, how this absurdity spreads! the other day, a party of gentlemen were actually subjected to fifteen days' quarantine at Gibraltar, for having arrived from Algiers! The quarantine officers no doubt had heard of the vigilance of their brother officers in England, and were determined upon imitating so bright an example! All this absurdity cannot surely much longer be tolerated; and it is to be hoped, that a ship coming from a healthy, unsuspected European port, even should she have been previously in the Mediterranean, (or anywhere else,) will never again be subjected to such an annoyance as quarantine in England.

I am, &c.,

A SKIPPER.

SELF-ACTING FEEDER FOR BOILERS.

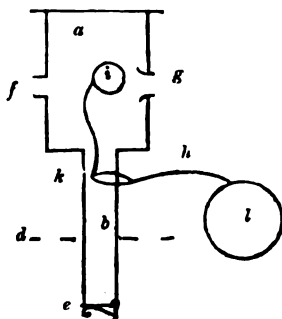
Calton, Glasgow, Nov. 13, 1837.

MR. EDITOR,—I had the pleasure to receive your esteemed letter of the 8th. ult. respecting my improved paddle-wheel for steam vessels.

I now take the liberty to transmit for insertion, in an early number

of the *Nautical Magazine*, a description of a Self-acting Feeder, which I have invented for the boilers of either land or marine engines.

a is a cistern placed on the boiler, or on the steam chest, from which the pipe *b* passes down below *d*; the water line in the boiler, on the bottom of the pipe *b*, is placed the valve *e*, which is kept up by a light spring. A pipe proceeding from the force-pump, is fixed to the nozzle *f*, consequently the hot water from the condenser passes through the cistern *a* and is discharged through a pipe fixed to the opposite nozzle *g*. An axis is passed through the pipe *b*, to the



ends of which, outside the pipe, are fixed the forked ends of the float-rod *h*, and to the centre of this axis, inside the pipe, the upright rod is fixed, which carries the stopper *i*, so that these rods form one lever, whose fulcrum is at *k*. It will be seen that as the water boils down in the boiler, the float-ball *l*, which is hollow, will descend; the stopper *i* will gradually interrupt the passage of the water at *g*, and the cistern will be filled. As the supply is still going on, the hot water will be forced into the boiler through the valve *e*, till the consequent rising of the float *l*, opens the escape at *g*. This simple apparatus will regulate the supply of water to the boiler, and thereby prevent many accidents which arise from negligence in this respect.

I am, Sir, yours respectfully,

ANDREW CARRICK.

OBSERVATIONS ON THE HURRICANES OF 26TH JULY AND 2ND OF AUGUST, 1837.

MR. EDITOR,—After the usual prognostics, this storm commenced at Barbados, on the 26th July, at 7 P.M., the wind at E.S.E. At 8, the wind was south, blowing with great violence, announcing the nearest approach of the centre of the rotary commotion to the island; at 8h. 30m. the wind had veered round to W.S.W., and the storm passed away by 9, the barometer rising, the duration being only one hour and a half.

It is reported that the tempest was scarcely felt at the island of St. Lucia, the nearest land to Barbados, in a direction to the N.W. by W. and distant about seventy miles, a proof that the diameter of the circle did not amount to that extent. Storms, however, were in the same day (the hours not given) experienced at Martinique and Dominica, lying to the N.W., directly in the general track of the hurricanes.

To have produced the changes of wind as stated by Lieutenant James, the commander of Her Majesty's Packet *Spey*, the pro-

gression of the meteor at Barbados must have been a little easterly of north—or its course may have been to the N.W. until the wind came from the south, when the meteor must have progressed, or obtained a lateral movement to the N.E., to have brought the wind upon the island from the W.S.W.; for, if the progression had been throughout to the N.W., the last shift of wind would have been from S. by W., or S.S.W., and it seems evident, if the tempestuous weather experienced at the three islands named, proceeded from one and the same hurricane, that the meteor after clearing St. Lucia must have proceeded to the N.W. to have struck the other two islands: it is more reasonable to believe that they were distinct disruptions, and soon dissipated, as the Barbados storm did not begin until late in the evening, and if it had been extensive enough to have admitted the posterior verge of the circle to have touched Barbados, and the anterior to have struck Dominica on the same day, it undoubtedly must have thrown its full force upon St. Lucia, which lies intermediately; the distance between the two first being about 160 miles.

From the changes of wind, as given by Lieut. James, there can be no doubt of the Barbados storm being a circular one, according with the Redfield theory of gyration round a centre; and unless a lateral movement to the N.E. be admitted, there is no other satisfactory mode that I am aware of, for accounting for the anomalies, but that of supposing the meteor whilst passing Barbados to have been pursuing a north course. This north progression would give the changes in accordance with the statement of Lieut. James; that is to say, from E.S.E. to south and round to W.S.W.; whereas, the N.W. progression would give E.S.E., south and S.S.W.; and as the storm with a N.W. progression would be drawing away bodily from the island, the "tail," or margin of the hurricane alone would crush it, (the first wind being E.S.E., the centre must have been in the opposite direction, or to the S.S.W. of the island; the E.S.E. wind being under the N.N.E. verge,) and the least violence of the wind be there felt, with little or no variation in strength; whereas, with the north progression, the centre of rotation would be approaching the island as the wind drew round to south, and when it reached that point, then would be the crisis, according with what actually took place, and the greatest violence of the wind felt, after which, from the recession of the centre, it would gradually lessen and end with the wind from the W.S.W.

The progression of the inter-tropical hurricane has been traced to the N.W. and W.N.W.; and the indefatigable research of Mr. Redfield has determined the more general course to be to the N.W.; but there appears to be reason for believing that at and near to the islands, that line is not invariably held, or, that if held, a lateral motion takes place, either of which would account for the discrepancy

between the theory and observed facts, and so reconcile them; but the difficulty seems to be, which is the true mode of action? both appear equally probable at first sight, but the reasoner, with imperfect and detached facts before him, cannot be expected to decide the question at once. From the facts, however, which present themselves to notice, some points deserve consideration as favourable to the north progression* of the Barbados storm; first, the meteor passing clear of St. Lucia; second, the crisis happening when the wind was at south; third, the hurricane ending with the wind at W.S.W., none of which could have happened with the N.W. progression. And in favour of distinct disruptions on the 26th, we may safely pronounce that one and the same circular hurricane could not have been felt on the same day at Barbados and Dominica, without the centre passing very near to St. Lucia, and devastating it.

Hurricane of the 2nd of August, 1837.

Her Majesty's Packet Spey, experienced the "brush" of this storm off Guadaloupe; the position not given. Lieutenant James, her commander, states as follows: Wednesday, 2nd, A.M., heavy squalls, with lightning and thunder, heavy sea running, wind shifted from S.E. to west. P.M. barometer rising.

With such scanty remarks, little can be done by way of elucidation. If the shifts were regular from S.E., by the south point to west, the Spey must have passed across the first and second quadrants, and the progression of the hurricane have been to the N.E. by E., the centre of rotation approximating fearfully near to the ship's position, which if it had in reality done so, would have torn the masts out of her. It is probable, however, that the S.E. wind spoken of, had nothing to do with the hurricane, but was merely one of those variable veins of air set in motion by the elemental commotion acting upon the surrounding atmosphere, and which in conjunction with calms, portends the approach of the formidable meteor. It is highly probable that the southern margin of the circle of operations just brushed the ship, when, of course, she would instantly get the wind from the west quarter; (her exact position at this time, with reference to the wind felt at Guadaloupe at the same period, would be of service in the investigation;) but whether this be or be not the true state of the case, it seems quite clear that the progression of the hurricane was not to the N.W. direct, otherwise Montserrat must have been involved in its effect; whereas that island was entirely exempted!

There appears no other way (except that of the contraction of the meteor) of accounting for this apparent anomaly than by admitting a lateral motion of the meteor to the N.E., whilst ravaging Guadaloupe, and that it afterwards swang, as it were, into its general course to the

* If the storm had had a N.W. progression, the first wind ought to have been N.E.

N.W., the margin of the third quadrant brushing Antigua, and passing clear to the N.E. of Montserrat, overwhelming Nevis, St. Kitts, Tortola, and St. Thomas,—but to have effected all this in one day the progressive velocity of the hurricane must have been not only unusually rapid, but so in the extreme, if the intervals of occurrence prove to be short. But if the storm commenced at Guadaloupe at 1 A.M. on the 2nd, and did so at St. Thomas, at 11 P.M. of the same day, the velocity of the progression would only be about twelve miles an hour; periods are wanting, however; therefore nothing can be determined satisfactorily on this head. It is quite out of the question to admit that the meteor was extensive enough to have covered the whole area from Guadaloupe to St. Thomas; such is possible, no doubt, but that it was so on this occasion, cannot be allowed, for the plain reason that Montserrat, which would fall into so wide a circle, was entirely exempt, that island lying only about twenty miles from Antigua, and about thirty-five from Guadaloupe.

That a single hurricane has desolated the whole range of islands of the Caribbean sea, lying in its course to the N.W. successively, may not be urged as a proof against an opinion formerly expressed of simultaneous disruptions in one and the same day on islands lying wide apart, or even at no great distance; and this opinion, so far from being set aside by the accounts just received, has acquired additional weight. The exemption of St. Lucia and Montserrat, when the neighbouring islands have suffered, and the N.W. progression at fault, justify its being maintained. The facts are sufficiently plain: on the 26th July, Barbados, late in the evening, suffered; the next nearest island, St. Lucia, scarcely felt the effect—but Martinique and Dominica, the next in succession to the N.W., both experienced a storm; so that unless these were distinct, the tube of discharge must have been drawn up, and let down again on the other side of St. Lucia (by which it escaped) before midnight (the hours are not given) of the 26th; we may reasonably believe that two different disruptions occurred; for if the circle had been wide enough to have covered all the islands that were assailed on that day, to a certainty St. Lucia would have had its full share of the devastation.

We have, Mr. Editor, a great deal yet to learn of the economy of these most wonderful and sublime tempests, before the theory, simple as it may appear, can be brought so perfect as to be made easy of comprehension; and this can only be effected by the care and diligent attention of observers in the different islands, or in ships, especially with reference to the exact periods of commencement and cessation of the storms, and the changes of the wind, with the hours and minutes of those variations. It is not enough to tell us that the wind shifted from this point to that: the changes ought to be noted in regular succession, and the hours and minutes when each variation took place.

On board vessels of war, surely one junior officer may be appointed to record the facts as they occur, without his aid in other duties, going on, being missed—the log-board entry, after all has passed, cannot be correctly depended upon—the object, sir, not being one of mere curiosity, would eventually repay the temporary loss, if such it would be considered, of the young officer's more active services ; for the knowledge to be gained in this way, let it be remembered, will assuredly come into play on future occasions, and this universally. Therefore, as a common good to all seamen, and those concerned in commerce, by the saving of life and property, does it not become a moral obligation in every commander to see this point attended to with all the care and minuteness, that the impressive occasion will admit of? If the wind shifts suddenly from any one point to another, let it be so written, by which we should be enabled to comprehend what actually took place, otherwise we are left in doubt. It is essential, too, that the name of the wind which precedes the bursting of the hurricane, and that which succeeds its cessation, be distinctly given.

In the particular case before us, the wind is stated to have shifted from S.E. to West: now we are here in doubt whether the wind veered gradually round by the south point to the west, or whether it shifted suddenly; a material point to be clearly understood; and it becomes also a question, whether this S.E. wind was felt before the hurricane burst upon the ship, or was the first shift after its commencement; another point of equal interest to be gained with certainty.

The importance of the subject to navigation, will plead my excuse, if such be needed, for expressing myself so decidedly on this occasion, and I sincerely trust, that from the wide circulation of the Nautical, there may yet be found many minds willing to attend to the suggestions here and in former papers thrown out, and that we shall not labour single handed in a cause which lays claim to the contributions of observing practical men, as well as the intellectual deductions of theorists.

To the intelligent mind of the "Friend" of the Nautical on the transatlantic side, we are everlastingly indebted for the first light, and the first impulse, in this hitherto mysterious operation of nature; and the fault will rest with us, as British seamen, if, through indifference, inattention, or a want of *esprit de corps*, we suffer the subject to rest where it is, or to die away for the lack of a little activity in the mental faculties.

Mr. Redfield, I believe, admits that in the hurricane's progress the circle may dilate. Is there any reason why it may not also contract at times, and again enlarge? Doubtless, the enlightened discoverer of the rotary process, is in possession of the details of the hurricanes, the courses of which he has traced; if it were not too great a tax

upon his time, it would be of great service in elucidating the subject, to re-examine the accounts for similar features to those we are now treating of, and others named in the paper on the "Aberration of Hurricanes." It is highly probable that, if the accounts enter into the particulars of each storm, it would be found that some of the islands escaped, which, by the general line of progression to the N.W., might apparently have suffered in common with the others, and if this prove the case in many instances, one of three things must be admitted, necessarily, in order to the perfection of that gentleman's theory.

1. Lateral motion. 2. An uncertain deviation from the general line of progression to the N.W., when over the land. 3. Alternate contraction and dilation of the meteor.

However assured we may be, as to the general accuracy of the facts stated in Mr. Redfield's exposition of the hurricanes, the apparent anomalies which we have traced in several instances, will continue to perplex us until cleared up, and may have the effect of lessening the confidence that would otherwise be reposed in the theory; for, when a seaman discovers that circumstances which have taken place in several instances, do not accord with that theory, he will probably be more ready to distrust it altogether, than be at the pains to throw light upon it by his own assiduous investigation. I may, therefore, express a hope that Mr. Redfield, will, if his time permit him, afford us the benefit of his intimate acquaintance with the subject.

STORMY JACK.

[Our Nautical readers are much indebted to the indefatigable, and hitherto solitary, exertions of our worthy correspondent on this important subject among our countrymen. Mr. Redfield, in the United States, has secured to himself lasting honour in being the first to produce a theory to explain the nature of hurricanes, and to point out to seamen how to avoid their danger. And we trust that the valuable exertions of these gentlemen will not be relaxed in the important cause which they have so successfully adopted.—Ed. N.M.]

PUBLIC QUAYS AT HOME AND ABROAD.—*Showing the want of proper facilities on the banks of the Thames, for the embarkation and debarkation of passengers in the Port of London.*

MR. EDITOR,—Your useful work has, in so many instances, been the means of remedying public, and sometimes, private grievances, owing to the great facility your pages have given to the complaints of individuals, whose letters have been based upon truth and justice, that I trust the present appeal may be attended with the same happy results.

The immediate object of my complaint is, the absolute want of any proper accommodation whatever on the banks of the river Thames, for

the millions of passengers who annually visit this greatest city in the world. Will it be believed, Mr. Editor, that in the year 1837, when London numbers its two millions of inhabitants, and when each successive tide brings with it 250 sail of vessels of different sizes, each containing some passengers, and many of them 600 or 700, that there are but two quays or wharfs for the accommodation of the public, for landing and embarking, (and these private ones,) to which vessels can approach alongside at any time of the tide, and even those are so small, that after the unfortunate passenger has scrambled over three or four vessels, upon planks, &c., at the imminent hazard of his life, and arrived on the quay, he must instantly depart; as the throng of persons coming down to the next departing vessel is so great, that, unless he did so, he would be in danger either of being forced back again into the vessel he had just left, or pushed overboard by the crowd, from the confined space of standing room which these private quays afford? Why, sir, I do not hesitate to say, that there is not a city in the civilized world, approached by a river; nay, there is not another town in all of Great Britain, having the advantage of a navigable stream, however small, where there are not public quays for the accommodation of the people, of such an extent, as would shame the authorities of this boasted metropolis, by a contrast with those, comparatively insignificant, which are to be found on the banks of the river Thames, in London. As I know that our conservators and bailiffs of the Thames will be astounded at such a bold assertion, I will name a few of the cities and towns, both at home and abroad, where such accommodation is possessed.

Southampton has a noble jetty where six or eight vessels may lie at a time.

Penzance has a noble quay.

Liverpool has a quay which twenty vessels may lie alongside of, and embark and disembark at pleasure.

Glasgow has the Broomalaw with room for upwards of thirty vessels alongside at once, with an open space sufficient to contain the passengers of thirty times as many more: I think this quay must be full a mile along.

Dundee has one of similar magnitude and capability; and the corporation of Newcastle has just voted a sum of about 30,000*l.* for the construction of a new quay, although, at present, the accommodation is infinitely superior to that of London.

Let us now contrast the state of accommodation upon the banks of the Thames, with that of many continental rivers and harbours. At Amsterdam, Mr. Editor, we shall find a line of wharfs and quays, where a small fleet may lie alongside to discharge their merchandise, or embark passengers, for the extent of nearly a mile; while the inhabitants have ample room to walk and enjoy the fresh sea breeze, and embark and disembark from any vessel, without risk of life or limb.

At Rotterdam the Boompjies is a noble quay, situated on the river Maas, fully a mile and a quarter long, and 100 feet wide ; fronted with a splendid row of houses, and a grove of stately trees : here, the hale traveller may land or embark at all times of the tide, while the invalid may be rolled gently down in his own carriage on the very decks of the ship. All your readers must have heard of the splendid quay, at Antwerp, on the Scheldt, almost unrivalled in the world, where everything has been most judiciously done for the comfort of the citizen and the traveller. Then, let your reader travel south and view the superb quay upon the banks of the Garonne, at Bordeaux ; at that city there is a quay two miles long, with a public road and footpath, 200 feet deep, well paved and faced by a row of stone mansions, many of them worthy the name of palaces. Bordeaux containing about 300,000 inhabitants, has, at least, 200 times more accommodation for the voyager than London affords, with five times its population ; in fact, in London, there is no public waterside accommodation whatever.

We now come to Paris, our rival ; and here Mr. Editor, I will show, although as an Englishman I blush to acknowledge it, the same superiority which I have already shown, is possessed by so many towns and cities. There is a witticism extant of the celebrated Lord Chesterfield, apropos to this subject, which shows how strongly prejudice will mislead mankind, and render abortive the advantages which travel ought to produce, in enlightening men's minds, and causing them to yield merit where merit is due. A certain French nobleman asking his lordship, while standing upon one of the splendid ranges of public quays, which adorn the banks of the Seine, whether the English had a river like that. He answered, yes, and we call it Fleet Ditch ! This no doubt was a good joke, but in my opinion completely lost its point for want of truth ; for I have no hesitation in saying, that as regards the state of the banks of the two rivers, with respect to what art has done for their improvement, the Thames is the ditch, and the Seine the river ; in fact, Mr. Editor, Paris contains fully five miles of public stone quays, open to the public, free of any charge whatever. Nature, has, it is true, given us one of the finest rivers in the world, but we have done nothing to improve it. At present, I speak only of the comparative state of the banks of the Thames, in the neighbourhood of London, as compared with the Seine and other rivers, in the vicinity of the different cities.

In further confirmation of what is here stated as regards the banks of the Thames, and the want of landing accommodation, I will just trace the banks on each side, up and down ; from Westminster Bridge down to Mill Wall, and back on the opposite shore. Commencing from Westminster Bridge to the Temple Gardens, there is nothing in the shape of landing-place, terrace, or public quay, save the few muddy steps at which the watermen usually ply. Temple Gardens, is the only redeeming spot upon the banks of the Thames, above Lon-

don Bridge, and no part of the river is so beautiful as this place, arising entirely from the simple fact of there being a good wharf wall, and the houses being thrown back about three hundred feet, as they ought to be. Until you arrive here you find, with the exception of some part of Privy Gardens, nothing but detached wharfs, varying in length from twelve to sixty feet, some projecting beyond others, with banks of mud between and in front of them, interspersed with dirty houses and ill-looking erections, of all heights, shapes and dimensions, huddled together without connexion or design; and this description holds good down to London Bridge: in this whole range there is only one single place where the public have a right to walk, and none to land at, except the watermen's stairs. Now, from London Bridge downwards, with the exception of London Bridge Wharf, just finished, and St. Katherine's, both used for landing, with the entrances of the docks, where the public often stand; the whole of the Thames may be said to be bordered with buildings, which to foreign eyes, ay, and British ones too, would appear to be intended for pig-sties, or pigeon-houses; they are certainly, without exception, the most dirty, abject looking tenements, in the shape of warehouses and stores, that ever disgraced the sides of a river; and, to complete the nuisance, in every instance where private dwellings are built, the backs project on the river, with the necessary adjuncts standing in bold and beautiful relief; and threatening from their decayed state, and falling condition, to overwhelm whoever should approach too near. The above, with an occasional landing-place between the walls, so narrow that you must turn sideways for ingress or egress, will complete the picture down to Mill Wall. There is not one public wharf where vessels may lie alongside, through the whole distance. I shall not more particularly notice the Southwark side of the Thames, as it is a mere repetition of the foregoing, and because there, the property is not so valuable, nor the population sufficiently great to render public wharfs and landing-places of that importance; but still, much may be done to improve the property, and add to the public comfort.

I think, Mr. Editor, I have made out my case, of the great want of public accommodation on the banks of the Thames; and I will now, as briefly as I can, point out the ill effects consequent thereupon, and the means of remedying them. The evil effects are two-fold: first, from the crowded state of the banks of the river, with the aforesaid tenements, the public are so completely shut out from a view of this noble stream, that you may travel miles within three hundred yards of its margin, without seeing the river at all, except down the vista of some small alley, or under the dingy archway of a coal-store. This accounts, in my humble opinion, for the filthy, dirty state of the streets contiguous to the river; and is the cause of malignant disease so frequently remaining riveted in a waterside neighbourhood, which would not be the case if the approaches to the river were large and

airy, as the flux and reflux of the tide would cleanse of foul air all those streets running at right angles down to it; and the public quays would become a source of health and recreation to the inhabitants, while general business would go on with redoubled facilities.

Secondly, in a mercantile or pecuniary point of view, the advantages of public quays and landing-places would be immense, provided they were sufficiently commodious, that five or six vessels may lie alongside at a time, and always afloat. At the present moment the whole population of London, and all who visit this gigantic city, by the best means of approach, water conveyance, in vessels of any size, are constrained to land either at the London Bridge Wharf, or St. Katherine's; and frequently the scenes of confusion at these places, more particularly Fresh Wharf, London Bridge, beggars all description; there being often five or six steamers alongside at once, and others coming and going with actual accommodation for two only, and the rush down Fish-street Hill, the jostling of coaches and cabs, and the eternal confusion consequent upon such a confined space, calls loudly for remedy. The damage to the steam packets also, must amount to some thousands per annum; and to crown all this, the wharfingers* have the modesty to ask three-pence for every person journeying to or from Gravesend, sixpence to all parts below Gravesend, and to foreign parts in a similar proportion. The annual receipts for passengers by steam alone, at this wharf, must amount to about 30,000*l.*, per annum; infinitely more than the value of the property. The consequence of this strange monopoly is, the almost certain ruin of the small steam boat companies, for it appears that the Greenwich companies are without a farthing to pay their dividends with, while they have paid about 6,000*l.* in one year, to this wharf. The Star, Gravesend Company, no dividends: they have paid for wharfage in London about 3,000*l.* The Diamond Company, 3,000*l.*, and other parties in proportion. In fact, the charges are so enormous, that unless something is done by the government for the public protection, many of these steamers must cease to run altogether, and the public will be deprived of one of the most rational and innocent modes of recreation that could possibly be found. I am satisfied that the immense number who annually embark and land in the port of London, from steam alone, is full two millions; and that one penny a head for sea voyage passengers, and one halfpenny for river ones, would be an ample and fair remuneration for the persons who may possess a wharf or quay, for the landing or embarking of passengers. Let a petition, Mr. Editor, be presented to government, signed by all the steam boat proprietors, asking for the use of the custom house wharf, now of no use whatever.

* Query.—Is the enormous tax of *two shillings* per head on "every living soul" embarking from, and landing on, the pier at Margate, still continued? and if so, what becomes of it? and how long is it to go on?—*PRINTER'S DEVIL.*

Were a wooden jetty run out from this wharf, one hundred feet along its whole length, and two tiers of small traders cleared away in front, there would be ample accommodation for six vessels to lie alongside at once, and almost always afloat; and further, may I ask, what are our public companies about, when a capital of 100,000*l.*, judiciously laid out in the purchase and making a wharf of about 800 feet long, would yield a clear revenue of 25 per cent., by the small charge of one penny per head for sea voyagers, and one halfpenny for river ones? Should this induce the erection or construction of proper wharfs or quays for public accommodation, the number of travellers would be materially increased, and the beauty of the river enhanced in a surprising degree.

I hope the above observations will tend to arouse the government and the other authorities to the manifold abuses now existing, through want of proper public waterside accommodation; and that some immediate provision may be made to protect the people from the grinding extortions now inflicted.

I am, Sir, your obedient Servant,

QUID.

[We trust that the above cogent observations of our correspondent will meet with that attention which they so eminently deserve.—Ed. N.M.]

WELLS PROPOSED IN STEAM VESSELS.—*By Captain J. B. Martin,*
Harbour-Master, Ramsgate.

Royal Harbour, Ramsgate, November 15, 1837.

It is a most extraordinary fact in the development of science, that it appears to take, at times, a gigantic leap towards the attainment of some specific end, then pauses for a long period; self-satisfied and neglecting minor improvements, the absence of which are continually neutralizing its most beautiful result. That highly intelligent engineer, Mr. Field, when on board the *City of London*, for the purpose of inspecting the state of the water in her boilers—water which had not been changed, except by a trifling waste, during a period of six weeks, and which was then perfectly free from saline impregnation, declared that he considered the method of condensation through metallic tubes, to be the greatest improvement in the steam engine since the time of Mr. Watt. How is it, then? I would ask, (and being perfectly disinterested I put this question in the cause of science and navigation,) How is it that new vessels are continually fitted with boilers inefficient for long voyages, incurring unnecessary loss of time and property, when the remedy is within the reach of the builder?—The *City of London* had performed voyages, the united distances of which were upwards of three thousand miles; her boilers were emptied, and the crowns of the flues were as clean as a gun barrel. What is then the drawback, or what is the cause why that method of condensation is not generally adopted? Were I required to state why I put this question home, I would state,—It is a species of indignation against engineers

generally, not personally, arising out of several circumstances of recent occurrence, but of this last in particular.

On the 13th of November, I was surprised by the appearance in our port, of the splendid steam ship, Paris, from Havre, bound to Ham-
burgh with passengers, and a valuable cargo. Having inquired the
purport of her visit, I was told, she had called for a supply of coals,
and she was accordingly placed in a berth where she could receive
them with all possible dispatch. The next day, finding the vessel did
not proceed, I interrogated the Hamburgh pilot, who informed me,
that the Paris carried more than sufficient coals for the voyage; but,
that they had put in because the valve of the blow-pipe was fixed,
had baffled all their attempts to release it, and the boilers were so full
of salt they could fire no longer without fear of burning them. This
was not the worst feature of the business,—the said blow-pipe went
through the flat of the vessel's bottom, therefore, it could not be got
at afloat *inside*, and if they laid the vessel ashore, the mud or other
substances would be liable to choke and plug up the pipe *out-
side*. There is no dry dock upon our coast nearer than Sheer-
ness, which could take in a vessel 200 feet in length, and thus
the parties were in a very pretty dilemma.—Here was a superb pair of
British-made engines, neutralized by a stupid valve attached to the
boilers; and after fumbling about for three days, and laying this fine
vessel ashore, at the risk of injury to her frame and machinery, it was
at last sufficiently cleared for her to proceed to sea. There can be no
doubt that Mr. Hall's condensers are a sufficient remedy for all this;
but there are so many pipes passing through the sides of steam vessels,
that, as an old master in that service, I have often apprehended serious
consequences from a flanch giving way in a heavy sea by the labour-
ing of the vessel; and I submit the following plan for the considera-
tion of engineers generally. Cold water must flow in from without
for purposes of condensation; pipes must convey outward superfluous
fluids, as waste water. These pipes have often been choked, during
my experience, and given us at times much impediment to our speed.
Now, if a small cylindrical well was formed in the body of the vessel,
and the whole of these pipes led into it, they would always be got at if
foul, independently of which they would be preserved from weeds,
mud, or any extraneous matter which is sucked into them from the
outside of the vessel; they would also be much shorter and stronger,
and no sudden and dangerous leak could take place. The formation
of such a well would occasion no alteration in the shape of the vessel,
as the bottom planks might run through as usual, being perforated
with augur holes, as in the cod fishery. The upper part of the well
might have a cover similar to the cold water cisterns now in use. I
am not an engineer, and merely throw out these hints, as a sailor,
anxious to see some improvement in marine engines which will super-
sede the necessity for these vexatious delays.

STEAMERS AS SAILING VESSELS.—*Unshipping v. Disconnecting.*

MR. EDITOR,—Two reasons have induced me to trouble you with some observations relative to the propelling of steam vessels, by sails only, and I hope that the facts which I shall adduce, will also show the best mode of taking advantage of the sailing qualities of these vessels.

My first reason is, that of having observed how few officers are aware, what efficient sailing vessels steamers may be made. But we should not be surprised at this when we find that writers on steam navigation have asserted that, “The idea of sailing altogether without the aid of steam, is a fallacy, as it cannot be done without disconnecting the engines, or unshipping the float boards; either expedient is too hazardous to attempt.” And I have also observed in the *Nautical* this remark, “that a vessel may be constructed for the purposes of both sailing and steaming, is a fallacy, and must be abandoned.” If these statements were correct, men of war steam vessels, or those engaged in making long voyages, would indeed, lose much of their utility. Secondly, I wish to let those know, who are interested in the new large steamers lately built, or now building, for the distant foreign trade, what has been actually accomplished by sails alone. Indeed, this question has been so often asked me, that I am anxious to give an answer in print, to which I may refer all inquirers. It is also fortunate, that the vessel, the performances of which I shall describe, is the first of the large men of war steam vessels that were built, and is decidedly inferior to some of a later construction. We have, therefore, every reason to suppose that, under similar circumstances, steam vessels of a more modern date, would perform better. I shall now, without further preface, give a case as an example, with all the particulars of which I am fully acquainted.

Her Majesty's steam man of war, *Dee*, lately under my command, was about two years and a half absent from England, during which time we sailed upwards of 14,000 miles with the paddle-boards unshipped. My constant practice, whenever the wind became fair (unless under pressing orders) was, down steam and unship boards. I certainly have tried disconnecting, but unless there is a strong breeze, a steam vessel loses so much from having, by her velocity, to turn two great wheels, that I never practised that plan. I will now mention the manner we acted on our return home, as an example how we employed either steam or sails alone, according to circumstances, and the state of the weather.

In February last, the *Dee* left Antigua, and after steaming for thirty-six hours in order to obtain a good offing, we proceeded on under sail alone, fetching the Western Islands, in eighteen days. There, the wind coming strong from the eastward, we immediately shipped the paddle-boards and up steam. After two days, the wind came suffi-

ently round to enable us to lay our course on the starboard tack ; when it was down steam and unship the boards. The wind coming once more foul, we again got the steam up, and arrived at Plymouth with nearly seventy tons of coal on board, our whole complement being 210. During great part of this voyage the weather was what might be called bad, at times, fresh easterly gales with a considerable sea running. But perhaps no voyage could better exemplify the utility of joining sailing, to a certain extent, with steaming, than a trip that the *Dee* had to make from Jamaica to Barbados, and afterwards returning to the former colony. To understand, completely, the nature of this voyage, it is necessary to remind your readers, that there is always a strong trade wind, blowing down from Barbados, accompanied with a strong lee current, running, at an average, about one mile an hour. As we had to touch at two islands going up, the distance was increased to 1,400 miles, to make which, required the steam to be kept up 229 hours. Our return voyage from the course we had to take, was 1,200 miles ; which occupied under sail alone, with paddle boards unshipped, 158 hours. Now observe, here is a distance of 2,600 miles run in 387 hours, being an average of 6·7 knots, or 7·8 statute miles per hour. Of course, the only expenditure of coals was in our passage up ; the quantity amounted to 173 tons, which being divided, as in fairness it ought, over all the time occupied, (as the *Dee's* power was two hundred,) gives five pounds per hour for each horse power. This voyage would very probably have been shortened twenty hours, by using the steam during the whole period, but at an extra expense of, at least, 200*l.* sterling.

There was also another advantage gained from being so long under sail alone ; we were enabled to make such necessary repairs, that upon our arrival at Port Royal, the *Dee* was reported fit for any service. The greatest run under sail alone, during the twenty-four hours, was by observations, one hundred and ninety-six miles, and as there was a heavy sea running which caused much rolling, I do not think the steam would have forwarded the vessel in the smallest degree ; indeed it might have been the cause of retarding her a little ; a convincing proof what an advantage a steam vessel, upon a long voyage, may take of a fair wind, in order to put the fires out, while the flues are swept, and the boilers are cleaned. To illustrate more fully this part of my subject, annexed is a table which shows the hourly average rate, and hourly expenditure of coals, per horse power, with their full steam up, of some of the best sea-going steam vessels, of which these particulars could be procured. By this table, a comparison may be made, of what was the difference between always employing steam, and only using it with a foul wind.

Names of Steam Vessels.	Hourly average in knots and tenths.	Ditto in statute miles and tenths.	Hourly average expenditure of coals per horse power in lbs.
A Atalanta	7·5	8·7	6·4
B Berenice	7·7	9·0	6·8
C H. M. St. V. Medea	7·9	9·2	8·3
D Dundee and London steam-vessels.....	9·0	10·5	10·0
E H. M. St. V. Dee	6·7	7·8	5·0

- a Left England, December, 1836. Average taken from her passage from Falmouth to India.
- b Left England, March, 1837. Average taken from her passage from Falmouth to India.
- c Commissioned, 1834. This average is taken from Dr. Lardner's article, in the one hundred and thirty-second article of the Edinburgh Review.
- d Average obtained from private information.
- e Launched in 1831. An average of a run of 2,600 miles, 1,400 of which the steam was used: the rest under sail alone.

Now, as to the time occupied in converting a steamer into a sailing vessel, and *vice versa*, that greatly depends upon the smoothness of the sea; but we found that in common weather we could ship the paddle boards in about an hour, and unship them in half that time. But, I understand, that they are fitting the paddle wheels of the large class of H.M.St. vessels, with boards in two parts, upon a plan invented by Mr. J. Field; if these answer, they will shorten the time necessary for either process by nearly one half. However, with the old boards, as an hour and a half ought to be occupied in getting the steam up, unless with a heavy sea running, no delay on account of the wheels not being ready ever took place.

My subject now leads me to a few general observations on the sailing qualities of steam vessels. It is a common idea, that this class of vessels, on account of their flat floors, when it is proposed to use their sails alone, are very leewardly, and from being so narrow are crank; but these opinions are quite erroneous. We found, when it was blowing fresh with a breeze up, that the Dee was a most weatherly vessel, and after having gone sufficiently over to be supported by the sponsons, that she had good stability. From the smallness of her sails, her head-way was of course less than other men of war, but the little leeway that she made, was something quite extraordinary. It is also stated, in a printed account of her M. St. V. Medea, that "she works remarkably well," (in this point the Dee failed,) and in another

place, "her best doings are in strong winds plying to windward, when she has frequently shown great superiority over the rest of the squadron." There is also no doubt that the large steamers now getting ready for the New York passage, will be found to have the same properties. But perhaps, upon the whole, light airs and smooth water are the best conditions for the sailing of this class of vessels, in comparison with other men of war, but then the paddle boards must be unshipped, the necessity of which, and the great superiority of this measure over disconnecting the wheels from the engines will hereafter be shown.

It is hardly necessary to tell a seaman, that great caution is necessary, in the management of these long vessels in bad weather, without the steam up. A reefed fore and aft foresail, and a main trysail are the two best sails for them under these circumstances; a mizen trysail does not answer, as the sail requires to be placed rather forward. A considerable press of canvass, in order to keep her steady, will also be found necessary; of course a good look out must be kept to get the steam up, if a severe gale with a heavy sea is likely to come on.

In commencing these remarks, I proposed to show what was the best manner of getting at the sailing qualities of a steam vessel; in my opinion it is simply to unship the paddle boards, having already shown the advantages of doing so over the plan of disconnecting the wheels. In confirmation of this opinion, I may also quote an observation made in your November number, by Mr. Peacock, the master of H. M. St. V. Medea. After praising that ship's performances in strong breezes without steam, he adds, "but in light airs, when her velocity is not sufficient to make the wheels revolve, she is always in the rear, and has frequently from this disadvantage been kept becalmed at the entrance of a port, and kept out for the night, whilst the other ships have reached the anchorage." Now in the Dee, (an inferior vessel,) we found that light airs was our very best weather for sailing, in comparison with other ships. That it would have been the same case with the Medea, there can be no doubt, if the paddle boards had been removed; but that vessel using Morgan's patent wheels, rendered this measure almost out of the question, as the iron work left would have produced nearly as much resistance. For this reason alone, in my opinion, no man of war steamer ought ever to be fitted with them. I am, Sir, &c.,

United Service Club, Dec., 1837. WM. RAMSAY, Com. R.N.

STEAM INTERCOURSE WITH INDIA.

Plymouth, Nov., 1837.

MR. EDITOR,—Having always considered the views of Dr. Lardner, on the subject of "Atlantic Steam Navigation," as founded in error,

it was with considerable interest we perused the logs of the *Atalanta* and *Berenice*. The practicability of an intercourse by steam, with distant lands, is now fully proved; but, Sir, had those vessels undertaken the voyage to India solely for the purpose of demonstrating the capability of steam communication to that country, *via* the Cape of Good Hope, we should not have felt satisfied with the result of their performances, as developing that expedition of which steamers ought to be capable. Bad coals and paddles, which at this day ought to be obsolete, were furnished to both, notwithstanding they have established the fact for which we have long contended, namely, that a properly constructed and adequately furnished steamer is fully capable of maintaining an expeditious intercourse between England and India, sufficient to induce any spirited company to run vessels thither. The above steamers averaged about 180 miles a day, or $7\frac{1}{2}$ knots. Now, Sir, we have no hesitation in asserting, that were such a vessel as H.M.S. *Medea*, for instance, fitted with Massey's or Morgan's wheels,* and furnished with good nubly coal which shall not have been exposed for months to the changes of weather in the open air, she would not fail to average, at the lowest rate, nine knots an hour, or make good 215 miles a day throughout, and thus shorten *time*; and although it may have been deemed judicious to run into the Gulf of Guinea, in the hope of escaping the effects of the trade winds, and making Fernando Po a replenishing place for coals, yet as going head to wind constitutes the perfection of a steamer;—and the object of going so far out of the direct course having proved unavailing, in regard to *Atalanta*, the opposing winds having exerted their full force all the way from Fernando to the Cape, we would prefer Sierra Leone as the depot, and from thence, to shape a course direct to the Cape, thereby shortening the distance also, by upwards of 800 miles.

From Sierra Leone to the Cape is, in round numbers, about 3,000 miles; this, at only 200 miles a day, (instead of 215,) would require but fifteen days; and suppose the expenditure of coals to be (as we believe it is) eighteen bushels an hour, and going eight and a half knots, will give us thirteen miles as the work of a ton of coals; then 1,000 miles will require 230 tons; but suppose a ton of coals to do no more than ten miles, still we should have sufficient; as the *Medea* according to Mr. Laing, the builder, stows 300 tons below. (We deprecate the system of calculating the expenditure at so many *pounds* of coals per horse power; Newport coals weigh 90lbs. per bushel; Newcastle, eighty-eight; Wallsend, eighty; Wylam, seventy-seven, &c.)

* Let interested cavillers say what they will against the latter, they cannot disprove their wonderful performance in the case of the *Spitfire*, when on her beam-ends the lee paddle wheel totally submerged, during the hurricane in Barbados; the movement of the radius rods of the rising paddles preventing the counter effect of the press of water which would otherwise have neutralized the power of the lowest floats, and caused the wheel to stand still, by which alone was that vessel got off, after touching on the reef; the feathering of the uprising paddle freeing them from the weight of water, whilst the others exerted their full hold on it.

Were it proposed to establish a regular line of steamers, say to Calcutta, it would be advisable to run one steamer to the Cape; where, as there are no quarantine laws, there would be no detention; and a second steamer might proceed on to Mauritius, Trincomalee, Madras, and Calcutta. Passengers to Calcutta, average yearly 767; and from thence 665; to Madras 573, and from that port 459; and including Ceylon, will average about 100 persons per month, to say nothing of the intercourse with Madeira, Teneriffe, Sierra Leone, Cape, and the Mauritius. The trip to the Cape would occupy about four weeks, (about twenty-eight days,) and thence to Calcutta four weeks more, exclusive of stoppages and detention. Returning by way of St. Helena and Ascension, steamers may husband coals, by disconnecting the wheels, and avail themselves of the trades'; touching for a few hours at Sierra Leone, where they may fill up any deficiency of coals, which article may be forwarded to them by the outward-bound timber-ships.

TWO OLD COMMANDERS OF STEAMERS, R.N.

LOCAL ATTRACTION.—REPORT FROM H.M.S. PRINCESS CHARLOTTE,
104 guns.

No. 1.	No. 2.	No. 3.	No. 4.	No. 1.	No. 2.	No. 3.	No. 4.
Direction of Ship's Head.	Observed Bearing of Object.	Correct Bearing of Object.	Local Attraction.	Direction of Ship's Head.	Observed Bearing of Object.	Correct Bearing of Object.	Local Attraction.
North.	S. 87 W.	S 86° 36' W	+0 24	South.	S. 85 W.	S 86° 36' W	-1 36
N. by E.	87	...	+0 24	S. by W.	85½	...	-1 6
N.N.E.	87	...	+0 24	S.S.W.	86	...	-0 36
N.E. b.N.	87	...	+0 24	S.W. by S.	86	...	-0 36
N.E.	87	...	+0 24	S.W.	86	...	-0 36
N.E. b.E.	87	...	+0 24	S.W. b.W.	87	...	+0 24
E.N.E.	87	...	+0 24	W.S.W.	87	...	+0 24
E. by N.	87	...	+0 24	W. by S.	87	...	+0 24
East.	87	...	+0 24	West.	87	...	+0 24
E. by S.	87	...	+0 24	W. by N.	87	...	+0 24
E.S.E.	87	...	+0 24	W.N.W.	87	...	+0 24
S.E. by E.	87	...	+0 24	N.W. b.W.	87	...	+0 24
S.E.	86	...	-0 36	N.W.	87	...	+0 24
S.E. b. S.	86	...	-0 36	N.W. by N.	87	...	+0 24
S.S.E.	85½	...	-1 6	N.N.W.	86½	...	-0 6
S. by E.	85	...	-1 36	N. by W.	87	...	+0 24
	1386½				1385		
					1386½		
					2771½		
					32		
						= 86° 36'	} Correct Bearing

Malta, 11th Nov., 1837.

A. FANSHAWE, Captain.
T. ELSON, Master.

[We are unable to state the position of the compass with which the foregoing observations were made, but conclude that they have been reduced so as to show the actual deviation of that in the *Binnacle*.—ED. N.M.]

Naval Chronicals.

LIGHT ON CAPE FRIO, BRAZIL.—INTERESTING TO NAVIGATORS.—A letter from MESSRS. Steele and Manton, dated Rio Janeiro, October, 11, says—“ We find some of the captains coming here are ignorant of a revolving light on Cape Frio.”—*Lloyd's Reports*.

The foregoing “interesting” paragraph appeared in the *Shipping Gazette*, of the 8th December. We merely transfer it to our own pages to remind captains of vessels bound to Rio, of the fact of there having long been a revolving light on Cape Frio, and that the “ignorant captains” alluded to, had forgotten to refer to the *Nautical Magazine*, where in page 698 of our volume for 1836, and in page 540 of our volume for 1837, they would have found all about it.

THE GULL STREAM LIGHT, RAMSGATE, Dec. 4.—The light on the Goodwin Sands, usually known by the Gull Stream Light, having sprung a leak during the past week, which was announced by signal guns, was, on examination, found defective, having been upwards of twenty-five years on the station, and has been replaced by a new vessel. Mariners will now observe the new vessel has two masts, and exhibits a bold, brilliant light on each mast, considerably apart, and which, for grandeur, surpasses any previous trial. The only fear is, that some may unfortunately mistake this light before it becomes sufficiently known. Its brilliancy is admired by all, and adds additional lustre, if possible, to the unremitting attention of the Trinity-house. The old Gull Stream Light had but one mast. She was towed back to the river by the Trinity steam yacht.—*Shipping Gazette*.

SOUTH AUSTRALIAN SETTLEMENTS.—In our volume for 1836, p. 506—691, we noticed the departure from this country, on the 4th of August, of his Excellency, Captain Sir John Hindmarsh, governor of South Australia, in the temporary command of her Majesty's ship, *Buffalo*. The following account of the arrival and installation of the governor at Port Lincoln, is from the second number of the *South Australian Gazette*, dated 3rd June last, from the pages of which we expect to derive considerable information concerning the neighbouring shores of that important new colony, more particularly from its being presided over by a naval officer.

“Since the month of March, 1836, vessels had been continually leaving England for our new colony. The *Rapid*, with Colonel Light, the surveyor-general, the *Cygnets*, *Africaine*, and *Tam O'Shanter*, with the rest of the surveyors, Mr. Gouger the colonial secretary, Mr. Brown the emigration agent, and a strong party of labourers; the South Australian company's ships, the *Duke of York*, *Lady Mary Pelham*, *Emma*, and *John Pirie*, with the company's officers, servants, and stores, had all arrived in safety, with the exception of the *Tam O'Shanter*, which met with an accident at the mouth of the harbour; the consequences of which, however, to the ship and cargo, have not been so serious as at first they were expected to be.

“On the morning of the 24th of December, her Majesty's ship *Buffalo*, entered the magnificent harbour of Port Lincoln, and found the *Cygnets* at anchor in Spalding Cove. Captain Lipson, R.N., naval

officer and harbour master, went on board with a letter from Colonel Light, the surveyor-general, to his Excellency the governor, announcing the most desirable location of our metropolis to be on the eastern shores of the gulf St. Vincent; at the same time encouraging us with the most glowing description of that portion of the country. The governor, accompanied by his private secretary, the resident commissioner, and the harbour master, landed at the head of Spalding Cove. There is no fresh water in the cove, and the soil around its shores is barren; it is covered with scrubby wood, apparently a stunted variety of Eucalyptus. The view of the harbour of Port Lincoln itself, however, from Cape Donnington, and the entrance to Spalding Cove, is beyond description fine. We, who had for our last port the splendid harbour of Rio de Janeiro, felt no difficulty in giving the preference to Port Lincoln. The ranges of beautifully wooded hills, rising behind Boston Island, extending on the one hand, to the head of the harbour, and on the other, along the western shores of Spencer's Gulf, as far as the eye could reach, plainly indicated a rich and fertile country. In consequence, however, of the intelligence conveyed in Colonel Light's letter, respecting the proposed location in St. Vincent's gulf, and the knowledge that the officers of the government, who had preceded his Excellency, were anxiously awaiting his arrival on the plains near Mount Lofty, it was determined to proceed thither without delay, and in company with the Cygnet, and the Buffalo, came to anchor in St. Vincent's Gulf, Mount Lofty bearing due east, on the morning of the 28th.

"At two o'clock of the same day, his Excellency, accompanied by the ladies of his family, Mr. Fisher, the resident commissioner, Mr. Stevenson, his Excellency's private secretary, the Rev. Mr. Howard, colonial chaplain, Mr. Gills, colonial treasurer, and their families, proceeded to the shore in three boats, escorted by a party of marines, and landed on the beach at Sturt's River. They were received and welcomed by Mr. Gouger, Mr. Brown, Mr. Gilbert, store-keeper, Mr. Kingston, deputy surveyor, Mr. Morphett, Mr. Thomas, and the other gentlemen, who had fixed their temporary habitations on the plain.

"His Excellency met the other members of council in Mr. Gouger's tent, where his Majesty's orders in council, erecting South Australia into a province, and appointing the colonial officers, and his Excellency's commission as governor and commander-in-chief, were read, and the customary oaths administered to the governor, members of council, and other officers present.

The commission was afterwards read to the settlers, of whom about 200 were present. The British flag was displayed under a royal salute. The marines fired a *feu de joie*, and the Buffalo saluted the governor with fifteen guns. A cold collation, provided for the occasion, was laid out in the open air, of which the party partook. The health of his Majesty, the governor, officers, success to South Australia, and many other loyal and appropriate toasts were given, and drunk with great enthusiasm; and our national anthem, combined with the circumstances under which it was sung, had more of grandeur in its simplicity, than those only who have heard can conceive.

"Nothing could be more delightful or promising, than the aspect of the plains, named by his Excellency, Glenelg, on which the government was constituted. They are of great extent, nearly as could be

guessed, twenty miles in length, by about eight in breadth. The soil appeared to be of the richest quality, and was pronounced equal, by those who had seen both, to the prairies of Ohio and Indiana. Numerous splendid trees of the eucalyptus genus, the *Banksia rosa-marina-folia* in full flowers, studded the plain. The lupin, buttercup, and several of the wild flowers of our own country were met with, and hailed with delight. Parrots, parroquets, and quails were found in great variety. Everything indicated, in short, the wild profusion which nature delights to throw over her most favoured spots, and few of the agriculturists present but hoped their 'lines would fall in such pleasant places.'

"The proceedings of the day concluded happily, as they had begun. Good feeling and good fellowship prevailed on all sides, and, 'May South Australia flourish!' was the earnest prayer of every heart."

We find in the same number of the Australian, the address of the judge, Sir John Jeffcott, to the grand jury; a piece of extempore composition breathing benevolence in every line, and uniting with the duty of the judge, those sentiments of pity and kindness towards the poor Aborigines, which do honour to his head and his heart. It is indeed highly gratifying to find such expressions fall from the lips of a British subject who is to administer justice in that distant land; and happy would it have been for other Aborigines, had they been in the fortunate position of those of port Lincoln. But our readers shall judge for themselves from the following passages which we have selected, from their reference to this subject, and the conduct of our seamen. The natives of other distant lands have too much reason, we fear, for the retaliation of revenge for outrages committed by the latter. Sir Jeffcott says, "Upon looking into the calendar, I am sorry to perceive that the list of prisoners is much more numerous than I expected, the offences of a graver character than I anticipated in this early state of the colony. It is, however, satisfactory to view, that the prisoner, who is charged with the most serious offence in the calendar—I mean the individual charged with burglary,—is not one of our colonists, but an importation from Van Dieman's Land. Two others are in the same situation, being sailors, charged with a riot and rescue; so that out of the seven prisoners for trial, only four, or little more than half the number, are of the class of the emigrant population; and the offences, with which they are charged, are of a comparatively light complexion. There is one offence, however, to which, although it is the last upon the list, I shall first advert; because it is the one upon which I consider it of paramount importance I should offer a few observations; and I trust, that, the observations which I consider it my duty to offer, may make a due impression upon those for whom they are intended.

"I perceive, that two white men, settlers of the labouring class, are charged with the offence of stealing a jacket and some of their warlike implements (spears and waddies) from some of the aboriginal inhabitants of this province, and that this theft, petty in its amount, but of great importance, when viewed with reference to its consequences, was committed in a hut, which these poor natives had constructed for themselves, at the town of Glenelg, in imitation of our huts; being the first constructed by them, a circumstance in itself one of congratula-

tion, as their first step towards civilization : for you are aware, that, in their savage state they have no fixed habitations, and will have to look to us for instruction in all the arts of civilized life, towards which this has been their first interesting, though feeble, essay."

"If there be one object to which, more than another, the attention of the government of this province has been called, it is the state of these poor people. It is one to which the benevolent nobleman, Lord Glenelg, who presides over the colonial department, has in an especial manner directed the attention of his Excellency the governor, who in consequence of his instructions, immediately upon his landing, issued a proclamation, declaring, that the aboriginal inhabitants of this province, throughout its wide extent, were to be considered as British subjects. It is one upon which His Majesty's colonization commissioners for South Australia, in their first report to Parliament, have expressed themselves so strongly and appropriately, that I think I cannot do better, while I am upon this subject, than read to you a paragraph from that report; in every word of which I cordially concur. The commissioners say: 'While labouring to promote the prosperity of the British dominions, we may be permitted to rejoice in the brightening prospects of the world. If the colonization of South Australia can be so conducted as not only to protect the aboriginal inhabitants in the enjoyments of their rights, but to extend to them the guardianship of legal government, to offer to them the subsistence, and the comforts of civilized men, to win them to habits of regular industry, and to secure to them reserves of improving value, for the endowment of schools, and christian teachers,—may not colonization, conducted on these civilizing and christianizing principles, be extended without limit to other savage lands?'

"In these sentiments I most fully concur, as I am sure you do; for they are sentiments in which every friend to humanity must concur, and which must find an echo in every well-regulated and christian mind.

"The system hitherto adopted in the immediate neighbourhood of this province towards the native population is one at which humanity shudders. It has been so well and so truly described in the report, from which I have just read a passage, that I cannot resist quoting from it another paragraph.

"It is a melancholy fact, which admits of no disguise, and which cannot be too deeply deplored, that the native tribes of Australia, have hitherto been exposed to injustice and cruelty in their intercourse with Europeans.

"Squatters, runaway convicts, and deserters, employed in the fisheries, have long infested the coasts of New Holland, and have dealt with the aborigines as if they regarded them not as members of the human family, but as inferior animals created for their use.'

"This is a melancholy, but I fear too true a picture, of the manner in which the aboriginal inhabitants have hitherto been treated on this coast. And, when such is the treatment which they have experienced at the hands of Europeans, when such is the example set them, by those who call them themselves civilized, is it to be wondered at, that they have occasionally broken out into acts of violence, or retaliated upon their oppressors with the indiscriminating vengeance of the savage?

"But such is not the system which will be adopted towards them here,

where I trust, under Providence, that a new era is about to dawn for them. They have been declared British subjects; as such they are entitled to the full protection of British law, and that protection, while I have the honour of filling the situation which His Majesty has been pleased to confer upon me, shall be fully and effectually afforded them. I will go further, and say, that any aggression upon the natives, or any infringement on their rights, shall be visited by greater severity of punishment than would be, in similar offences, committed upon white men.

* * * *

“The prisoner, James Burt, is charged with a riot and rescue, originating in the following manner:—the prisoner, who is a sailor, was seen on the 22nd of March in a state of intoxication, patting one of those poor natives on the back with one hand, while with the other he held a bottle containing rum or some other spirituous liquor to his mouth, and encouraged him to follow his example.

The advocate-general (Mr. Mann) passing by at the time, seeing what was going forward, and being very properly desirous to check this improper conduct, and protect the native from this attempt of the prisoner to debase him to his own level, approached the prisoner, and in mild terms requested him to desist. He, however, received much abuse, and was threatened with personal violence by the prisoner, who called several of his companions around him, and by them the riot, rescue, and escape, which are charged in the indictment, were effected. I have before had occasion to remark, that much of the demoralization which prevails here among the working classes, is attributable to the sailors of the different ships, who on coming on shore are invariably seen devoting themselves to drunkenness and debauchery, and by their example corrupting the well-disposed and industrious part of the population. If the effects of this pernicious example were confined to their own countrymen, it would not be so much to be lamented as when, as in the present case, they endeavour to do such serious injury to the hitherto uncontaminated natives.

“I have already said, that one of the great objects which every well-wisher to this colony must have at heart, is to promote the civilization of the aboriginal tribes. It is a course which we are bound to adopt by every motive of religion, of humanity, of good feeling, and I will add, of good policy. I have already adverted to the mode in which, in the neighbourhood of this province, the natives have been treated; and I have said that I do not wonder that they have occasionally retaliated upon their oppressors, or what is the same to them, on the countrymen of their oppressors, who may probably have done them no injury. It is only within the last few days, that we have heard of the sacrifice of two valuable lives at Port Philip,* to the blind fury of the natives; and, I believe there would be no difficulty in tracing this lamentable event to the previous ill-conduct pursued towards them, on the part of the white men—not of their victims, who were two most respectable gentlemen, whose loss will be long felt by their families, their friends, and the public, but of a class of men similar to those lawless and abandoned characters, so forcibly described in the report from which I have already quoted. For our own sakes, therefore, if we should be in-

* See directions for entering this port in our last number, by Captain Hobson, R.N., of H.M.S. Rattlesnake.

duced by no higher motives, ought we to be guarded in our conduct towards the native population. In our intercourse with them, we should scrupulously avoid giving them offence ; we should respect their property, which, however trifling it may be, in our eyes, is of importance to them ; and, by setting them a good example in this, reclaim them from any propensities which they are said to have ; although I believe in the quiet and inoffensive natives, who have hitherto been induced to visit us, no such propensities have been found to exist ; but on the contrary, a kindness of disposition, and a willingness even to work for the food we give them, which may in the end be turned to beneficial account, both in attaching them to us, and enabling us through their instrumentality, to cultivate amicable relations with the neighbouring tribes.

“ I have been led into these observations, which I fear have extended to too great a length from the deep interest which I take personally in the fate of these poor people.

“ While holding in another colony a similar office to that which I now fill, I had an opportunity of observing the character, and disposition of a somewhat similar race of people, I mean the natives of the coast of Africa, and my acquaintance with them has convinced me that, those who imagine that difference of colour presents an insurmountable obstacle to civilization, are widely mistaken.

“ I have known natives of that coast, to all outward appearance similar to the aborigines of this province, within a short period after they had been rescued from slavery, exhibit traces of intelligence, not inferior, I will venture to say, to that which would have been exhibited under similar circumstances, even by Europeans ; and after they had been some time domesticated among us, I have known them to acquire property, and to perform the duties of life in a praiseworthy and exemplary manner. Is it not worth while, then, to make a similar experiment with the natives of this province, and instead of teaching them our vices, and rendering them more debased than we found them, by our example, is it not our duty to try every means of leading them into the paths of civilization and virtue ? May we not, by such a course, while we advance even our temporal interests, hope to bring down a blessing from the great Father of the human family, who has placed us amongst them, and given us to enjoy the land, which is their birthright, no doubt for his own wise purposes, and it may be hoped, with a view to their ultimate conversion to his holy religion.

MERCHANT SEAMAN'S SOCIETY.—Mr. Editor,—A British ship-master desires, in your last number, to be informed on the subject of the Merchant Seaman's Society ; the office of this institution, is in the gallery over the Royal Exchange ; I mention this, to prevent its being mistaken for another and a better establishment, which bears nearly a similar title. The governors of the Merchant Seaman's Society, are self-elected ; and, until lately, no account of their proceedings was ever suffered to transpire, but by the act of parliament, which in 1834 or 1835 gave them the power to make a further levy upon merchant seamen, they were required to publish a statement of their cash-receipts and disbursements yearly ; this has been complied with, but

not satisfactorily to those most interested—the seamen who pay. It is impossible to learn from any of those relieved, who may casually come in one's way, what amount of advantage may be expected from a fund made up by the licenced sequestration of part of the seaman's earnings; any statement touching this part of the question, must therefore be avoided, as without an official document to refer to, and I believe there is no such thing to be met with in circulation, anything advanced upon this head must of course be grounded in conjecture.

As to the sum your correspondent supposes to be collected by the Seaman's Society, he is in error; the following may be found nearer the truth:—

The yearly amount of receipts is about £44,000, 12 or £13,000 of this is collected in London, the rest is paid at the various out-ports, and applied in the several localities: thus, the Seaman's Society receive of the whole amount, say, £12,500, less five per cent.; which deduction, by a clause Lord Auckland introduced in the Merchant Seaman's Bill, is payable to the Seaman's Hospital.

The Seaman's Society is considered by its governors as a charity; yet no pains have been taken to make it known, as an institution open to charitable subscription, and few donations have in consequence been presented to it: for this, no one can feel regret, as seamen are of opinion that they should be better provided for as members of a common benefit society, as are the seamen of the north: inquiry will prove how deeply this opinion is rooted.

It is, perhaps, worth while to remark, that the certificate required of an applicant for assistance at this charity, (they call it a charity,) is so inconsistently difficult that few can, from the absence of owners, masters, or mates, collect all the warrantry required to prove their eligibility, although they be sailors, entitled and every way deserving to receive relief, which they lose, giving up the task of conformance in despair. It is a great pity that Lord Auckland did not notice this, when he had the Merchant Seaman's Bill before him in the House of Lords.

As to the method of conducting the general business of the Merchant Seaman's Society, nothing was communicated; reporters not being admitted even at the general annual meetings. I think the editor of the Shipping Gazette complained of this last year.

Touching another part of your correspondent's letter, I would advise him, if he be resident near London, to go down to Well-street, and inspect the building fitted up there as a sailor's boarding house; from the spirited interest which his letters indicate he takes in the subjects they treat upon, I can predict that he will be surprised and pleased with the advantages that establishment offers to men inclined to pass their time on shore soberly and steadily.

He will be convinced, that so long as there is a cabin unoccupied in Well-street house, no sailor has a right to assert, that he lives in filth and dissipation, because he can find no abode that offers cleanliness and regularity; neither can it be pleaded that the expense restricts the choice.

I am, Sir, your obedient servant,

H. Y. Z.

SEAMEN WRECKED IN THE EASTERN SEAS.—Mr. Editor,—The prominent part which your journal has taken in advocating the interests

of our seamen, has induced me to submit to you the following case of suffering and hardship on one of the remote islands of the eastern seas, as it will tend to show the necessity that exists for some understanding among European governments, as to rescuing seamen who may be cast away in the neighbourhood of their settlements; for it appears that the impulses of humanity are sometimes not sufficiently strong. In the year 1825, the Dutch colonial brig of war, *Dourga*, Lieut. Kolff, visited Timor Laut, where the commander learned, that an English brig, which, from various circumstances, appears to have been his Majesty's colonial vessel *Lady Nelson*, had been cut off the previous year by the natives of Luora, a village on the east side of Timor Laut, and that the crew had been murdered, with the exception of two youths, who were then living among the natives. In 1826, the *Dourga*, again visited Timor Laut; and although she remained there three weeks each time, during which, distant excursions down the west coast of the island were performed in the boats, no attempt was made to visit Luora, and rescue these poor boys. The chiefs of some of the villages were apparently requested by Lieut. Kolff, to obtain them and forward them to Banda; yet as the chiefs do not possess control beyond their respective districts, no success could reasonably be hoped for through their interference. Reports of the proceedings of the *Dourga*, were submitted to the Dutch government by Lieut. Kolff, and a narrative of the voyages of that vessel, from which I have obtained my information, was published in Amsterdam, in 1828. I therefore entertained no doubt that the government of Banda, which island is only 200 miles distant from Timor Laut, had subsequently redeemed these youths from captivity; but I find from Captain King's pamphlet on the wreck of the *Charles Eaton*, that ten years after the visit of the *Dourga* to Timor Laut, one of our countrymen still existed among the natives of Luora; the other having died there during the interval. Should the survivor be still among the living, he will have been more than thirteen years on the island; a sufficient time to render him as barbarous as the natives to whom he has been abandoned.

It is certainly an invidious task to expose the failings of our neighbours, yet I cannot refrain from giving another case in connexion with the voyages of the *Dourga*; and I trust for the sake of humanity, that similar ones do not often occur. In the year 1825, two English seamen, who had been wrecked on the coast of New Guinea, and after having been detained some time, had been redeemed and taken to Banda, by the chief of Kissa, were put on board the *Dourga* as seamen. One of these men died soon after, owing, as Lieut. Kolff states, to the hardships he had endured during his captivity among the natives. Surely, if this was the case, he would have been a fitter inmate for an hospital than for a Dutch brig of war; and if found to be a burthen, should at least have been forwarded to his own country.

The cases above detailed, are not, Mr. Editor, given from report, but from an account of the proceedings of the *Dourga*, published by the commander himself.

I have the honour to be, Sir,
Your most obedient Servant,

SINBAD.

Hampstead, Nov. 21st. 1837.

THE MONARCH AND APOLLO.—It is with much satisfaction that we are enabled to quote the following letter which appeared in an Edinburgh paper, from the pen of Admiral Milne, on the recent collision of these two vessels. The opinion of the Admiral will be found to coincide with that which we expressed on this unfortunate occasion.

On the subject of the recent collision between the *Monarch* and *Apollo* Steamers, from Vice Admiral Sir David Milne, K.C.B., to Mr. Hamilton, manager for the Steam Navigation Company, in Edinburgh.

Coldstream, Nov. 18th.

MY DEAR Sir,—I have just seen in the *Nautical Magazine* an account of the unfortunate accident of the *Monarch* and *Apollo*. From having formerly been long a partner in the London and Edinburgh Steam Packet Company, I still feel an interest in their concerns, and being well acquainted with the liberality and attention of the company in fitting up those vessels, and also their care in the choice of the captains who command them, it is with the deepest regret I have read the verdict of the jury on the late melancholy occasion. Knowing as I do the character of Captain Bain, (than whom no man could be more fit to command one of the company's vessels,) his long experience as a pilot, his being a perfect seaman, a man of the strongest nerve, and the strictest attention to his duty, night and day; I am fully persuaded no blame could be attached to him. He was at the time on the paddle box, the best place for a look out; and the *Monarch* had lights hoisted, which the *Apollo* does not appear to have had; and the latter was supposed to be a vessel at anchor. But allowing both vessels to have had lights, a collision of this kind might have taken place without blame to either party. Every seaman knows how difficult it is, in a narrow channel with rapid tides, where there are eddies, and both vessels at the time rounding a point—how difficult it is to act at the moment in hazy weather. With the greatest skill, and every attention in both vessels, where so many other vessels are proceeding up and down a river or at anchor, I repeat again what every seaman knows, that a collision of this kind might happen without either party being to blame. It is to be sincerely regretted that the jury summoned had not one seaman amongst them; as it was impossible that such a jury could judge of the accident.

I am sure if a new trial be allowed, and the opinion of pilots and seamen taken, the verdict of the coroner's jury will be set aside, and it may probably be found, that the collision was accidental and not to be avoided.

In giving my opinion on this matter, I do so only on account of the anxiety it must have given to yourself, who have so long been, I may say, the principal manager of the steam company; and, also, on account of the heavy loss to your owners.

A good many years ago, I gave some memoranda to Sir William Rae, then Lord Advocate, who meant to bring in a bill regarding steam vessels. Among other things I recommended that all steam vessels should in the night, carry lights; two on the starboard bow, one on the larboard bow, and one at the mast head; that all steam vessels meeting should pass on the side where two lights are shown, and that sailing vessels might observe the same regulations when meeting steam

vessels. If these regulations were adopted, such accidents as that referred to could scarcely occur. I would strongly recommend this to your company, and to make it generally known.

Believe me, &c., &c.,

DAVID MILNE.

ANNULAR SCUPPERS.—Commander Henry Downes, R.N., has invented a new scupper for ships' decks, which he terms annular. It consists of two distinct copper rings; one of which, an inch wide and half an inch thick, is screwed down into the deck, and bedded in pitch or white lead; the other, which is of the same width and thickness, is made so as to fit into the former, and resting on the upper edge of it, reduces the aperture of the scupper one half. Thus the scupper is capable of being enlarged or reduced at pleasure by merely shipping or unshipping the inner ring. The attention of Captain Downes has been turned to this subject, from witnessing the inconvenience from decks being flooded during rains and bad weather, when the common scupper has been insufficient to allow the water running off quickly. A model of this invention is deposited in the United Service Museum.

BRITANNIA.

Epsom, Nov. 6, 1837.

MR. EDITOR,—In the October number of your valuable Magazine, I find a letter signed "An Old Ship Master," intimating that the suggestions contained in "Britannia," for the improvement of sailors were derived from a previous publication, by Captain H. M. Marshall, R.N., and that I ought, therefore, to have acknowledged my obligations to that work; that is, "if I had ever seen it." Now this saving clause is a very important part of your correspondent's letter; for it so happens that, neither in whole, nor in part, have I even seen the publication in question. Had it fortunately come into my hands while preparing the Prize Essay, I should probably have turned it to some account; in which case I should have avowed my obligation; not only as a matter of course, and of duty, but also for the purpose of giving weight to my statements, and force to my appeals. For, from what I have heard of Captain Marshall, his mere assertions in relation to the subject before me, would deserve greater attention than some men's arguments. Would that, for the sake of sailors, he could multiply himself a hundredfold.

I will only add, that if my suggestions for the improvement of our neglected sailors, conceived as they were in perfect ignorance and independence of Captain Marshall's, coincide with them so remarkably as your correspondent represents, the coincidence by increasing the probability that our suggestions are founded in propriety, increases their claim on the public regard.

Your insertion of the above will oblige, dear Sir,

Your's respectfully,

JOHN HARRIS.

GOVERNOR (GOVERNEUR) ROCK, OFF DONAGHADEE.—The following position of this rock, which has not yet appeared in the charts, has been transmitted to the Admiralty, by Captain Beechey, commanding H.M.S. African:—

Compass bearings from the rock, on which the least water is ten feet, viz:—

Lighthouse on Donaghadee Pier	S. by W. $\frac{1}{2}$ W.
Magazine at Donaghadee	S. W. $\frac{1}{2}$ S.
Foreland Buoy (which should be placed on the rock)	N. W. 550 feet.
Deputy Buoy	E. by N. $\frac{1}{2}$ N.

ROYAL GEOGRAPHICAL SOCIETY.—Nov. 27, W. R. Hamilton, Esq., President, in the Chair. On the study of Geography in Switzerland, by Professor Chaix, of Geneva.—Captain Alexander's account of his expedition to Walwisch Bay, stating his return to the Cape on the 21st September.—Captain Burns' examination of the Indus as far as Attok on his way to Cabul.—In the course of this evening the gold medal of the Geographical Society of Paris, was presented to Capt. Back. The President in presenting the medal, alluded to the important discoveries of Capt. Back, in his search after Sir John Ross, for which the medal was awarded; he also alluded in highly flattering terms to the masterly retreat made by Captain Back from his late perilous expedition, in furtherance of those discoveries, and congratulated him on his safe return from a voyage of so much danger, privation, and suffering, in which he had put the seal to another triumph of order, discipline, and obedience, when under the guidance of skill and experience. Captain Back returned thanks, and spoke in glowing terms of the perilous condition of his ship, which suffered so much from the ponderous pieces of ice forced against her by the violence of the current, as to have been nearly overwhelmed,—a fate only arrested by the invisible hand of Providence. An animated discussion went forward on the current alluded to.

Dec. 11th.—W. B. Hamilton, Esq., President, in the Chair. On the soil and natives of Port Philip, South Australia, by Captain Maconochie, R.N.—Extract of a letter from the chief justice, Sir John Jeffcott, to Mr. Barrow.—Extracts from the Journal of the Brig Rapid.—On the political geography, and geographical nomenclature of Australia, by Captain Vetch, R.E., which produced a very animated discussion on the subject.

METEOROLOGICAL SOCIETY.—Dec. 12, 1837, Dr. Lee, F.R.S. F.R.A.S., &c., in the chair. At this meeting several very interesting papers were read in explanation of the electrical phenomenon which displayed so great a profusion of red, white, and rosy coloured hues, on the night of Sunday, Nov. 12th, last, from Poole, Worcester, London, Manchester, &c., but in none of these localities appeared a suf-

ficient number of meteors to constitute a recurrence of the "meteoric shower," which has been seen with so much interest for several years past on the 12th and 13th of November. Indeed clouds tervened in all the above places about the time the meteors were expected to appear, namely, about midnight on the 12th.

The occurrence of the "meteoric shower" in the United States, has been witnessed with the interest and splendour of former years. Professor Olmsted states that the meteors began to appear about five minutes before one, A.M. of the 13th, and that the maximum was attained between three and four. The total number of meteors noticed being 226.

After the reading of these papers, a new and beautiful instrument was submitted to the Society for inspection, by the inventor, R. C. Woods, Esq., 47, Hatton Garden, (who has been appointed meteorological instrument maker to the Meteorological Society.) This instrument which has been a desideratum among Meteorologists, and the appearance of which will, no doubt, insure its adoption, by men of practical science, is the *Self-Registering Barometer*. The great simplicity of its construction, without additional expense beyond that of ordinary barometers in the getting of it up, has claims upon the Meteorologist beyond that of any other meteorological instrument at present known.

Mr. Woods also exhibited his improved safety *Mountain and Marine Barometers*, elegantly mounted in *bronze cases*, which are calculated to obviate the difficulties attendant on those instruments which are fitted up in *wood cases*: these invariably split on arriving at about 40° of latitude, which generally destroys the tube, and not only thus renders the instrument useless, but too frequently is the cause of the loss of much valuable property and what is of infinitely more consequence, many human lives!

Mr. Woods also exhibited his *Double Registering Thermometer*, and his improved *Atmospheric Thermometer*, both of which instruments will be found exceedingly useful in registering accurately the most minute variations of temperature. Lieut. Morrison's *Magnet Electrometer* was also exhibited, with copious observations made during five successive days in the month

of August last. This instrument may be turned to good account in meteorology, by a careful, diligent, and clever meteorologist.

Engravings, and descriptions of all the

above instruments will be given in the Society's transactions,* which will appear during the present session.

The meeting adjourned till Tuesday, January 9th, 1838.

PRESENTATION OF PLATE.—A splendid piece of plate has been presented to Lieut. Tudor, of the royal navy, by the Levant Company, as a testimonial to his merits during the period of his service in their employ. It consists of a handsome silver vase, cover, and stand, richly chased. The handles of the vase represent oak branches tending upwards, and encircling the brim with richly-chased leaves and acorns. The cover and stand are equally rich. The following is the inscription: presented to John Tudor, Esq., R.N., by the Levant Steam Company, as a testimonial of their high personal esteem, and an acknowledgment of his eminent services in connexion with their boat, the Crescent, which he superintended during her whole construction, and commanded till her complete establishment on her station. On the reverse—the keel of the Crescent was laid in December, 1834, and although she experienced considerable delay in building, she had, in December, 1835, completed at sea twelve thousand miles, having made the quickest steam-voyage that had ever been performed.

GREATEST SPEED ON RECORD.—The President's message was run from Washington to Boston (500 miles) in twenty four hours! It was taken a quarter before midnight from this city by the splendid new steamer, *Wasp*, Capt. Vanderbilt, to New Haven, thence by express to Worcester, thence by railroad to Boston. The *Wasp* was detained one hour in the Sound, by an accident to her machinery. That vessel went the first 12 miles from New York in thirty minutes!—*New York Evening Star*.

Law Proceedings.

THE MARIA SALVAGE.—Vessel 234 tons, crew eleven; from the Levant to Hull, cargo, bones; got on Cross Sand, off Yarmouth, 10th February; Royal Sovereign and Red Rover yawls proceeded to assistance; wind hard from S.S.W., sea heavy. Red Rover reached Maria first, got her off before Royal Sovereign arrived; latter assisted in towing her to Yarmouth. Vessel sent to quarantine, salvors on board, and detained thirty-seven days. Owners tendered 300*l.*; refused; value of ship and cargo 2,445*l.* Sir John Nichol decided there had been considerable merit on part of salvors; readiness in launching vessel, incurring risk, and remaining on board a vessel which might have had plague; the tender not one-seventh. He was bound to add 150*l.*;

making award 450*l.*, with costs.—(*Admiralty Court, 3rd July.*)

THE COMMERCIAINT Salvage.—290 tons. Cargo timber. Bound to Honfleur. Tempestuous weather. Got on Kentish Knock; able to get off by exertions of her own crew. Waterlogged and in want of repair; master bargained with a laden brig to tow him to Yarmouth. Salvors come in an Alborough yawl, are employed in preference, and convey the vessel to Harwich by wish of master. Appraised value of ship and cargo 2,213*l.* Sir John Nicholl awarded 150*l.* as salvage. Owners to pay cost.—(*Admiralty Court.*)

THE MARGARET, STEAM VESSEL. *Salvage.*—Waterford to London. Passengers. Got on Burling reef, off Beachey head.

* Meteorological works, intended for review, in the Society's transactions, to be forwarded to the Secretary free of expence, before the 1st of March next. Communications for this Society may be addressed to W. H. White, Hon. Secretary, 38, Britannia-street, City Road, where every information relating to membership, &c., may be obtained.

Lieut. Smith fired a gun to warn her of danger before she struck. Being ill, sent his boat to her assistance, she having burnt blue lights. Vessel got off. A sovereign given to boats' crew for their assistance. No tender made. Vessel and cargo worth 20,000*l.* Sir John Nicholl decided salvage of slight description. But property large, and having passengers, such vessels should pay liberally. Duty of court to enforce this principle. Directed 100*l.* and expenses of proceedings to be paid to Lieut. Smith.—*Admiralty Court.*

THE MEO MERRILLIES.—*Salvage.*—Liverpool to Africa.—Sailed 30th Sept., 1836. Bad weather. Injured. Dismasted. Fallen in with, on 4th October, off Land's End, by St. Patrick, steamer, from Waterford to London, with full cargo of passengers and live stock. Brig had signal of distress and was making water. St. Patrick made for her. Heavy sea; great difficulty got a warp on board; towed her into Catwater, Plymouth. Brig worth 9,500*l.* Reward claimed. Owners of brig contended towage only had been performed and consented to pay for it. Sir John Nichol awarded to the salvors, 750*l.* with costs.—(*Admiralty Court.*)

THE CAROLUS.—*Collision.*—A Hanoverian vessel, and Susan, an English vessel coming up the river Thames, on opposite tacks, in Long Reach, came in collision. Susan was sunk. Carolus contended accident occasioned by want of skill in Susan. Proved by two Trinity-House masters that Carolus was in error and her pilot liable to be sued on his bond. Sir John Nichol decided for claim of Susan to amount of damage. (*Admiralty Court.*)

THE DANTZIC PACKET.—*Salvage.*—A Prussian brig (239 tons.) Dantzic to London. Cargo flour, corn and provisions. Forced into Sheerness by weather. Engaged a steamer to tow her to Gravesend. Sailed on 7th January; soon after, boiler burst in sea reach. Wind freshened. Brig forced on West Knock sand; struck heavily. Signals made, and seven small Essex boats (salvors) from Southend went to her. Brig had eleven feet water in hold. Unable to get her off. Meantime, Prussian Consul at Sheerness sent another steamer to assist; salvors of Essex boats refused to allow her to interfere. At length steamer applied her power, got brig off and took her to Sheerness. Value of brig and cargo 3,000*l.* Contended on one side, Essex boats real salvors—on the other, a claim not denied for their labour,

their misconduct in obstructing steamer should reduce it, and she was the only salvor. Sir John Nichol decided, vessel had been in very perilous situation; although services of Essex even had been unsuccessful, they would have been entitled to liberal reward for services, though unattended with risk and little more than work or labour. In obstructing steamer and endeavouring to supersede authority of her master and pilot, the vessel not being derelict or abandoned by crew, were guilty of misconduct and incurred strongest disapprobation of court. Not necessary, as was supposed, for salvors to stick by a vessel in order to retain claim for services. Steam vessel in this case was employed by authority of master, who had a right to employ whom he pleased; the salvors were intruders, and had violated the law. Under all circumstances, and considering policy of encouraging such services as salvors had rendered, he awards 30*l.* to barge Eliza, as she had conveyed part of cargo to London, and had no participation in subsequent transaction, and 100*l.* among the rest.—(*Admiralty Court.*)

THE VICTORY.—*Collision.*—A schooner, sailed from Cork; 28th October, 1836, fell in with the William off Welch coast. Crew of latter drunk. William changed her course and run foul of Victory, leaving her figure-head in Victory amidships. Crew of latter had to abandon her and she was afterwards reported on shore at Port Reef in Cornwall. Crew of Victory when board William, found captain drunk, and mate *not sober!* Endeavoured to keep up Victory, but she sunk during night. Verdict of jury, damages 250*l.* and costs. *Admiralty Court.*

THE MAGNUS.—*Wages.*—Two seamen, Kelly and Smith, discharged in London, had signed articles at New Brunswick, by which they were to receive 12*l.* for the run to London. They stated that they were taken on a sledge, while insensibly drunk, from the house of a crimp named Fry, a sailors' boarding house keeper, at St. John's, and put on board the ship; and captain had not paid them a farthing. Kelly stated that recovering from his drunkenness, he demanded the 12*l.*, and refusing to do any duty, the captain beat him. His fingers were frostbitten, in consequence mortified, and three since amputated in London. Captain stated, that according to custom of the country, he had paid the wages to the crimp. Magistrate considered custom not binding on the men, and unless they had authorized it he must

pay their wages with costs. It was finally considered that Kelly had given Foy authority to receive his wages, and the other had not. Payment of 12*l.* to him ordered, and costs. *Admiralty Court, March, 1836.*

THE SUFFOLK—Refusal of Duty.—Five seamen charged with refusing to proceed to sea, after signing articles. They were to receive wages, varying from 2*l.* 10*s.* to 3*l.* 10*s.* per month, and received advance notes, cashed by a Jew slopseller, who gave them money and clothes on credit. Excuse alleged; they had been cheated by the Jew and were without sufficient clothing. Charges of slopseller examined, and reported fair. Magistrate decided that they had committed a gross fraud on the captain, and sentenced to twenty days' hard labour in Brixton gaol. *Admiralty Court, April.*

THE HERSEY.—*Bottomry.*—A suit against owners of Hersey, to enforce payment of a bottomry bond, granted by the master, at Van Dieman's Land, in November, 1835, for 470*l.*, bearing 20 per cent.

interest. Resisted by owners on ground of no necessity for hypothecating vessel, master not being without funds or credit; money not advanced on lien of the ship, and bond extorted from master on point of sailing. Sir John Nicholl pronounced against its validity; he said, necessity was only plea, on which law allowed masters to pledge property of his owners by hypothecating ship and freight. Lord Stowell says, "Necessity is the vital principle of hypothecation." In this case no necessity appeared. Owners known at Hobart-town, master known, ship carried her own credit, had owners' property on board. Evidence of accounts between master and owners adjusted, and balance paid to latter. Bond extorted apparently for sake of a more convenient remittance to England, with 20 per cent. interest. The application for payment of the bond rejected, and the appearance of contrivance and management in the master, and owners being put to so much expense in resisting claim, they were entitled to their costs. (*Admiralty Court, Nov. 27.*)

Records of Wrecks.

[The numbers refer to the names in the tables.]

THE CORNWALLIS. No. 3. Friday morning, 30th Dec., mate sent up Bourka Bay to seek harbour, wood and water; returned successful, reported natives friendly—Capt. Doggett of Mechanic on board,—resolved to enter harbour,—day-break following mates sound harbour,—natives surround boats in canoes,—sunset, returned on board,—next day (Sunday) anchored in Deceitful Bay; ship Mechanic followed,—canoes surround both vessels. Next morning casks sent on shore for water, and party of New Zealanders to cut wood,—natives friendly,—five tons of water got on board,—Tuesday, casks and wooding party sent on shore,—natives more numerous,—next day same process, natives found armed with bows and arrows,—surprised by 200 natives, seized axes, wounded New Zealanders who run into sea and swim away. Boat armed sent to assistance,—fired at natives who retreat into the bush,—boat conveys wounded New Zealanders on board Mechanic, and proceeds to assist watering party attacked by natives,—by arrows and stones natives in possession of casks,—second mate received some arrows,—carpenter injured in head by stone,—escaped on board Mechanic, no loss of life,—many natives supposed kill-

ed by firing from both vessels. Both vessels under way,—light breeze westerly,—seven P.M. wind shifted to N.E., heavy squall,—vessels aback,—half a mile from breakers,—heavy swell,—strong tide,—topsail sheets carried away. Brig struck on ledge of reef,—no probability of saving anything,—boats cleared away,—starboard quarter boat stove,—larboard waist boat left brig on her striking with four New Zealanders for Mechanic. Seventeen were left on board wreck with one boat,—about ten got on board Mechanic; she had barely escaped reef, night passed in beating out of harbour,—next morning four boats sent to wreck,—only a few planks of her seen.

CALEDONIA. No. 1. Brig from Quebec,—30th Oct. became waterlogged,—31st lost rudder and capsized,—lost one seaman and an apprentice,—cut away the masts,—provisions all washed away,—hunger,—starvation,—subsisted on dead companions,—five died,—9th Nov. Russian ship Wartrue from Archangel for Bristol, fell in with and rescued Captain Coke, mate, carpenter, second mate, and an apprentice; landed them at Bristol,—great credit due to mate (Dyden) of Russian ship.

Echo, No. 4, of Plymouth. 11th Nov.

A.M. St. Heliers, Jersey, in alarm and anxiety from signals of distress at Fort Regent. Echo discovered,—had struck on sunken rock at back of castle,—too late previous evening for Small's roads—preparations for anchoring,—accident with anchor,—Rodiere rock ahead,—vessel luffed to instead of bearing away,—struck,—vessel sinking,—passengers (7) took to rigging, one a woman, child in her arms,—no time to save another left below, sleep, (of death,)—captain clearing punt,—in two minutes vessel sunk with all on board,—some got into punt,—picking up the rest,—punt too small, filled and sunk,—all again in the water,—prompt assistance of Captain Joyce of Napoleon, and boats from shore saved all but two children,—mother senseless and dangerously ill,—captain and some of crew ill,—body of one child found.

ISABELLA, No. 17. Waterlogged 19th Oct. Lat. 46° 29' N., long. 58° 9' W. Fallen in with by the Ethelbert—master, carpenter, and two boys rescued,—rest of crew taken by Sappho to Newfoundland.

ISABELLA, No. 18. Bruce, 23rd Nov. going into Tay struck on Abertay Sands,—lost rudder,—flood tide,—drove off,—unmanageable,—boat from North Ferry reached her,—vessel leaky,—sunk on Gaa Sands,—one drowned by boat swamping,—vessel new,—just built at Perth.

INDIAN CHIEF, No. 10, 15th Nov. four A.M. struck on Blackwater bank,—crew abandoned vessel,—fourteen feet water in hold,—about ten A.M. drifted off,—at four P.M. sunk two leagues S.E. of Arklow. Light vessel,—several boats put off,—one lost with her,—boats' crew (six) perished,—cargo value 80,000*l*.

EMERALD, No. 8, 21st. Sept. sprung a leak in Gulf of Florida,—five feet water in hold,—blowing hard,—heavy sea,—haulked in for land,—ship sinking,—reached coast,—ship sunk in 4½ fathoms off St. Simon's lighthouse,—still blowing hard,—captain and crew landed on I. St. Simon and Jekyl,—weather-bound till 25th,—captain to Brunswick (Georgia) for assistance,—26th sloop dispatched,—returned 28th,—vessel gone to pieces,—3,808 boxes of sugar insured in London.

ELVIRA, No. 7, 11th Nov. heavy weather,—dismasted between Orkney and Shetland,—sea swept decks, washed all crew overboard except one,—14th driven on shore at Noss,—went to pieces,—survivor saved.

KILLEGREW, No. 349,* schooner. Cargo wine from Cadiz,—28th Oct. a number of large casks of wine washed on shore in Marmise Bay, also vessel's stern marked Killegrew of Falmouth,—and part of boat,—Captain J. Noye, wife and daughter, and four men (crew) drowned,—body of wife found on beach.

THE LEDA, No. 19, off Boulogne, 2nd Nov. wind blowing a hurricane,—five A.M. Leda (190 tons) cargo wines 500 hogsheads, quicksilver 800 flasks, and pomegranates, driven on shore at Ambleteuse,—crew nine in number; three saved clinging to break of deck washed ashore. Captain, first and second mates, and three seamen drowned. Survivors state captain mistook Cape Grinez light for that of Dungeness, and laid vessel to,—on vessel striking anchors let go. At three P.M. no vestige of her remained,—great praise due to French fishermen.

THE TIGER, No. 32, left Liverpool 1st May, 1836, for Bombay. Cape 11th July. Tigris in company,—Tigris parted. 5th August Captain Searight taken ill,—delirium,—evaded look out,—cry of "Captain overboard,"—boat instantly,—too late,—captain sunk,—boat swamped and lost. Command devolves on mate,—wrong reckoning,—days of anxiety,—fearful suspicions for safety of ship. 12th August, A.M., struck on reef off Astova Island, N.W. of Cape Amber,—all hands (26) landed from long boat and jolly boat. No inhabitants,—coral rock, six miles long, four wide,—no vegetation. Signals, with canvass from wreck, fixed on various parts of island. Search for water, disappointed,—food, turtle,—great exposure, suffering, and anxiety. 15th September, long boat lengthened sails with fourteen of crew under command of mate for Mahe (Seychelles) to obtain assistance. Cask of spirits washed ashore from wreck,—found,—a spring of fresh water discovered. Days passed away,—no hope of rescue,—great suffering,—despair. 18th October, the Emma, South Sea whaler of London, Captain Goodman, providentially drifted out of her course,—discovered signals on island,—sent boat on shore,—sufferers delivered,—conveyed on board Emma,—landed at Mahe,—forwarded to Mauritius and Cape,—thence to England. Mate who left in long boat, said to have reached the eastern coast of Africa in safety. Wreck supposed to have taken place on Island Juan de Novo, proved to be on Astova.

THE FORTITUDE, No. 8, Brig of Newcastle. Cargo, coals and bottles,—all

lost. Captain, mate, and cabin boy drowned,—remainder amounting to eight, saved by the humanity of a Portuguese gentleman, M. Rocha Comeira, who paid ten moidores (11*l.*) to induce a boat's crew to go to their assistance.

THE ORELLIA, No. 29, 400 tons, of Plymouth. No possibility of heaving her off rocks,—totally damaged,—injury to hull caused her to be condemned,—no lives lost.

WRECKS OF BRITISH SHIPPING—CONTINUED FROM THE SHIPPING GAZETTE.

(Continued from Vol. I., page 818.)

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
Andromeda (St. V.)		Calcutta	Mauritius	Bay Bengal	25 July	Boat drowned.
Cornwallis				New Zealand	Dec.	
Calcutta	Coke	Quebec	Greenock	At Sea	9 Nov.	Crew saved.
Commerca	Slater	Peterburgh	London	Lessee	25 Oct.	Crew saved.
5 Echo	Edmond	Plymouth	London	Off Jersey	11 Nov.	Five died.
Edward	Of Scarbro	Newcastle	London	Norfolk C.	13 Nov.	Crew saved.
Elizabeth	Of Scarbro	Newcastle	London	Waterlogged	13 Nov.	Crew saved by Everton 2 Nov.
Elvira	Of Halifax	Hamburg	Jamaica	Fitful Head	14 Nov.	One saved.
Emerald		Havana	London	London	21 Sept.	Crew saved.
10 Fortitude	H. Lamb	Newcastle		Aveiro	17 Nov.	Three drowned.
Gage	Newhaven	Not named		Off Barbadoe	7 Nov.	Run down.
George Henry		Jamaica	Canada	Caryfort Reef	7 Sept.	Cargo saved.
Greenock	White	Quebec	Hull	Inlstrahl	23 Nov.	
Harmony						
15 Industry	Dickson	Montego Bay	Quebec	Florida	8 Sept.	Crew saved.
Indian Chief	McDonald	Liverpool	Mauritius	Rush Bay	18 Nov.	Sunk in twenty-five feet.
Isabella	Eden	Quebec	Newcastle	At Sea	19 Oct.	Crew saved.
Isabella Forbes	Beane	Bertram	Perth	Abertiam	20 Oct.	One drowned.
Isabella	Auld	Pictou	Greenock	Canas G.	30 Sept.	Crew saved.
20 Isabella	Hart	V. D. Land	S. Australia	Cape Nelson	20 Sept.	Previous to 23 June crew sav.
Jane Amanda	Campbell			St. Osprey Bay	Oct.	Australia.
Jane	Of Portaferry			Dundrum Bay	23 Nov.	Crew saved.
Judith	Drew			Lowestofts	14 Nov.	Crew saved.
Killgrew	L. Noye	Cardis	Limerick	Off Blane Head	26 Nov.	Crew saved.
Leda	Watson	Cardis	London	Off Bologna	2 Nov.	
25 Mail		Greenock	Trinidad	Whiting Bay	23 Nov.	Crew saved.
Maria Crowther	Dawes	Whitehaven	Dublin	Iale of Man	7 Nov.	Crew saved.
Means	Goodall	Cargo Coals		Calator	7 Dec.	Crew saved.
Minx	Morrison	St. Davids	Mareilles	Off Galloper	5 Nov.	Man down, crew saved.
30 Nancy (sl.)	Sloan	Liverpool	Lockbroom	L. Martin	23 Nov.	
Nautilus	Waller	Licata	Newcastle	Off C. Passro	14 Nov.	Abandoned.
New Orleans	Webber	Liverpool	Havana	Cuba	14 Nov.	Crew
Nile		Passengers arr.	at Barbados	81 degrees N.	24 Aug.	arr. at Havana 21 Oct.
Oregon	Of Fairhaven	Whaler	beating out of	Tahiti	4 May	Crew and oil saved.
26 Orella	Rowland	Quebec	Cork	Beerhaven	27 Nov.	Waterlogged.
Ranger	Byron	London	Quebec	Table Bay	25 Aug.	Crew saved.
Robert Thomas	Granby	Quebec	Liverpool	Waterford	1 Nov.	Crew saved.
Royal Oak	Worley	Carrickfergus	Liverpool	Blackpool	23 Nov.	Crew saved.
Royal William	Fraser	London	Madras	Cape Good Hope	19 Sept.	
40 Tiger	Searight	Liverpool	Bombay	Aston	10 Aug.	
Tortola				Blakeney	30 Nov.	
Zeelee	Steward	Liverpool	Manilla	Algoa Bay	16 A	Crew saved.

NEW BOOKS.

LOGARITHMIC AND TRIGONOMETRIC TABLES, to Seven Places of Decimals. London, Simpkin and Marshall.

This is a new (and we had all but said, portable) edition of Logarithms, being a reprint of Professor Hassler's, who has been for some time conducting the surveys of the coast of the United States. We approve of the arrangement generally, and the differences are conveniently arranged for minuteness and accuracy. The author points out several errors in the American edition, which he has avoided, and perfected his own labours, by a comparison with Babbage's, Bagay's, and Callett's tables.

THE NATURAL HISTORY OF THE BIRDS OF GREAT BRITAIN AND IRELAND.—Part I.—Birds of Prey, By Sir William Jardine Bart., &c. Highley, Fleet Street.

These interesting volumes continue as interesting as ever; and to our

countrymen, the present book comes with peculiar recommendation; that of describing the birds of their native land. The plates are executed in the usual good style, and accompanied with drawings of the eggs of the different species which they represent; a measure which we perceive is to be adopted in future. We have always considered these useful books as possessing great claims to the attention of our readers.

LETTERS TO BROTHER JOHN, ON LIFE, HEALTH, AND DISEASE—By *E. Johnson, Surgeon.* Saunders and Otley, London.

These Letters are reprinted, in the convenient form of a small octavo volume, from the "Metropolitan Magazine." Without pretence to medical science, we may safely assert, that they abound in good sound practical rules for the preserving that greatest of all blessings, good health. The style is familiar, and the technical expressions of the faculty avoided; so that a wholesome lesson may be learnt from them by any one. We would particularly point this book out to the attention of our nautical friends.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captains, Sir. J. E. Home, H. O. Love, Hon. H. Keppel. *Commanders*, G. W. Lydiard, Lord F. Russell, T. Coleman. *Lieutenants*, J. W. Conway, G. Kenyon, G. Western, R. J. Macluer, G. L. Adams. *Pursers*, W. H. Johnson, W. Laws, J. Mitchell.

APPOINTMENTS.

BOADICEA, Transport.—*Lieutenant*, W. Ward. BRITANNIA, 120.—*Purser*, E. O. S. Maley; *Assistant Surgeon*, A. Murray; *Mate*, J. H. Page, A. Kennedy, R. Curtia. BRITOMART, 10.—*Lieutenant Com.*, O. Stanley; *Sec. Master*, J. W. Burney. *Assistant Surgeon*, H. H. Hamond; *Clerk*, W. Lomer. CALLIOPE, 28.—*Lieutenant*, E. C. T. D'Eyncourt; *Surgeon*, J. Dunn. CASTOR, 36.—*Mate*, C. R. Marcnard. COAST GUARD.—*Lieutenants*, F. S. Thursby, W. Porter, P. Bisson. CONWAY, 28.—*Volunteer*, C. Shipley. ELECTRA, 18.—*Mates*, G. G. Phare, H. L. Parsons. *Assistant Surgeon*, R. D. Mason; *Clerk*, F. Cleeva. EXCELLENT.—*Purser*, J. Street. GREENWICH, Out pension.—*Lieutenant*, J. Tindale. HASLAR HOSPITAL.—*Assistant Surgeon*, A. Murray. IMOGENE, 28.—*Lieutenant*, G. E. Hamond. LYNX, 3.—*Lieutenant Com.* H. Broadhead; *Assistant Surgeon*, J. Little. MÆGERA, St. V.—*Lieutenant*, H. C. Goldsmith. MELVILLE, 74.—*Assistant Surgeon*, H. Harrison. MODESTE, 18.—*Commander*, H. Eyres; *Lieutenant*, G. Gore; *Master*, (act.) G. H. Skead; *Surgeon*, B. Mc. Avoy; *Assistant Surgeon*, D. Thomas; *Purser*, W. Pinhorn; *Midshipman*, F. C. Herbert; *Clerk*, N. Twiddell. PANTALOO, Tender.—*Mate*, R. L. Curtis; *Clerk*, J. Biggs. PINCHER, 5.—*Lieut. Com.*, B. J. Sullivan; *Clerk*, T. H. Snowell. PIQUE, 36.—*Lieutenant*, D. Curry. PRESIDENT, 52.—*Mates*, G. R. Woolridge, M. Falcon, R. Scott; *Chaplain*, A. H. Small. PRINCESS CHARLOTTE, 104.—*Lieutenant*, R. H. Bunbury. RACEHORSE, 18.—*Commander*, H. W. Crawford; *Lieutenant*, W. Webster, E. C. Smith, W. Johnstone; *Master*, (Act.) J. Jeffrey; *Surgeon*, J. Taylor; *Assistant Surgeon*, R. Mc. Gregor; *Purser*, J. Foster. ROYAL ADELAIDE, 104.—*Second Master*, R. S. Godden. ROYAL GEORGE YACHT.—*Captain*, Rt. Lord A. Fitz Clarence; *Lieutenant*, J. Mc. Donnell (for command of Pantaloon tender.) *Masters*, J. Oake, J. Saunders, (for Emerald,) G. Millard; *Surgeon*, J. Greenish; *Assistant Surgeon*, D. Mc. Nab, (for Pantaloon;) *Purser*, T. Goddard. SAMARANG, 28.—*Mate*, R. Curtis. SCOUT, 18.—*Volunteer*, 1st. class, A. Clifton. SAVAGE, 10.—*Mate*, G. Keith, E. Wright. SPEDDY, 8.—*Mate*, S. Maddock. SPARROWHAWK, 16.—*Mate*, R. Patey, TEMERAIRE, 104.—*Master's Assistant*; J. King. THUNDER, SURV. V., *Lieut. Com.* T. Smith, *Lieut. T. J.* Hill; *Surgeon*, J. G. Harrison; *Midshipman*, F. Bailey. THUNDERER, 84.—*Surgeon*, R. Mc. Cormick. TYNE, 28.—*Assistant Surgeon*, J. Allan; *Mates*, J. J. Dornford, J. B. Keat, R. Powell; *Midshipman*, W. P. Wray. VESTAL, 26, *Captain* T. W. Carter; *Lieutenant*, J. H. Norcock; *Mate*, S. J. Bayley; *Assistant Surgeon*, J. Acheson; *Second Master*, T. H. Loring. VICTORY, 104.—*Chap-*

John, J. Baker; *Master's Assistant*, W. Diaper, T. Walker; *Clerk*, G. Wallis. *VOLAGE*, 28. H. Smith; *Lieutenant*, A. Lowe, J. Gallway; *Master*, W. L. Brown; *Mate*, W. L. Brown. *WASP*, 16. *Midshipman*, W. Anson. *WELLESLEY*. *Vol. T. D. Fortescue*.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION TO 20th DECEMBER, 1837.

AT HOME.

African, 1, St. V., Captain W. Beechey, 4th Dec. at Holyhead. *Alligator*, 28, Captain Sir J. G. Bremer, C.B., Plymouth, fitting to proceed to Australia. *Belvidera*, 42, Captain C. B. Strong, 20th Nov. paid off at Portsmouth. *Britomart*, 10, Dec. 11th Commissioned at Plymouth, as a tender to the *Alligator*, by Lieut. Owen Stanley. *Columbia*, 2, 18th Nov. arrived at Plymouth from Spain, having landed troops at Cork. *Comet*, St. V., Lieut.-Com. G. Gordon, 4th Dec. arrived at Plymouth from Coast of Spain; 7th Dec. sailed for Portsmouth. *Edinburgh*, 74, Captain W. W. Hendersson, 20th Nov. remained at Cork; 28th sailed for Lisbon with troops. *Electra*, 18, Com. W. Preston, fitting at Portsmouth. *Excellent*, Captain T. Hastings, Portsmouth. *Hastings*, 74, Capt. H. Shiffner, 15th Dec. arrived at Portsmouth from Lisbon with Flag of V. Admiral Gage, ordered to Chatham to pay off. *Hyacinth*, 18, Com. W. Warren, 2nd Dec. left Spithead for E. Indies. *Jupiter*, 38, Mr. R. Easto, 20th Nov. remained at Cork; 28th sailed for Gibraltar with troops. *Mastiff*, Lieut. Mr. Thomas, Woolwich, refitting. *Messenger*, St. V., Mr. J. King, 21st Nov. arr. at Portsmouth from Jersey; 18th Dec. at Woolwich. *Modeste*, 18, Commissioned 25th Nov. at Woolwich, by Com. G. Eyres; see account of her launch; fitting. *Pincher*, 5, Commissioned at Chatham, by Lieut. B. J. Sullivan. *President*, 52, Flag of Rear-Admiral, Ross, Captain J. Scott, 9th Nov. at Spithead. *Racehorse*, 18, Commissioned at Devonport, by Com. H. W. Crawford, 18th Nov. *Rolla*, 10, Lieut. F. H. Glassc, 18th Nov. paid off at Plymouth. *Rose*, 18, 27th Nov. paid off by Lieut. G. Lowe. We regret to find that the ill state of health to which Commander Barrow had been reduced, by the active employment of the *Rose* in the Eastern Seas, obliged him to resign his command at the Cape. He had the most gratifying assurance from his commander-in-chief, of the valuable assistance which he had derived from his zeal and activity. *Royal George Yacht*, Captain Lord Adolphus Fitz Clarence, 30th Nov. paid off and recommissioned at Portsmouth. *Thunder*, 6, Lieut. T. Smith, 9th, Nov. at Spithead. *Tyne*, 28, Captain J. Townsend, Portsmouth, fitting for Mediterranean. *Vestal*, 26, Commissioned 29th Nov. at Sheerness, by Capt. T. W. Carter. *Volage*, 28, commissioned at Chatham, by Captain H. Smith, (a.) *Wasp*, 16, at Portsmouth, fitting, Com. Hon. D. Pelham.

ABROAD.

Ætna, S.V., Captain A. T. E. Vidal, 11th Nov., left Gibraltar for African Coast to resume survey. *Asia*, 84, Captain W. Fisher, 4th Nov., left Malta for Gibraltar, 22nd, at Gibraltar. *Barham*, 50, Captain A. L. Corry, 15th Nov. at Malta. *Belleophon*, 80, Captain J. Jackson, 15th Nov., at Malta. *Blazer*, S.V., 15th Nov. at Malta. *Cameleon*, 10, Lieut. Com. J. Bradley, 27th Nov. arrived at Lisbon. *Carysfort*, 28, Captain H. B. Martin, Nov. at Constantinople. *Castor*, 36, Captain E. Collier, Nov. at Smyrna; captured a piratical vessel in Palermo Bay. *Champion*, 18, Com. G. S. F. King, 21st Oct. left Halifax for Bermuda; 25th Oct. arrived. *Clio*, 16, Com. W. Richardson, Nov., Coast of Spain. *Comus*, 18, Com. Hon. P. P. Carey, 12th Nov. at Halifax. *Confiance*, 2, Lieut. Com. W. Arlett, 21st Nov. arrived at Marseilles, 15th Nov. at Malta. *Conway*, 28, Captain C. R. Drinkwater, 19th July, at Calcutta. *Cornwallis*, 74, Captain Sir R. Grant, 23rd Oct., arrived at Bermuda from Halifax. *Dido*, 18, Captain L. Davies, C.B., Nov., Coast of Spain. *Donegal*, 78, Captain J. Drake, 27th Nov., arrived at Lisbon. *Edinburgh*, 74, Captain W. H. Henderson, 4th Dec. at Lisbon. *Firefly*, S.V., Lieut. Pearce, 15th Nov. at Malta. *Flamer*, S.V., Lieut. J. Potbury, 30th Sept. left Port Royal for St. Thomas. *Fly*, 18, Com. R. Elliott, 28th Sept. sailed from Rio de Valparaiso. *Gannet*, 16, Com. W. G. H. Whish, expected home in April. *Harlequin*, 16, Com. J. E. Erskine, Nov., Coast of Spain. *Harpy*, 10, Lieut. Hon. G. R. Clements, left Barbados for Sierra Leone. *Harrier*, 18, Com. W. H. H. Carew, 13th Aug., arrived at Valparaiso. *Hastings*, 74, Captain H. Shiffner, 29th Nov. left Lisbon for Portsmouth. *Hazard*, 18, Com. J. Wilkinson, 8th Nov. left Malta for Corfu. *Hercules*, 74, Captain M. F. Berkely, 27th Nov. at Lisbon. *Inconstant*, 37, Captain D. Pring, 27th Nov. at Lisbon. *Magicienne*, 24, 27th Nov. at

Cadis; remained 7th Dec. *Malabar*, 74, Captain W. A. Montagu, C.B., 27th Nov. at Lisbon. *Minden*, 74, Captain A. R. Sharpe, C.B., 22nd Nov. at Gibraltar. *Orestes*, 18, Com. J. F. Newell, 23rd Nov. at Gibraltar; 4th Dec. at Lisbon. *Pearl*, 20, Captain Lord Clarence Paget, 21st Oct. at Bermuda. *Polorus*, 16, Com. F. Harding, 10th Aug. arrived at Madras; sailed for Calcutta, 30th Aug. arrived. *Pembroke*, 74, Captain F. Moresby, 11th Nov. arrived at Malta. *Princess Charlotte*, 104, Flag Admiral, Hon. Sir R. Stopford, Captain A. Fanshawe, 15th Nov. at Malta. *Pylades*, 18, Com. W. L. Castle, 22nd Aug. arrived at Mauritius from Seychelles. *Racer*, 16, Com. J. Hope, 9th Nov. arrived at Havana; on way from Belize, between 21st and 29th Sept. experienced bad weather; gale for 3 days; sail shortened gradually to bare poles—wind, like “a steamer letting off her steam.” On beam ends for five minutes. Night, mainmast went—righted. James Martin, Henry Longmud, drowned; C. Gainbridge, boy killed, and a soldier's child. Hold fetched way to leeward. Wreck cleared away seven feet water—pumped out. Again on beam ends—foremast carried away—righted—jurmasts rigged—great exertion. Bread spoiled—water lost—supplied from a vessel. Supplied with Romney's main and foremasts.—Expected home. *Rainbow*, 28, Captain T. Bennet, 5th Nov. arrived at Halifax; 13th sailed having left Bermuda on 21st Oct. *Raleigh*, 18, Com. M. Quin, 20th May, arrived at Singapore from Manila; 27th sailed for China. *Rapid*, 10, Lieut.-Com. Hon. De Ros Kinnaird, 15th Nov. at Malta. *Rattlemake*, 28, Captain W. Hobson, 26th June, arrived at New Zealand from Sydney; 8th Aug. left Sydney for Calcutta. *Rhadamanthus*, St.V., Com. A. Wakefield, 2nd Nov. left Malta for Levant. *Rodney*, 92, Capt. H. Parker, 15th Nov. at Malta. *Russell*, 74, Capt. Sir W. H. Dillon, K.C.H. Nov. in the Archipelago. *Samarang*, 28, Capt. W. Broughton, 13th Oct. arr. at Rio from B. Ayres. *Sapphire*, 28, Capt. R. Rowley, Nov. Coast of Spain. *Sappho*, 16, Com. T. Fraser, 23rd Oct. arr. at Bermuda from Halifax. *Scorpion*, 10, Lieut. Com. C. Gayton, Nov. Coast of Spain; 22nd Nov. at Gibraltar. *Scylla*, 16, Com. Hon. J. Denman, 27th Nov. at Lisbon. *Seringapatam*, 46, Captain J. Leith, 21st Oct. at Bermuda. *Talvera*, 74, Captain W. B. Mends, Nov. on Coast of Spain. *Tribune*, 24, 15th Nov. at Malta. *Trinculo*, 16, Com. H. E. Coffin, 27th Nov. at Cadiz; 7th Dec. remained. *Vanguard*, 80, Captain Sir T. Fel-lows, 15th Nov. at Malta. *Wanderer*, 16, Com. T. Bushby, 24th Oct. left Quebec for Halifax; 2nd Nov. arrived; 9th sailed for Bermuda. *Wellesley*, 74, Flag R. Admiral Sir Fred. Maitland, Capt. T. Maitland, 3rd Nov. spoken in 6° N. and 24° W. by the ship *Gunga*. *Winchester*, 52, Captain E. Sparshott, 4th Aug. arrived at Madras; 5th sailed for Trincomalee. *Wolf*, 18, Com. E. Stanley, 29th July, arrived at Madras from Trincomalee; 1st Aug. sailed for Calcutta; 30th arrived. *Wolverine*, 16, Com. Hon. E. Howard, Nov. in the Archipelago. *Zebra*, 16, Com. R. Mc Crea, 18th May, arrived at Singapore; 7th Aug. arrived at Madras from Penang, and sailed for Malacca.

Births.

On the 26th of November, the lady of Commander Pritchard, H.M.S. *Donegal*, of a daughter.

Marriages.

On the 21st of November, at Putney, by the Rev. Christopher Robinson, M.A., Captain William Burdett Dobson, R.N., son of Admiral Dobson, to Maria Frances, only daughter of the late Captain Edward Lowther Crofton, R.N., C. B.

On the 6th of November, at Chatham, Henry Mansell, Esq., Surgeon, Guernsey, to Elizabeth, eldest daughter of the late William Mount, Esq., Lieutenant Royal Navy, of Gibraltar-place, Chatham.

At Walcot church, Bath, on Thursday, the 7th of November, by the Rev. Sir George Prevost, Bart., William Henry

Robinson, Esq., Captain in the 72nd, of the Duke of Albany's own Highland's only son of the late Sir W. H. Robinson, K.C.H., to Georgiana, third daughter of Rear-Admiral Buckle.

At Starcross, Exeter, by the Rev. Mr. Powley, Geo. Peacock, Esq., Master, R.N., to Jane, third daughter of the late William Ashe, Esq., Merchant, of that place.

Deaths.

At Brighton, after a very short illness, Rear-Admiral John Tower, C.B., one of the most active officers of his day, and much esteemed by his professional brethren.

On the 17th of November, at Union-place, Blackheath-road, Elizabeth, widow of the late Lieutenant Norman, R.N., aged 70.

On the 27th of November, at Charlton, Com. Lindsay, R.N., in the 81st year of his age.

At Southsea, on the 7th of December, Julia, the infant daughter of Mr. Thomas Dale Gulliver, Purser, R.N.

On the 6th of December, at Lausanne, Switzerland, of inflammation of the liver, Captain Wm. Clarke Jervoice, R.N.

At Coverac, in Cornwall, on the 20th of November, at the residence of her son-in-law, Lieut. Palmer, R.N., Mrs. Greet-ham, relict of the late Mr. Moses Greet-ham, Landport.

At Cherry Bank, near Perth, Alexander Fisher, Esq., Surgeon R.N.; late Surgeon of the Hecla in three successive

voyages to the Arctic regions, under Cap-tain Sir Edward Parry.

At Edinburgh, on the 7th of Decem-ber, aged 83, Mrs. Deans, mother of Cap-tain Dundas, R.N., M.P., and sister of the late Lord Amesbury, a lady deeply lamented by all who knew her.

At Van Dieman's Land, in July, Dr. James Scott, R.N., (1805); for 20 years he had been Colonial Surgeon there.

At Limehouse, on the 26th of October, 1837, Ann, Wife of Commander H. M. Marshall, R.N., grand daughter of John, and niece to the late Sir Walter, and Captain James Ferguson, R.N., who died Lieut. Governor of Greenwich Hos-pital in 1793.

METEOROLOGICAL REGISTER,

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

		NOVEMBER, 1837.											
Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	W.	In. Dec. 28.88	In. Dec. 28.80	53	55	39	57	S.W.	S.W.	9	10	Qr. (2)	Qr. (3)
2	Th.	29.12	29.14	42	46	40	48	S.W.	S.W.	6	6	Qbcp. (2)	Qbcp. (3)
3	F.	29.23	29.32	39	47	32	48	S.W.	S.W.	3	3	B.	B.
4	S.	29.67	29.81	40	46	32	47	W.	N.W.	3	4	Bem.	Bem.
5	Su.	30.06	30.06	38	45	33	46	S.W.	W.	1	1	Bem.	Bem.
6	M.	30.29	30.35	35	43	32	43	N.W.	N.	2	2	B.	B.
7	Tu.	30.42	30.41	29	41	26	42	N.E.	E.	1	1	B.	B.
8	W.	30.28	30.23	26	37	22	38	E.	N.E.	2	2	Fb.	Fb.
9	Th.	30.10	30.07	27	44	20	45	N.W.	S.W.	1	2	Fb.	Od. (3)
10	F.	29.96	29.92	46	52	42	52	S.W.	S.W.	3	3	O.	Od. (3)
11	S.	29.94	29.95	49	53	45	54	S.W.	S.W.	4	5	Bq.	Bq.
12	Su.	30.04	30.11	42	43	40	44	N.W.	N.W.	4	4	Bc.	Bc.
13	M.	30.10	30.02	38	44	32	49	S.W.	S.W.	3	3	Bc.	Or. (4)
14	Tu.	29.55	29.46	45	46	37	48	W.	W.	4	5	Bcp. 1)	Qor. (4)
15	W.	29.91	30.00	36	42	33	43	N.	N.	5	6	Bc.	Bc.
16	Th.	29.98	29.94	33	39	31	40	N.W.	N.	3	3	Bc.	Bc.
17	F.	29.95	29.98	32	41	26	42	N.	N.	2	3	Bc.	B.
18	S.	30.10	30.04	30	38	26	44	S.W.	S.W.	3	3	O.	Od. (3)
19	Su.	30.02	29.96	45	47	39	49	S.W.	S.W.	3	3	Bc.	Qor. (4)
20	M.	29.85	29.75	43	47	41	48	S.W.	S.W.	4	5	B.	Qbc.
21	Tu.	29.82	29.83	38	47	33	48	S.W.	W.	7	7	Qbc.	Qbc.
22	W.	29.94	29.90	50	54	38	56	S.W.	S.W.	7	7	Qod. 2)	Qod. (3)
23	Th.	29.80	29.72	51	53	50	54	S.W.	S.W.	6	6	Qog.	Qogr. (4)
24	F.	29.94	29.94	45	46	44	47	S.W.	S.W.	1	1	Bc.	Bc.
25	S.	30.07	30.12	37	40	35	41	N.	N.	2	2	Bc.	B.
26	Su.	30.02	29.76	37	43	28	44	S.W.	S.W.	3	5	Bem.	Or. (3) (4)
27	M.	29.50	29.46	35	42	33	43	S.W.	W.	3	4	B.	Bem.
28	T.	29.16	29.21	40	43	37	44	S.W.	N.W.	3	4	O.	Bem.
29	W.	29.46	29.60	33	38	29	39	N.W.	N.W.	2	5	Bem.	B.
30	Th.	29.70	29.65	43	48	29	50	S.	S.	3	3	Od. (2)	Bcpd. (3)

NOVEMBER.—Mean height of the Barometer=29.826 inches; Mean Temperature=40.3 degrees
Depth of Rain fallen=1.60 inches.

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

ORIGINAL PAPERS.

FEBRUARY, 1838.

VOYAGE OF THE ACTÆON.—*Valparaiso to the Marquesas Islands.*

WE left Valparaiso on the 29th of August, 1836, intending to shape our course direct for Pitcairn's Island; but a westerly wind obliged us to stand to the northward, when we had variable winds from the N.W. to S. and S.S.E. In lat. $22^{\circ} 30'$ S. and long. $10^{\circ} 3'$ W. we met a S.E. wind with fine clear weather, and considered it the trade, although it veered to N.E. and N.N.E., from which quarter we had it during the remainder of our passage to the Marquesas.

On the 10th September, at 9 A.M. we were in the longitude, and only six miles to the northward of a rock laid in the Admiralty chart,* in lat. $28^{\circ} 33'$ S. and long. $90^{\circ} 30'$ W. Had it been there, or near the situation, we must have seen it, as a good look out was kept at the mast-head, and having a clear day, good sights were obtained for latitude and longitude, the chronometers going well. We passed near the situation of the Wareham Rocks; it was in the evening, but we saw nothing of them. The current, during the whole passage from Valparaiso, set to the southward and eastward, different to that found by Captain Beechey, in the Blossom. The whole amount during the thirty-four days' passage from Valparaiso to the Marquesas Islands, was S. 47° E. eighty-five miles.

On the 2nd of October we discovered the islands of Magdalena and San Pedro, distant from thirty-five to forty miles. We stood close in to Dominica, one of the eastern small ones of the group, and then tacked, standing off and on till daylight, when we had Dominica, Santa Christina, San Pedro, and Hogg's Island in sight. The wind continued easterly, while we bore up and ran to the southward of Dominica, within two miles of the shore, passing between this island and Santa Christina, which are about three miles apart. When through, we hauled close round the point of Santa Christina for Resolution Bay, where we anchored on the 3rd of October, in seventeen fathoms, at two cables' length from the valley; the southern extreme of the bay bearing S.W., and the northern extreme N.W.

[* There is no Admiralty chart of the Pacific Ocean, and until one is constructed, that of Arrowsmith's is supplied to Her Majesty's ships.—ED. N.M.]

The island of Magdalena is very high, and also that of San Pedro, which has a rock off its southern extreme, distinctly visible from the island. Dominica is about twenty-five or thirty miles from east to west, and is very high, particularly at its western end; perhaps about 4,000 feet. There are several vallies in the island, the inhabitants of which are believed to be cannibals.

The island of Christina, off which we had anchored, is about 2,500 feet high, and has about 800 inhabitants, which are distributed in different valleys of the island, each having its own chief, who is again subordinate to the principal chief residing at Resolution Bay. We found here two missionaries (Messrs. Rogerson and Stallworthy) who had succeeded in improving the natives so far as to induce them to throw aside their idols, and were now about to build a chapel. The principal chief or king, with his queen, visited the Actæon. He is a fine stout athletic man, not overburthened with kingly robes; the only thing about his person being the maro, or cloth, round his loins: he had a fine commanding appearance, and his lady was allowed, by the best judges on board, to have some pretensions even to beauty. The graceful folds of her zapa, or body dress, consisting of a mere cloth constructed from the bark of a tree, added no little to the dignity of her appearance. We found the natives of Resolution Bay particularly quiet and inoffensive. A great number found their way on board by swimming, so much so that it was difficult to keep the decks clear of them; yet no case of theft occurred during our stay, although they are frequently known to steal from merchant vessels.

Two of the vallies which terminate in Resolution Bay are inhabited. The largest contains about forty huts, built on a pile of stones collected from the beach. The shape of these is peculiar to themselves. The area enclosed by them is rectangular, the roof thatched with leaves, slanting from one of the sides which is high, down to the opposite, which is about four feet from the ground, and in which is a sliding door.

We found the island abounding in wild hogs, fowls, bread-fruit, plantains, and sweet potatoes; but the natives were too indolent to bring them on board for sale. They will, however, readily exchange their ornaments, &c., for muskets and powder. We found several English and American seamen located among them, from whom we obtained a few pigs and potatoes, as well as plantains. This fruit grows to an enormous size in the island. One of the plantains which I measured was nine inches and a half in circumference, and seven and a half long. These men reside in a valley towards the northern part of the island.

A ship going to Resolution Bay, on passing the north end of Christina should haul close up for the next bluff. She will then pass a small sandy bay, where the foreigners are living in a kind of stockade. The next

bay to this is Resolution Bay, but it cannot be made out until the northern bluff of the bay is passed. When this is done, the villages will be distinctly seen. As the wind blows out of this bay, a ship would have to work up to the anchorage. She may stand close over, the shore being steep, and will anchor in from fifteen to seventeen fathoms, on a hard bottom with the bearings already given. About the months of March and April south west winds set in here, but have neither strength nor duration. The landing place is extremely bad, the boat being obliged to go alongside rocks, on which the surf sometimes is heavy. Watering therefore is difficult, as the casks must be landed through the surf; the water is good, but the supply so small that it would take half an hour to fill a puncheon.

The watering place is in	} lat. 9° 55' 30'' S. } long. 67° 11' 30'' West
of Valparaiso, and by lunars	
of Greenwich. The variation is	138° 50' 45'' West 3° 45' 0'' E.
The centre of Dominica is	66° 54' 0'' W. of
Valparaiso, and the lat. of Hergert rock is	8° 42' 15'' S.
And west of Valparaiso	68° 39' 45'' W.

GENERAL REMARKS RESPECTING THE CURRENTS AND TIDAL STREAMS IN THE ST. LAWRENCE.

10. Prevailing Currents.—11. Currents at the entrance of the Gulf.—12. Current in through the Strait of Belle Isle.—13. Its Course after entering the Gulf.—14. Main Current of the River.—15. Its Course and Rate.—16. Round Point de Monts.—17. Along the South Coast.—18. Remarks on the Tides of the North Coast, eastward of Point de Monts.

10. THE time of high water on the full and change days of the moon, and the rise in spring and neap tides at different places, will be found in a table which will follow. Local peculiarities will be mentioned in their proper places. At present I shall chiefly confine myself to a general description of those great currents, and tidal streams, which, although they may be subject to occasional interruption and modification, seem, nevertheless, to depend on constantly existing causes. The prevailing currents of the St. Lawrence extend over very large spaces, though varying according to locality and other circumstances, and they are altogether so important a feature in the navigation, that some general knowledge respecting them is indispensable both to the safety and expedition of vessels in the gulf and estuary of the St. Lawrence.

11. It is a generally received opinion that a current sets constantly to the south-eastward out of the Gulf of St. Lawrence, between

Newfoundland and Cape Breton Islands, and also that it is frequently deflected to the southward, towards the shores of the island last named, by another current from the northward, which is said to enter the gulf by the Strait of Belle Isle.

I have myself observed that a current sets out, between Cape Ray and St. Paul Island, during westerly winds and in calm weather ; but it is checked by easterly winds, and I believe that it may sometimes run in a contrary direction from the same cause. Northerly winds, and perhaps also the above-named current from the northward, may cause the stream to set to the southward towards Cape Breton Island. But the truth is, that winds, both present and at a distance, possess so powerful and irregular an action upon the set and strength of the currents and tides in this entrance of the gulf, that I can say nothing certain or definite respecting them.

12. The reality of a current inwards through the Strait of Belle Isle, is confirmed by the presence of icebergs, which it transports into the gulf every summer, against the prevailing S.W. winds ; frequently carrying them as far as Mecatina, and sometimes even to the neighbourhood of the east point of Anticosti. It is probable that this is a branch of the great current from Davis Strait, which is known to run along the coast of Labrador, and to transport numerous ice-bergs far to the southward every year. This current will be mentioned again under the head of the Strait of Belle Isle. Its strength is very much increased by a prevalence of N.E. winds : at such times it runs at the rate of 2 knots, through the strait, and for 30 to 40 miles further to the westward ; diminishing gradually in force as it spreads out in the wider parts of the gulf. Usually, however, its rate is much less. At times, when S.W. winds prevail, it becomes very weak ; and it has even been reported to me, that a current has been observed setting out of the gulf, in a contrary direction, to the N.E., for days together, but this was never observed by us during either of the three seasons which we passed there. There is, however, no doubt that this current is extremely irregular, as might be expected at the narrow outlet of a great inland sea, where winds, both within and without, must of necessity possess great influence.

13. After entering the gulf, it runs along the north, or Labrador coast, at the distance of 2 or 3 miles from the outer islands ; leaving a narrow space inshore, in which the streams of the tides, when uninfluenced by winds, are tolerably regular. Passing outside of Mistanoque, the islands of Grand Mecatina, and the South Naker's Ledge, it pursues a direction given to it by the trending of the coast, till it is turned gradually to the southward, by the weak current which is often found coming from the westward between Anticosti and the north coast, during westerly winds, and which is set off to the

southward from Natashquan Point. The united streams continue their southern course at a rate diminishing as they become more widely spread, and which seldom exceeds half a knot: and, finally, joining the main downward current out of the St. Lawrence, of which an account will be given immediately, they all pursue a S.E. direction towards the main entrance of the Gulf, between Cape Ray and the Island of St. Paul. It is this current, from the northward, which is felt by vessels crossing from off the Bird Rocks towards Anticosti: and which, together with neglecting to allow for the local attraction of the compass, has been the principal cause of masters of vessels so often finding themselves, unexpectedly, on the south coast. Many shipwrecks have arisen from this cause near Cape Rosier, Gaspé, Mal Bay, &c.

Both these currents, *viz.*, that from the northward, and the main downward current of the St. Lawrence, are modified by the tides, but in a way directly contrary: for the northern current, in through the Strait of Belle Isle, is accelerated by the flood, and checked by the ebb; whilst the other is accelerated by the ebb, and checked by the flood tide. These modifying causes, namely, the tides and winds, give rise to various combinations, and consequent irregularities, in the direction and strength of these streams, which it is extremely difficult at all times to estimate and allow for correctly.

14. The current along the south coast appears to be superficial: at least we found it so in the lower parts of the estuary, where observations upon the specific gravity of the water on the surface, and taken up from different depths, proved to us that the water of the St. Lawrence and its numerous tributary streams was widely diffused over the estuary.* It has also been observed that the

* I give the following, out of a number of observations, made by Dr. Kelly, on board the *Gulnare*, not alone with reference to the nature of the current, but as also showing, that a very moderate degree of agitation of the water is sufficient at times to mingle the warmer surface water with the colder substrata, which always exist at a few fathoms of depth, and thus by a reduction of temperature of the surface, produce, if the state of the air and dew point be favourable, one of those low fogs, which can often be seen over from the mast-head.

On the 8th July, 1831, we crossed from near Matan, on the south coast, to St. Nicholas Harbour, on the north, with a light S.W. wind and fine weather, and during the flood tide; when near the middle of the Estuary, we had 132 fathoms over a bottom of blue mud. The temperature of the air 64° Fahrenheit.

Specific gravity
(examined at 50° Fahr.)

Dew Point by Daniel's Hygrometer 58°	
Water at the surface 60°	1·0180
,, 30 fathoms 35°	1·0260
,, 50 fathoms 34°	1·0265

A fresh breeze from the westward commenced in the evening, and continued all

current is strongest in spring, soon after the opening of the navigation, when the rivers are swelled by the recently dissolved snows of the winter. But, although, generally speaking, there seems no doubt that

night, which reduced the temperature of the surface water to 39° by 9 A.M., on the morning of the 9th, when the temperature of the air was 62° with a dense fog, the wind having died away to a light breeze. The fog was seen over from the rigging 40 or 50 feet above the sea. At noon it was calm, and the temperature of the surface had risen to 57° , and the fog in consequence had nearly, but not entirely disappeared.

On the 9th July, 1831, at noon, we were becalmed 2 or 3 miles to the southward of Point de Monts, and carried to the S.S.E., at the rate of $1\frac{1}{2}$ knots, by the current. It was nearly high water by the shore, and, consequently, about an hour and a half before the time when the stream of flood ceases.

				Specific gravity (examined at 50° Fahr.)	
The temperature of the air	.	.	.	62°	
"	Dew Point	.	.	61°	
"	water at the surface	.	.	57°	1.0172
"	"	$\frac{1}{2}$ a fathom	.	44°	} By Six's Register Therm.
"	"	5 fathoms	.	40°	
"	"	10 fathoms	.	38°	
"	"	100 fathoms	.	35°	

During the night we had a very strong breeze, which, by the morning of the 10th, had reduced the temperature of the surface water to 37° , and the air to 44° .

On the 19th June, 1832, Point de Monts, N. 61° E., distant 7 miles. Time of tide, half ebb. Wind light, from the westward. Rate of current, 2 knots to the S.S.E.

				Specific gravity (Examined at 50° Fahr.)	
The temperature of the air	.	.	.	49°	
"	Dew Point	.	.	44°	
"	water at the surface	.	.	44°	1.0189
"	"	10 fathoms	.	$37\frac{1}{2}^{\circ}$	1.0232
"	"	20 fathoms	.	39°	1.0246
"	"	47 fathoms	.	33°	1.0262
"	"	104 fathoms	.	36°	1.0275

On this last occasion, the line and attached machine remained perpendicular, from which we inferred that the whole body of water moved down the Estuary in the ebb tide. At the time of the preceding observations the line remained perpendicular only as long as the machine was not lowered down beyond 3 fathoms from the surface. At 5 fathoms the line drew strongly out to the N.N.W., and still more strongly when the machine was lowered to greater depths. Hence it appeared, that in the flood tide, only a thin superstratum of comparatively light and warm water moves down, and that the colder and heavier water beneath is either stationary, or moving up the Estuary.

It also appears from the preceding, and many other similar observations, that in fine weather, the comparatively warm and fresh water of the St. Lawrence, and its numerous tributary streams, floats on the surface, but that when the waters are agitated, by any cause, it becomes mingled with the constantly cold water beneath. The temperature of the surface, therefore, depends less upon the warmth than upon the strength of the winds.

this current is the tribute of the St. Lawrence on its way to the ocean ; yet, in the upper part of the Estuary it is not alone, and at all times, caused by the discharge of the St. Lawrence, but depends also upon peculiarities in the set of the tides. Thus, when our observations had confirmed the truth of the report, that the current always ran down on the south side of the Estuary from a few miles below Red Island towards the Island of Bic, we could not at first account for the fact ; for it appeared impossible that this could be the comparatively fresh water of the St. Lawrence flowing on the surface towards the sea, when we knew that the whole body of water a few miles above, from shore to shore, on either side of Hare Island, and also in the Saguenay River, was running up during the flood tide. Attention, and numerous observations, together with an examination of the temperature and specific gravity of the water, informed us that this was an eddy flood, which is thus explained.

The flood tide ascends in a wide channel more than 100 fathoms deep : when it arrives at the comparatively narrow pass formed by Green Island, Red Islet Reef, and the extensive shoals off the entrance of the Saguenay River, it is obstructed thereby, as well as by the shoalness of the channel to the southward of Hare Island. There is not room for so great a volume of water to pass, and part of it is in consequence turned back, and forms an eddy flood, setting from below Red Islet Reef, towards the Razade Islets, as shown by the arrows in the chart. During the ebb tide, the stream of the Saguenay sets over to the southward in the same direction, hence the current on that side is always down.*

* Since the eddy flood above mentioned exercises a considerable influence over the climate near the shore off which it runs (its course being from the Red Islet Reef passing near the Razade Islets to the Island of Bic;) and also occasions those dense and low fogs, and peculiar forms of mirage, or terrestrial refraction, which depend upon a temperature of the surface water lower than that of the air, or its dew point ; it may not be altogether devoid of interest to give a few additional remarks concerning it.

Of the fact of its being really the stream of flood, although running down the Estuary, we had ample opportunity of convincing ourselves ; especially during the nine or ten days we were employed in sounding within the limits above mentioned ; and during which we made many observations with the object of ascertaining the set strength, and course of this peculiar stream. I select the remarks made on the 19th July, 1831, as being alone nearly sufficient to establish the fact of this part of the general downward stream, or current, being the flood tide. The Gulnare was then at anchor, in 10 fathoms, about 1 mile N.E. of the eastern Razade Islet. In the last quarter ebb the stream ceased, being prevented from coming to us by the shoals, which are dry at low water, between Green and Basque Islands, and the main, but it still continued to run strongly down a short distance outside of our anchorage.

There was no stream at the vessel until it was past a quarter flood by the shore, when the downward stream commenced and continued during the remainder of the

There is no upward stream of the tide (excepting so close in shore as to be useless to ships) all along the south coast from Cape Gaspe to a few miles below Red Islet, in consequence of the union of this eddy flood with the main current of the river; and they have, there-

flood *at a greater rate* than during the preceding or following ebbs. Soon after high water by the shore the downward stream again ceased for a short time, after which the first of the ebb came off the shoals, and then turned down the estuary as before. Now it appears that the eddy flood did not reach us till the end of the first quarter flood by the shore, because time was necessary for the tide to ascend the deep and unobstructed channel to the northward, and to rise and accumulate at the obstructed part of the channel above us, before it was compelled in part to retrograde, and descend to us through a distance of 16 or 17 miles. It ceased again soon after high water, because the stream of flood had ceased above, there being only a few minutes difference in the time of high water at the two places.

A ship becalmed below the Red Islet Reef was brought down to us by the eddy flood, and drifted past about half a mile outside of us. And, on another occasion, during the flood tide, when we sailed from near Red Islet to off Bicquette, passing within 2 or 3 miles of the Razades, we were carried a-head of our reckoning at the average rate of $2\frac{1}{2}$ knots per hour. When beating against a westerly wind, on many occasions, between the Island of Bic and the Razades, we never could gain ground to windward, excepting during the last quarter of the ebb and the first of the flood tide.

The specific gravity of the water of this stream during flood tide was found to be nearly as great as the surface water of the Gulf, and higher than that of the Estuary lower down; and it was also, like the latter, when taken from considerable depths, or when violently agitated by strong winds, extremely cold. Its temperature was usually between 38° and 45° , and was never found higher than 49° , Fahrenheit. We have seen it as low as 39° in every month from June to September inclusive, and that at times and under circumstances when the surface water of the Estuary in other parts was usually about 60° , and when the fresh water of the St. Lawrence above was at an equally high temperature. The great specific gravity and low temperature of this stream are incompatible with the popular supposition of its being, in this part, the lighter and fresher water of the St. Lawrence flowing on the surface towards the sea.

To the same cause which gives rise to the retrograde course of this stream of flood must also be attributed its superior specific gravity and low temperature. For as the great body of the flood tide, moving in the deep North Channel, meets with resistance at the shoals of the Saguenay and Red Islet, the cold water of the Estuary, which everywhere exists at a very moderate depth, is forced to the surface, and thus, together with the irregular bottom, gives rise to the violent whirls and ripples which abound in that vicinity. The thin superstratum of warmer water is thus mingled with, and lost, in the superior quantity of colder water from beneath, and a great reduction of temperature effected.

May not the low temperature often found over shoals in the sea, be attributed to a similar cause, and especially the lower temperature of the water on the Bank of Newfoundland, as compared with the neighbouring sea? for the great current, which brings the icebergs down along the coast of Labrador from the northward, must meet with obstruction in its course to the southward from these Banks, and the cold water, in consequence, be forced to the surface; and, if this be so, we may probably find a reason for the prevalence of fogs upon these banks.

fore, so much influence on the navigation, that I shall endeavour to trace their course more particularly.

15. Commencing from a short distance below the Red Islet Reef, the current is there very strong—about four knots. It decreases in velocity as it proceeds to the south-eastward, slanting over towards the Razade Islets; off which its rate is from two to three knots. It runs strongly along the northern edge of the Bank of Soundings off the south coast, upon which, especially in spring tides, a weak stream of flood will be found flowing in the opposite direction, and the boundary of the two streams is usually marked by a strong ripple. From Father Point to Cape Chatte, the rate of the downward current varies from a half to two knots, according to the tide, direction of the winds, and season of the year.

During the ebb tide the stream runs down on both sides, stronger on the south than on the north coast, and weakest in the middle of the Estuary. It is deflected, or turned off to the southward, by the Points Mille-Vaches, Bersimis, Manicouagon, and Point de Monts, and by the ebbing streams of the large rivers between them: a circumstance which should be carefully attended to by vessels coming up with a northerly wind; as they will infallibly be set over to the southward upon a lee-shore, if they do not make the necessary allowance by keeping their wind well over to the northward.

During the flood tide this stream still continues to run down outside the Bank of Soundings off the south coast, although with diminished velocity, and is felt about half way over towards the north shore. In the middle of the Estuary there is usually slack water; whilst along the north coast the stream of flood is regular in its recurrence, increasing in force as we ascend the Estuary. The strength of the stream of flood is greatest in-shore, and diminishes as we proceed over to the southward, till at the distance of about three leagues it becomes insensible. These differences in the strength and direction of the streams produce strong ripples in various parts of the Estuary, but their position varies with the different times of tide, and perhaps from other causes, so that they cannot safely be trusted for any guidance to the seaman.

16. Round Point de Monts there is little or no stream of flood, excepting very close in-shore: the downward current is constant, or nearly so off that point; and it requires a fast-sailing vessel to beat round it against a westerly wind. Point de Monts turns this current over to the S.S.E., at a rate varying from one to two knots; so that a vessel, having a west wind, and standing over to the southward on the starboard tack, will be carried towards the south at a rapid rate having the current on her weather quarter; during her board back to the northward, she will be retarded, the current being then directly opposed to her course. When sailing at the rate of four knots, it will

usually require only about half the time to go from near Point de Monts over to the south coast, that it will take to return from the latter to the former. This is a most important circumstance, which it is necessary to carefully guard against, when beating up the Estuary in this part during dark nights, and especially in foggy weather.

17. Below Point de Monts the current is no longer felt near the north coast, nor indeed, anywhere to the northward of a line joining Point de Monts and Anticosti. It is confined to the neighbourhood of the south coast, which it follows in its curve to the southward, running strongly past Cape Gaspé, Flat Island, and Bonaventure Island; whence, curving gradually to the south and S.E., it continues its course towards the entrance of the Gulf, with a rate very much lessened in consequence of the great space over which it is now spread. The usual breadth of this stream from Magdalen River to Cape Gaspé is 3 or 4 leagues; but this, I believe, is not uniform. When S.W. winds prevail, it appears that this current, or a branch of it, is driven over from the vicinity of Magdalen River towards Anticosti; part of the stream running round the west point of that island, sets across nearly towards Large Island, (one of the Mingans,) whence turning gradually down outside the Mingan and Esquimaux Islands, and along the north coast, it sweeps round the curve to the westward of Natashquan Point, and is turned off to the southward, as has been already mentioned, (art. 13). The other part sweeps round the large curve, or bay, between the west and S.W. points of Anticosti, and is turned off to the southward by the latter point, frequently causing a great ripple off it, which has been mistaken for breakers on a much more extensive reef than exists there.

I have noted the rate of this current, off different parts of the south coast between Capes Chatte and Gaspé, in the months of June, July, August, and September, and in different years, and scarcely ever found it the same. It varied between one and two knots in westerly winds. It was weaker, often nearly insensible, in easterly winds; and in one instance, off Mont Louis River in a calm which was followed by a strong breeze from the eastward, it could not be perceived.

18. Vessels beating up the St. Lawrence against westerly winds usually experience little difficulty in making good way to windward, after having weathered the west point of Anticosti and arrived on the north coast; because there is seldom any current on that side, and the tides, although weak, are tolerably regular. It is in general very easy to beat from the Seven Islands to Point de Monts; for there the stream of flood is stronger than the ebb; the latter, as well as the current, being turned off to the southward by Point de Monts. There seems, at times, also to be an eddy current there, sweeping round the great bay or curve between the above-named points. It sets off from about Egg Islet to the S.S.W.; and is the probable

cause why vessels, which shape a direct course for Point de Monts with a leading N.W. wind off the land at night, so often find themselves obliged to haul up for, or unable to fetch, the light.

LATITUDES AND LONGITUDES IN THE GULF AND RIVER ST. LAWRENCE—
Determined by Capt. H. W. Bayfield, R.N.

Names of Places.	Point where observed.	Latitude North.	Longitude W. of Greenwich.	Variation W. year observed.	Apparent time of high water.	Rise & fall at Springs and Neaps.
The Magdalen Islands.						
Oyster Pond, Coffin I.				23 59	8 12	3 Sp.T.
Entry Island	S.W. ex.			22 43 (1833)	8 15	2 N. T. do.
Deadman Rock	West Point	47 16 08	62 15 3			
N.W., or Little Bird Rock	Centre.	47 51 02	61 11 54			
Bryon Island	East Point of	47 47 58	61 27 16	23 39 (1835)		
E. Pt. of Magdalens	70fms. N.W. of East ext.	47 37 38	61 25 46			
Amherst Harbour ..	N. side of entrance	47 14 28	61 52 4	22 36 (1833)	8 20	3 Sp.T. 2 N. T.
St. Paul Island*	North extremity	47 14 00	60 11 0	24 00 (1836)		
Ditto	Obs. station on E. side of Neck.	47 13 14	60 11 11			
The West Coast of Newfoundland.						
Cape Ray†	S.W. ext.	47 36 56	59 19 53			
Cod Roy Isd. near Cape Anguille‡ ..	South side of Boat- house.	47 52 38	59 26 23	25 00		
Red Island, near Cape St. George	On E. side 30fms. N.E. of S. point.	48 33 58	59 15 59			
Point Rich	W. ext. H.W.mark	50 41 47	57 26 57			
Port Saunders§	N.E. Pt. entrance.	50 38 36	57 20 40		10 30	6 Sp.T. nearly. 3 N.T.
Point Ferrole	Cove Pt., N.E. ext.	51 02 22	57 5 21			
Green Island	150fms. from N.E. end.	51 24 18	56 36 29	33 38 (1833)		
Cape Norman	North side of St. Cove, S. of E. ext.	51 38 05	55 56 4			

* The variation at St. Paul's Island, 'only approximate being observed with small compass.

† The longitude of Cape Ray, by difference of latitude and true bearing from Cod Roy Island. The latitude being the mean of Captain Bullock's and Mr. Jones's observations.

‡ Variation approximate with a small compass.

§ High water within half an hour, by a single observation.

The Coast of Labrador through the Strait of Belle Isle to Cape St. Lewis.

Names of Places.	Points where observed.	Latitude North.			Longitude, W. of Greenwich.			Variation West Year observed	Apparent time of high water.	Rise and fall at Springs and Neaps.
		°	'	"	°	'	"			
Belle Isle	True N. Point, or	52	01	16	55	18	47			
St. Lewis Inlet ...	N.E. Pt. Magnetic S.W. Point of en- trance.								6 40	3½ Sp.T 1 N.T.
S.E. Battle Island ..	N.E. extremity.	52	15	44	55	35	2			
Cape St. Lewis	Small Peninsula, (see chart)	52	21	24	55	41	6 37 30			
Henley Isd.*(Chateau Bay	N. side (see chart)	52	00	08	56	53	13 36 00		7 35	3½ Sp.T 1 N.T.
York Point	S.E. ex.	51	58	01	55	55	34			
Red Bay	Harbour Island E. extreme	51	43	55	56	28	7 34 30		7 45	3½ S.T. 1½ N.T.
Forteau Bay	S.W. point of extr. from Edwards Isd.	51	25	37	56	59	8			
Ditto	1st. Granite Pt. S. W. side of	51	28	25	56	59	8 33 20 (1834)		8 30	4 Sp.T. 2 N.T.
L'ance a Loup	Flg.staff, hd. of Bay	51	31	35	56	51	33			
Green Island	N.E. Point	51	23	19	57	13	17			

North Coast.—Mingan to Bradore.

Bradore Hills	N.W. Hill, 1,254 ft.	51	35	11	57	14	33			
Ditto	The Mill on N.E. hill, 1,226 feet	51	34	57	57	13	33			
Ditto	The S. hill, 1,135 ft.	51	34	02	57	14	15			
Bradore Harbour ...	Flagstaff at Mr. Jones's dwg. house	51	27	38	57	16	49 33 00	8 45		4 Sp.T. 2 N.T.
Pt. Belles Amours ...	S.E. Extreme	51	26	42	57	28	27 33 00	9 00		4½ S.T. 2½ N.T.
Lion Island†	Isthmus, see chart	51	24	09	57	41	4 33 00	9 15		5 Sp.T. 2½ N.T.
Mistanoque Harbour	E. part of Cove, N. side of Mistanoque Island.	51	15	51	58	14	50 33 00	10 30		6 Sp.T. 3 N.T.
Mecattina Harbour...	S. Point of Deadcove	50	46	52	59	1	48	10 30		5 Sp.T. 3 N.T.
Grand Pt. Mecattina	S.E. extreme	50	44	10	59	2	38			
Ditto	S. extreme	50	44	07	59	2	53			
Dyke Island	N.E. extreme.	50	44	08				32 45 (1833)		
Hare Harbour.....	E. side of, see chart	50	36	32	59	19	50			

* Flood observed to come from the northward along this coast.

† Between Mistanoque and the Strait of Belle Isle, the needle was much disturbed by local attraction of the rocks which contain iron ore in abundance, but the variation given is conceived to be very nearly correct, since the observations on board the Gulnare, two or three miles off shore gave the same result as nearly as we could observe, say to within two degrees, for there was much sea and consequent motion.

Names of Places.	Points where observed.	Latitude North.	Longitude W. of Greenwich.	Variation W. year observed.	Apparent time of high water.	Rise and fall at Springs and Neaps.
		° ' "	° ' "	° ' "	h. m.	feet.
Point Antrobus	N. side of	50 33 20	59 19 14	29 83 (1833)		
Wapitagan Harbour*	E. end of Islet, near best anchorage.	50 11 48	60 3 48		10 30	5 Sp. T. 3 N. T.
Cape Whittle	S.W. extreme of Lake Island.	50 10 44	60 9 29	29 09 (1832)		
Outer Islet, off Coacocho Bay	S. point.	50 09 12	60 20 38			
Kegashka Bay	Islet at W. end of	50 11 27	61 18 4	28 34 (1832)	10 45	5 Sp. T. 3 N. T.
Natashquan River ...	S. pt. of entrance	50 07 05	61 50 26			
Little Natashquan Harbour	Islet, see chart	50 11 49				
Nabesippe River ...	Islet. Granite pt. S. E. of entrance.	50 14 0		28 8 (1832)		
Watcheashoo Penins.	Summit.	50 16 26				

STEAM NAVIGATION.—*Report of Committee of House of Commons, on Steam Communication with India.*

MR. EDITOR,—Pending the sitting of this Committee, Her Majesty's government and the East India Company came to an arrangement, to adopt a direct line of communication by steam, through Egypt, with Bombay, thus anticipating, in part, the labours of the Committee, which, however, ended in a recommendation of a more comprehensive system of communication, to include the presidencies of Madras and Bengal, touching at Ceylon.

That the evidence fully proves such extension of steam intercourse to be desirable, there can be no question; but as it also as clearly shows, that the extension recommended is the only way to make it remunerative, we may safely leave it in the hands of the company, as they have adopted, with the most praiseworthy liberality, the scheme as it is now in operation, on terms which will clearly be a charge upon its revenues; there can, therefore, be little doubt of their carrying

* Between Wapitagan and Mccattina, the needle was also much disturbed by local attraction of the rocks, which contain iron ore in abundance. The mean of five observations for variation at different points between the two places, gave 33° 15' W. The variation at Dyke Island is considered to be too great from the effect of the Basak Dykes.

out the views of the Committee, seeing that by so doing, returns will certainly be yielded that will do more than pay for the whole.

The object of my now addressing you, Mr. Editor, is to notice some parts of the evidence given before the Committee, with the view of removing objections, which must tend to leave on the minds of those with whom rests the power of carrying into effect the recommendation of the said Committee, doubts as to the results; and at the same time, to endeavour to remove unnecessary fears, which some parts of the evidence may produce in the minds of those who might otherwise be disposed to adopt such conveyance.

It is much to be regretted, that when a Committee sits to consider a subject, the gentlemen composing it cannot see the propriety of calling before them evidence to speak at once to the point. In this case the main question seems to have been, "What steam vessels are capable of effecting at sea?" and whether, in fact, they can face the S.W. monsoon. Captain Sir D. Dunn is called, who says that the S.W. monsoon is "a double-reefed topsail breeze;" that it is rarely he has seen three reefs in the topsails in India, and never but once "close reefs." That the S.W. monsoon is not nearly so bad as a winter passage from Falmouth to Gibraltar. Captain Nairne says, that the S.W. monsoon blows hardest at the entrance of Bombay Harbour, and invariably moderates thirty or forty leagues out; and that coming out of the harbour, even in face of the heaviest of it, it is done under "double reefs." He also says, that coming from Leith to London, in a steamer, he has seen her go right on end, four knots in the wind's eye, when off Flamborough Head the colliers were under close-reefed topsails, mainsail furled; and that there was fully as much sea, and more wind, than he has experienced in the S.W. monsoon in India. Now after receiving the evidence of these two respectable seamen, why did not the committee call before them, those men who had experience in the command of steamers making the passages from Falmouth to Gibraltar, and from Leith to London? they would soon have settled the point, and removed a great deal of imaginary difficulty, which still remains to obstruct the operations of the Indian government, in carrying out the recommendation of the committee; a work which they should commence without doubts on their minds, if done at all.

With the view of removing such difficulties, I will endeavour to tell them what such evidence would have been, and I will embrace in it all such points of importance as I consider the committee left unsettled, and to which I will suppose such parties to be able to speak; it would be to this effect: "That a properly constructed powerful steamer, of such size as at present in existence, *will go* directly against such winds and sea as the S.W. monsoon is proved before the committee to be; that such vessels will make *very great way* against any 'double reefed topsail breeze;' and, that the idea of running a steamer down, *head*

foremost, is sheer nonsense, and reflects no credit upon the nautical skill of those who have given such an opinion; that the difficulty of facing a head sea, is to find sufficient power, and not that any power whatever will force her too fast; that 'easing her,' under such circumstances, may be very well to talk about, by such authorities as Dr. Lardner, but that the *practice* is quite unknown to the Scotchmen to whom Mr. Peacock alludes, and who would certainly (although Mr. Peacock seems only to mention it, to doubt it) go right ahead against everything short of 'a storm;' against everything in fact that a sailing vessel can carry sail to; against whatever they would not be obliged to lay to under." Their evidence would, no doubt, also have settled what seems to have much puzzled the committee, namely, the advantage of size in steamers. They would certainly have told the committee "that the larger the steamer the better *she must go* against a sea, and that if there was no difficulty about constructing them of sufficient strength, there is hardly any limit to the proper length of a steamer to embrace the greatest advantages; that it is self-evident that, supposing an extreme case, take one of twenty feet long, and another of 300 or 400 feet, can a doubt exist that the latter would go right on end against almost any sea, when the other would not steer, would be swamped in opposing but a very moderate degree of sea? that looking at the proportion of power to tonnage, such large vessel would evidently require less power in proportion to the smaller one, because the area of the midship section would be relatively less, and that she only required to be propelled in the worst of weather, against what to her would be a trifling sea, in comparison to what the same would be to a vessel half (or less) her length; that these are, moreover, facts proved by every day's practice and experience."

They would also, if such an absurdity as is contained in Dr. Lardner's evidence does not refute itself, have shown up the fallacious nonsense which it contains. He says, (*vide report*,) "The efficiency of a steamer is best determined by the actual quantity of coals per horse power which she will consume going over a given distance. I do not care about the time; it is a matter of no importance whether she goes fast or slow; the question is, how much coals will carry her 1,000 miles, or how many thousand miles a given weight of coals will carry her; that I call locomotive duty." Thus, according to Dr. Lardner, if a steamer started from Bombay for Socotra, in the S.W. monsoon, with the "locomotive" power complete, she would be as sure to get to Socotra before the expenditure of her fuel, as she would be if she had a calm and smooth sea all the way. They, the practical evidence, (which, as I have said, should have been called,) would add, "that the proportioning the expenditure of fuel to the distance run over, is new to them, they having never yet heard of any mode of estimating their consumption, and excluding that important item "time" as an essential

element; and that the term "locomotive" appears to them improper, unless it can be shown that the same quantity of coals used in twenty-four hours, will carry a steamer, under all circumstances, the same distance; or, to put time out of the question, that twenty tons of fuel will always cause her to go over one certain distance. They would, I think, further say, "that another statement of the learned Doctor's, which appears in the evidence, is at variance with common sense, and contrary to fact:"—namely, (*vide* report,) "The greater the proportion the power has to the tonnage, the greater will be the speed, but the consumption of fuel will be nearly the same; that is to say, a ton of coals will carry the vessel nearly the same distance," being as much as to say, put a steamer of 200 horse power against resistance which she will just overcome, against which she will go, (say two knots,) and giving another ship of the same dimensions the power of 100 horses; that one ton of coals will propel the two vessels the same distance, when in point of fact the latter would not go ahead at all. They would also have rectified another error, which seems to be very general, and which was evidently participated in, by both the committee and evidence:—namely, the strain upon a steamer and her machinery, which they would have informed the committee is least when going head to wind, and, as respects the machinery, greatest, the finer the weather. They would also have denied all that was said about the advantage of tacking, going off a direct course, &c., with a view either of speed or ease being gained, and would have stated that the easiest and safest going of a steamer is right head to wind, and that if she cannot make her passage in this manner, she will never do it by setting sail and tacking; that if the sea should make so as to be too much for her to face, but which nothing short of a hurricane, or heavy storm, would cause, then, that all the advantages of steam for effecting a passage would, for the time, be lost, as common sense must point out that she could not go obliquely to such sea, and that she must lay to like other ships, until the weather moderated; that they consider all the statements of the evidence, of vessels going two or three knots faster by keeping away and bringing the wind or sea four or five points on the bow, to be inapplicable to a steamer; as such they would further tell Dr. Lardner, "that in a new constructed steamer, there is not that necessity he imagines for 'tanking the coal boxes,' and that although a steamer is decidedly retarded by being too deep, that she goes faster the lighter she is, as all other ships do; and that, even should only one half, or less of her paddle-boards be immersed, the resistance is so much reduced, that she may go as fast as ever, and with a great saving, by working the engine expansively in this state of loading."

I venture to say that something very like what has been here supposed, would have been the evidence of that respectable old veteran, "Captain Bain," of the *Monarch*, who has probably as much experi-

Fig. 3.

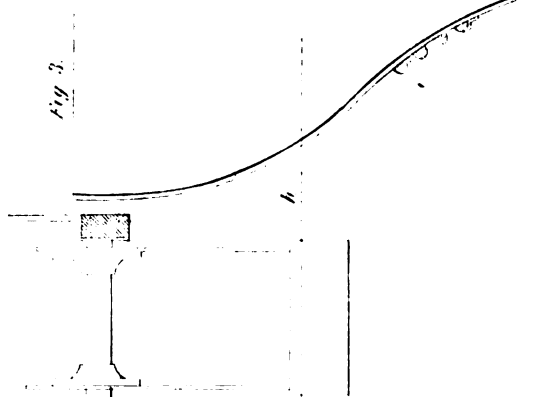


Fig. 1.

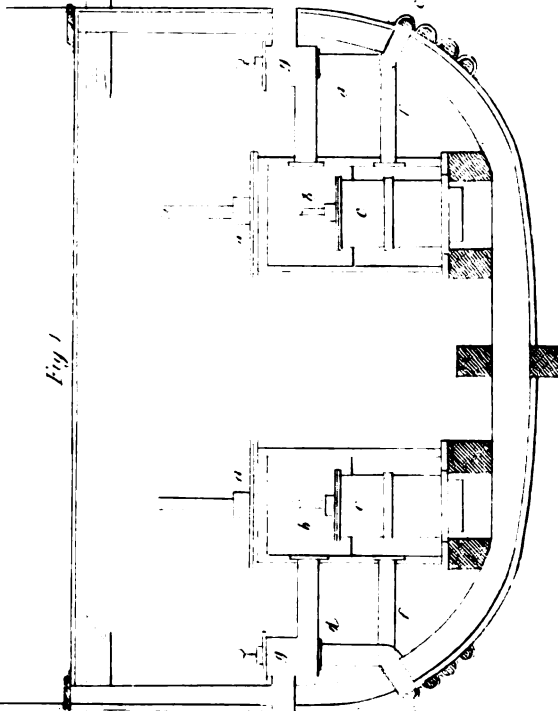


Fig. 2.

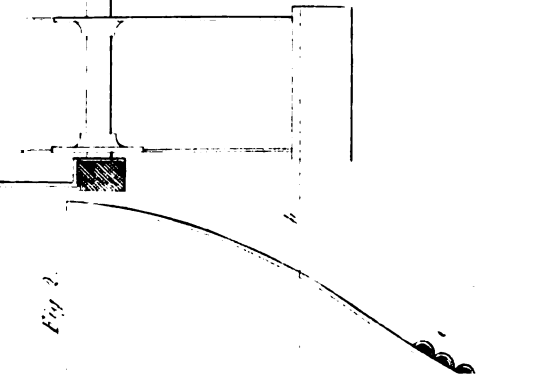
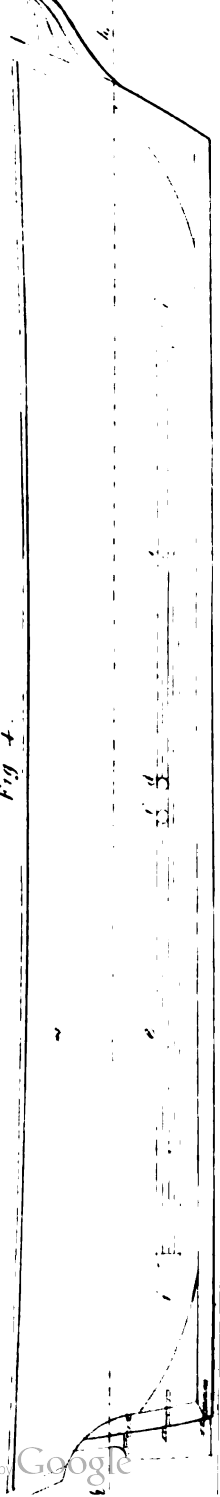


Fig. 4.



ence as any one, in steam navigation; and that he will agree in opinion with me, that a large steamer, will go against anything short of a hurricane, or violent storm, to which all human efforts must succumb. It is holding Omnipotence in contempt, to say, that man's designs shall not be overcome by the fury of the elements. Skill and human labour, have not been able to overcome, even on "*terra firma*," the effects of the storm. Steamers never can be supposed to be able to resist the elements, under all possible circumstances; man must bow to the will of his Creator, admit his dependence upon providence, "and bear up;" the intent of my argument being only, that a steamer may be constructed, and that in fact many now exist, capable of making the passage with ease, against the S.W. monsoon in India, and indeed against very much worse weather.

Having made some strong remarks, upon the theories of Dr. Lardner, I will beg to be understood, that I am not under any mistake, as to the learned doctor's meaning, about the locomotive duty, &c. &c., but I mean to say distinctly, that the operation of steam, in navigation, has not, as yet, been received by him in a proper light, and that in point of fact his theories are untenable.

In conclusion, I would endeavour to draw public attention to the evidence brought before the committee in question, for the sake of circulating the very able, and enlightened opinions of Mr. Turton, a leading barrister long resident in India, and those of the late Governor General, Lord William Bentinck, as to the very great advantage of steam navigation to India. The language in which these opinions are given in the evidence, is so superior, so classical, the basis of them so sound and convincing, that all philanthropists, all who have any wish for the enlightenment of their species, and all especially, who take interest in the welfare of India, will feel great delight in the perusal of their sentiments. In doing this, they cannot fail to contrast the evidence of such authorities with the pettifogging, contracted ideas of some, who cannot see beyond the desk at which they have probably sat all their lives; and who can utter the opinion, that India and the Indians, would not be benefited by the increased intercourse which steam communication would create, and which would in fact bring the ignorant and uncivilized, as it were, next door to intellectual Europe.

I am, Sir, &c.,
MERCATOR.

SYMINGTON'S CONDENSEMENT.

MR. EDITOR, — The following plan for refrigerating the condensation from steam engines, will hereafter prove of much importance in steam navigation. The apparatus has been contrived by my brother-

ENLARGED SERIES.—NO. 2.—VOL. FOR 1838. 3

in-law, Mr. William Symington, and is for the purpose of preventing the incrustation produced in boilers wherein sea or river water has been evaporated. That it will be found admirably adapted to fulfil Mr. Symington's expectations, is now more than a matter of theory, the City of Londonderry, a large vessel, having been fitted on this plan during the month of July and beginning of August, and gives much satisfaction. There is, however, a deficiency of cooling power, but this being the first experiment, the principle is by no means affected by it, as it can and will be remedied as soon as an opportunity offers; no alteration whatever having been made since the apparatus was first applied.

The City of Londonderry has been twice at Gibraltar and intermediate ports, and is now making her third voyage with this apparatus. It was predicted that the refrigerating tubes were so exposed to the action of the sea, that they would speedily be torn off, particularly in the Bay of Biscay. When they were applied, we were given to understand that the vessel was only to trade between Dublin, Belfast, and London; and therefore, although well secured, they were not so completely finished, as such, for a distant voyage, as they might have been. Notwithstanding this, neither the action of the sea, nor the violent waves of the Bay of Biscay, had in the slightest degree loosened even a single pipe, when the vessel was examined after making her last voyage; proving not only that the tubes were well secured, but also, the imprudence of expressing pre-conceived opinions, the bane and ruin of many a valuable design.

Among the advantages which Mr. Symington's plan offers to those interested in steam shipping, may be instanced the following:—

1. The greater length of time the boilers will last; it being a well ascertained fact, that a very few years' use will wear them out on the common plan, owing to their being corroded by the matters with which they are in contact, or incinerated in different places by the fierce heat needed to generate steam through a very imperfect conductor of caloric.
2. The constant supply of fresh water for the boilers.
3. A more perfect cooling medium can never be obtained than the sea or river, in which the vessel floats.
4. No unwieldy tanks for condensing inside of the vessel, nor pumps for keeping up the circulation, will be needed, whereby more space will be allowed for carrying cargo, or whatever else may be intended, than where such appendages are employed.
5. No alterations need be made in the steam engine itself.

Taking a deep interest in this invention, not only from being connected with Mr. Symington by relationship, and in the patent, but also from the desire I have to see him reap a fitting reward for the ingenuity and perseverance he displays in endeavouring to improve his

father's important invention, Steam Navigation, I have, to prevent encroaching on the time occupied with his engagements, forwarded by his request, this communication for your consideration, and for insertion in your useful journal, should you deem it worthy of its pages.

I have the honour to remain, &c.,
ROBERT BOWIE.

Description of Drawing.

Fig. 1. *a a* Cylinders. *b b* Condensers and hot wells. *c c* Air pumps. *d d* Eduction or discharge pipes. *e e* Refrigerating tubes. *ff* Induction or injection tubes. *g g* Discharge valves. *h h* Flotation line. *i i* Wedged formed end pieces in which the pipes terminate.

From this representation and description, it must be obvious that the portion of water used for injection, will be conveyed to the refrigerating tubes situated outside of the vessel, and there cooled down to the proper temperature for being re-injected; and the other portion be conveyed to the boiler in the usual manner.

Fig. 2. Is a section showing the position of the tubes, and the protection afforded them by the form of the vessel's stem. Fig. 3. Is a section, showing their position and protection at the vessel's stern. Fig. 4. Is a longitudinal view of the hull of a vessel with the refrigerating apparatus attached.

The same letters refer to the same parts in each drawing.

EXPERIMENTS ON THE HORIZONTAL MAGNETIC FORCE.

December, 1837.

MR. EDITOR,—As the distribution, or various degrees of intensity of terrestrial magnetism has become a subject of general interest and experiment with scientific naval officers, I am induced to offer you for insertion in your excellent journal, the following abstract of some magnetical experiments made for this purpose; in hopes that the simplicity and cheapness of the instruments required, may lead others, when opportunities occur, to make similar experiments.

Nothing more is required than to observe with a watch showing seconds, the time of a magnetised needle completing a given number of horizontal vibrations, the needle being balanced or suspended in the centre by means of a fibre of silk. This may be done either by attaching the fibre to a small hole in the centre of the needle, or what is more convenient perhaps, to a sliding stirrup, into which the needle may be made to slip. The magnetism of the needle should never be interfered with; and the first arcs of vibration should be the same in all the experiments, in order that the results may be strictly com-

parative. The temperature at the time of experiment should also be registered.

These experiments were made by Mr. James Napier, then master of H.M. ship *Winchester*, now of the dock yard, Malta; a gentleman whose skill as a scientific navigator is well known in the service. They are accompanied with the following remarks:

“ My method was to select a place for observation as far removed from all large masses of iron as possible. In general I made three or four trials with each needle, so as by taking the mean, I might arrive at something near a correct result. The needles were kept the whole time in one place, which was a drawer in the chaplain's cabin; they were invariably sealed up after each observation, and were never opened or taken out of the case by any one but myself; and I think their near agreement at the same place, at different periods, gives reason to conclude that very little alteration took place in their magnetism.

TABLE I.

CONTAINING THE TIMES OF COMPLETING 100 HORIZONTAL VIBRATIONS OF FOUR MAGNETIC NEEDLES, NOS. 1, 2, 3, and 4.

Place.	Lat.		Long.		No. 1.	No. 2.	No. 3.	No. 4.	Ther.
	N.	W.	o /	o /					
1831, 2, and 3.					m. s.	m. s.	m. s.	m. s.	
Portsmouth	50 48	1 6			6 12,35	6 6,0	5 24,6	4 57,5	65
Bermuda (Ireland I ^d)	32 18	64 47			5 15,9	5 5,42	4 33,1	4 8,95	66
Carthagea	10 25	75 33			4 23,5	4 13,2	3 46,5	3 28,7	84
S. Martha	11 15	74 14			4 23,0	4 14,2	3 44,3	3 26,0	85
Halifax	44 39	63 32			6 31,52	6 18,12	5 35,0	5 6,12	62
N. Bruuswk. (Partdg. I)	45 14	66 1			6 45,0	6 32,75	5 46,7	5 17,0	62
Barbados (Carlisle B.)	13 5	59 40			4 19,5	4 12,8	3 47,95	3 27,0	80
Antigua, (St. John's)	17 9	61 58			4 33,75	4 24,4	3 55,65	3 34,4	82
Jamaica (Port Royal)	17 55	76 49			4 25,17	4 16,25	3 48,02	3 28,72	79

TABLE II.

Places.	Horizontal Forces.
Portsmouth	1.0000
Bermuda	1.4165
Carthagea	2.0430
St. Martha.....	2.0644
Halifax	0.9312
New Brunswick	0.8677
Barbados	2.0620
Antigua	1.8973
Jamaica	2.0174

The mean of all the experiments are given in Table I. The intervals of time between the experiment, by reason of very quick runs between

the respective places, were in general very small. The experiments in Columbia were repeated the following month at Portsmouth.

I have computed the relative horizontal forces (or the forces soliciting the common compass needle) and given them in Table II.

The first arc of vibration on each side of the magnetic meridian was 15°.

GEORGE FISHER,
Greenwich Hospital.

EXPENDITURE OF COALS IN THE ATALANTA AND BERENICE.

MR. EDITOR,—You have favoured the public with the Logs of the Atalanta and Berenice steam vessels during their passages out to India, and as they have no doubt been read with interest, it is to be regretted that anything appearing like inaccuracy should be found in their detail. I allude to the statements of the consumption of fuel, given every two hours with unvarying regularity, whether in fine or foul weather. In the former vessel, about the same quantity appears to have been used, and also with different speeds of the engines. This is very unusual. I have been led to believe that the consumption is considerably influenced by the state of the weather, and the number of strokes of the engines.

In sea passages it is, I understand, necessary to clear out the boiler fire-places at periods more or less distant according to the quality of coals, on which occasions the grates have to be supplied with an extra quantity of fresh fuel. This process does not appear to have taken place on board either of these vessels, at least the logs do not show any increase of consumption rendered necessary by such an operation. One undeviating regularity pervades the whole of these records, without stating by what means the coals were so accurately ascertained every two hours. If the stokers performed this duty of weighing them, their labour would be increased in a two fold degree, for the same exertion would be required to weigh as to fire. The seamen would object to such duty. I am therefore led to doubt their being weighed at all, and if so, it follows as a consequence that little dependence is to be placed upon that part of the log. Besides, I consider the consumption understated. There is also a manifest error (whether designedly or not I do not pretend to determine) in the results at the end of each portion of passage, where the quantity of coal expended per hour is divided by 210 and 230 horses to give the consumption in lbs. per horse per hour, without reference to expansion or the reduced speed of the engines, giving an erroneously small expenditure per hour.

I question, however, the divisions, and before I offer an example of the above, I will attempt to show the nominal power of the engines in

both vessels to be rated too high, and I shall do so by referring to the only standard authority which can be admitted,* as engine makers of the present day are not very particular about the diameters of their cylinders for the same nominal power, varying them as they happen to be placed in competition with others. This is an undoubted fact. It is therefore well that the public, or those interested, have such authority to fall back upon.

In your November number, the diameters of the cylinders in both vessels are given, viz. : the Atalanta's 54 inches, and 5 feet stroke, and 20 per minute power, jointly 210. The Berenice's 56 inches diameter, 5-6 stroke, and 18-2 per minute, equal 230 horses.

Now the Atalanta's 54 equal area $\frac{2,290 \times 7 \times 200}{33,000} = 97$ horses each.

According to the maker's practice, the steam will be expanded in the cylinder for more than one third of the length of the stroke; we have therefore to reduce the above according to this expansion, viz., 63 horses during the period of the admission of the steam, and 25-5 horses for the expanded part, equal together to $88\frac{1}{2}$ horses at the speed of 20 strokes per minute. This power must be further reduced according as the velocity of the piston decreases.

For example, take any portion of the passage. I have at random taken that from Fernando Po to the Cape, in the above number for November, where the coals are stated "at 213 tons, time 346 hours, equal 12.3 cwt. per hour, and equal $6\frac{1}{2}$ lbs. per horse per hour."

Now the strokes of the engines taken out each day, average 16.7 per minute, and as the power at 20 strokes has been shown to be $88\frac{1}{2}$ horses, by proportion 16.7 will give 74, or jointly 148 horses, and $12.3 \times 112 \text{ lbs.} = 9.3 \text{ lbs.}$ per horse per hour, instead of the above $6\frac{1}{2}$.

148

Let the effect produced by this fuel be next examined, as regards evaporation, which is the most simple and best test of performance. Assuming that the steam admitted, previous to expansion taking place, to be equal to $1\frac{1}{2}$ lbs. above the pressure of the atmosphere, and that it is entirely shut off at 21 inches before the piston reaches the top and bottom of cylinder, making at the same time due allowances for the waste spaces and passages, we have a content of $56\frac{1}{4}$ cubic feet per cylinder, or $112\frac{1}{2}$ cubic feet per stroke, of each engine of steam, $1\frac{1}{2}$ above atmospheric pressure, or 124 cubic feet, equal to the atmosphere. And for both engines = 248 cubic feet per stroke.

* "James Watt."—That the horse power is equal to 33,000 lbs. raised through a foot space in a minute. And for the nominal power of a steam engine, the area of its piston, in inches, being multiplied by 7 lbs., and by the number of feet it moves per minute, divided by 33,000 shall equal a horse's power.

Then $\frac{248 \times 16.7 \times 60}{1,700} = 146$ cubic feet of water evaporated per hour

with 12.3 cwt. of coal, or 11.57 cubic feet per cwt. say $12\frac{1}{2}$ by way of making an allowance for waste and condensation; a very common result, or, as the Cornish engineers would term it, a *very small duty*.

With regard to the power of the engines of the Berenice, the cylinders being 56 inches diameter, and the strokes 18.2 per minute, we have $56 = \text{area } \frac{246.3 \times 7 \times 200.2}{33,000} = 104\frac{1}{2}$ horses each. Assuming the

steam to be expanded for 22 inches of the length of the stroke, we have 69.54 horses for the power during its admission, and 28.16 for the expanded portion, equal together to 97.7 horses each, or 19.54 for both engines, at 18.2 strokes per minute.

From the Mauritius to Bombay, the average strokes per minute equal 14.4, and as $18.2 : 97.7 :: 14.4 : 77\frac{1}{2}$ horses = 151 $\frac{1}{2}$ jointly.

Coals stated at 11cwt. 110lbs. = 8.6lbs. per horse per hour, instead of 5.8lbs. given in the log.

The effect of this fuel may be got by following the same method as that adopted for the Atalanta's, and making similar allowances, we have 136.55 cubic feet of steam expanded per stroke for both engines, or 300 cubic feet of atmospheric density.

Then $\frac{300 \times 14.4 \times 60}{1700} = 152\frac{1}{2}$ cubic feet of water evaporated per

hour, with 11cwt. 110lbs. of coal, or 12.7 cubic feet per cwt., say 13.0 cubic feet as an allowance, as in the former case, for water and condensation.

These calculations, I have to observe, are made upon the presumption that the makers have followed their usual mode of expansion: the results will therefore be more or less correct, as I may have hit the degree used.

In the Atalanta I understand it was effected by the slide valve alone, but in the Berenice, a separate means was provided, so that the steam might be cut off from the cylinders at any portion of the stroke. Notice is frequently taken of this being so done to a quarter and even a half of the stroke, as in the portions of passage from Mayo to Fernando Po, and from thence to the Cape; during which the latter extent seems to have been employed, while the average number of strokes are 13.66 per minute.

Now with this expansion and speed, we have only a nominal power for both engines of 133 horses, with an expenditure of fuel of 15.86 cwt. per hour. Then, $\frac{15.86 \times 112}{133} = 13.3$ lbs. of coal per horse, per

hour, instead of 7 $\frac{3}{4}$ lbs.!

When my attention was first drawn to these logs and the results

therein stated, I was under the impression that more heat had been obtained out of a pound of coal than had before been established; but on going into the particulars, I discovered the inaccuracy of them, and was led to conclude besides, as I do still, that the consumption is understated, particularly in the *Atalanta's* case. Many of your readers I doubt not have taken the statements for granted. If you consider these observations will tend to enlighten them, or lead others to throw more light upon the subject than I have been able to do, your insertion will much oblige,

Sir,

Your obedient Servant,

London, 13th Dec.

TUBAL CAIN.

THE GALAPAGOS—*Floriade*.*

As we had the option of passing to the northward or southward of the Galapagos, without lengthening our voyage by either course, the commander preferred making the southernmost islands of this archipelago, in order to communicate with the new colony, which has now been established on two of them three years, by Colonel Willimi, and to judge for himself of the actual state of the colonization of this new department of the Equador.

Mr. Willimi visited us at Guayaquil, and we have from himself the following details:—He served in the rank of colonel in the army of the republic of the Equador, and assisted this state in obtaining its independence. Considering himself afterwards ill-treated by the executive, he left their service, and bought two of the most southern islands of the Galapagos, Charles Island, and one of the eastern part of the Group. He then obtained permission from the president of the republic, to found upon it, at his own expense, a colony of free men, and which, in compliment to General Flores, he called *Floriade*.

It was in the prisons of Guayaquil that Colonel Willimi planned the outline of his colony, and among the profligate females of that city, that he selected the future matrons of his flock; and he asserts, that the inhabitants of *Floriade*, by their good conduct, have completely cast the veil of oblivion over their impure origin.

Mr. Willimi has been named by the state of the Equador, Governor of all the Galapagos. He was born at Louisiana, and speaks French in a superior style; he is a man of great mind, endowed with a lively imagination, and is a strong republican. He informs us that his colonists cultivate the ground given them, with seeds and instruments of husbandry, to work on the express condition that they should devote some hours of their weekly labour for the general good. He employed them in these intervals, in making a landing place, in establishing the

* From the *Annales Maritimes*.

means of communication between the different points of the island, and in clearing a channel to the habitations for the small supply of water flowing from the interior of the island. The colonists also devote some hours of their time to the governor's plantations.

The population of Floriade consists at present of 300 individuals.

Charles island produces maize, cassado, some sugar cane, a little cotton, and some culinary plants. The colonists also planted fruit trees, which succeed wonderfully. They have abundance of fowls, and a tolerable number of pigs.

The climate of the Galapagos is healthy. Although this archipelago is situated under the line, the heat is not severe, from being constantly refreshed by storms and breezes from the S.W. to the S.S.E. As to fresh water, this first of human wants, it would appear not to be very abundant there, but this is only report, for these islands are but little known, and we have no positive information as to their physical formation.

Mr. Willimi expects to increase the produce of the colony by the vessels of the whale fishery, the species of whale being that which yields spermaceti. He asserts that these are met with in great numbers in the midst of the Galapagos, and that the shores abound with excellent fish and turtle, besides the terrapin or land turtle, and seals of every species, even those which produce fur.

It is easy to perceive that Mr. Willimi speaks of his Floriade with the partiality of a father for his child. Yet it cannot be doubted that if this colony thrives, and that the overplus of population settle in the other islands of the Galapagos, which possess safe ports and fresh water, (for there is every reason to believe that water may be found in many of these islands,) then this archipelago will afford an important place of resort, not only for the numerous whalers of the Pacific to refresh their crews at, but even to ships trading from Peru and Chili to Mexico, California, and the Sandwich Isles.

In a military point of view, this new department of the Equador is not without its importance; for, by its geographical position, it affords at all times, a resort where ships of war may obtain supplies, without being far from their cruising ground, when employed in intercepting the communication between the different countries above-mentioned. Here they may be victualled without being far out of their course or cruise.

BARS OF HARBOURS.—*Lowestoft-ness.*

MR. EDITOR,—In your number for July last is a letter signed "Nauticus," on the subject of Harbours of Refuge, alluding more particularly to a scheme then on foot for the construction of such a harbour in Lowestoft-

ness.—As I find attempts are again being made to bring this matter forward, perhaps you will allow me the opportunity of making a few remarks upon the assertions there made, intended to induce a belief that the entrance to the said harbour can be maintained with a depth sufficient to constitute it an efficient harbour of refuge, or at least with a depth of fifteen feet at low water. I have no wish to throw cold water upon any practical scheme for such a harbour, which would doubtless be of national importance, but possibly to deter the unwary from incautiously pinning their faith upon the respectable names of provisional directors, let their object be either humanity or profitable investment; for surely a bad harbour of refuge will cause more damage to vessels attempting it, than would often occur to them by keeping the sea, and a bad harbour is not likely to be a good speculation.

Lowestoft-ness is a flat point of sand and shingle, which has been slowly but continually increasing and extending further into the sea; the shores towards the point are comparatively steep; towards the centre of this Ness it is proposed to excavate a basin of some three acres, and from it to open a channel north and south into the sea on either side of the Ness. These entrances being protected with short piers, and once opened to a depth of fifteen feet at low water, (no very easy job,) are thenceforth and for ever after so, to remain at the simple *ipse dixit* of the engineer. I doubt it; I will ask any unprejudiced person acquainted with this part of the coast, the flow of tide, and the harbours in the neighbourhood, whether it is not much more likely that it will not only be barred up, but “blocked up and lost?” But Nauticus says, “The sole cause of bars at the mouths of harbours, is the conflicting action of effluent currents passing into the ocean tide at right angles with the shore, and that wherever there is a backwater, or what is termed a scouring power in operation, there a bar exists. And it is an invariable fact, that wherever attempts have been made to remove bars by increasing the velocity of the natural current into the ocean, there the bars have also increased in proportion,” and there is no exception, he says, to this rule, to be found on the whole surface of the globe.

Assertion is not argument, nor “a reference to the maps of the world,” demonstration on such a point. But suppose we examine the harbours in the neighbourhood of the favoured spot where this new law is to do so much wonders, Yarmouth, Lowestoft and Southwold, as quite if not more likely to be exposed to similar circumstances than harbours in Portugal or the Antipodes. First then of Yarmouth. Yarmouth, though the outfall of three considerable rivers, and with an extensive tide at backwater, has about seven feet at low water on the bar. Nauticus would of course say, no wonder, all that water running out is what makes the bar. Stop all that backwater and you may have what depth of water you please to make on the bar. But

what is the fact? The bar has been for years much worse, and has only of late years been considerably improved by increasing the current out of the harbour, according to the plan of that eminent engineer Mr. Walker; hear what he himself says before the Harbour of Refuge committee. In answer to questions put, he says, "the state of Yarmouth Bar is much improved of late years. The commissioners have of late removed some of the awkward places that were in the river, by allowing the water to flow more freely, increasing in a small degree the backwater, and decreasing the friction that that backwater suffered in passing down the river to the bar. They have also extended the north pier considerably, and by that means have carried the current of the backwater further into the tide, so as to act with greater force upon the bar. In the memory of gentlemen now in the room, there were times of the tide when it was not difficult to walk from one side of the harbour to the other, but since the present works have been done, the bar has, as I have stated, been very regular. Upon the question of tidal water coming in, and whether there is a greater or less body of water coming down from the highlands that regulates the harbour or the depth of the river. Upon the general principle the more backwater the better" &c. Mr. W. Barber, a commissioner of Yarmouth Haven, and Mr. H. Barrett, corroborate the above evidence.

Now let us look at Lowestoft Harbour, which is within a few hundred yards of the site of the proposed harbour in the Ness: this is entirely an artificial work, and was made about nine years ago by the Norwich and Lowestoft Navigation Company; the object being to enable sea-borne vessels to reach Norwich; this undertaking has turned out a failure, like many other joint stock concerns, and though still in a very unfinished state, and I believe in chancery, has about four feet on its bar at low water: here, however, there is no river running out, and what little water does drain out with the receding tide, does *not* enter the sea at right angles with the coast, but the bar still heaves up, and it is only by the occasional use of the backwater, an artificial scouring power which runs out at the rate of eight or nine miles an hour, that the bar is kept as good as it is; each sluicing will remove, I am told, from one to two feet from the bar.

Southwold bar is still worse, not having above three feet upon it at low water, sometimes less, and sometimes quite blocked up. Here there is very little backwater to keep open the passage, the consequence has been the occasional entire stoppage of the entrance by the sand and shingle, driving past and into it. Under these circumstances a channel has been dug through the shingle at low water, and by help of a good *fresh* coming down the river the passage has been again opened.

It thus appears from the three harbours within a few miles of

Lowestoft-ness, that the more backwater the better the bar; Yarmouth first, with the outfall of three rivers, seven feet; Lowestoft, with scarcely any natural stream, but with the occasional use of a rapid artificial current, four feet; and Southwold, with little natural current and no artificial scour, sometimes three feet, sometimes less.

Surely, these examples must afford a better precedent in the case of a harbour in Lowestoft-ness, than any other in the four quarters of the globe; and further, they show that it is hopeless to expect to make a harbour of refuge with fifteen feet at low water on that part of the coast.

The cause of bars is generally considered to be as follows:—The sand or shingle of the beach, travels along the shore in the direction of the prevailing winds and currents. A pier built across the beach, stops this shingle till it has filled up the angle of the pier, it then goes on round the end of the pier, part entering the harbour, and the other part, though going on past the opening, shoaling the water in its track till it reaches the shore on the other side of the pier. This shoal-water, or track of the passing shingle, is the bar; and the depth of water upon it is dependent upon the scouring power of the stream which runs across it. The sectional area of the channel at low water over the bar, being necessarily (in such material) proportionate to the stream which every low water makes its passage over it.

This theory is supported by the facts of the existing harbours in the neighbourhood, by the opinion of Mr. Walker, and by the opinion of Mr. H. Palmer, another engineer, who has made this subject his study; who says, in a paper read to the Royal Society, in April, 1834, “The only natural power by which the channels through the beach are retained, is the returning force of the water, which on this coast is generally scanty.”

Nauticus says, that “some of the most experienced nautical and scientific men concur in his opinion,” and “an eminent engineer’s report on the proposed harbour, is confirmatory on the subject.”

I grant that the ultimate results of harbour operations, do not admit of that positive demonstration which is so desirable; and that, therefore, the opinion of the public must principally depend upon that of those who have professionally, or otherwise, made themselves more especially acquainted with the subject.

Why then did not Nauticus mention the names of the gentlemen alluded to? and as to the eminent engineer’s report, as it is not before the public, we are equally unable to form an opinion of that gentleman’s experience and his arguments.

I have already given the opinion of two scientific men. I will now give that of one of the most experienced nautical men of the day, which will be found to differ from that of Nauticus. Captain Hewitt, of H.M. surveying vessel “The Fairy,” who has been employed for a

number of years by the Admiralty, in surveying the eastern coast, more especially from the Tees to Lowestoft, and who was consequently called upon by the Refuge Harbour Committee, for his opinion as to where it was possible to construct such an harbour. The evidence which this gentleman gives, as to the unfitness of that part of the coast for a harbour of refuge, is too long to introduce. He says, however, in answer to the question, "if government proposed to lay out a large sum of money in refuge harbours, where could they be situated? I know of no other place than Redcar, throughout the whole coast. Redcar is the only place that nature seems to have formed for the purpose."

I have already trespassed too much upon your time, and will therefore only touch upon a few secondary difficulties and absurdities of the scheme. The very rapid tide past the entrance of the proposed harbour, would make it worse than Ramsgate to enter. The difficulty of constructing four stone piers in such a tide and depth of water, for 125,000*l.*, let alone all the rest of the works, and the difficulty of first making fifteen feet, at low water, between the said pier.

The absurdities, though of no public interest, may possibly beneficially exercise the digestive organs of the proposed shareholders; such as that of expecting that vessels will pay 4*d.* per ton for the proposed shelter, or that they will enter at the rate of ten per day all the year round. That the pilots and owners of steam-tugs will present to the company some 4,000*l.* per annum, for the honour of being allowed to exercise their calling; that the rates upon merchandise, to the little town of Lowestoft should all at once rise to a sum ten times greater than is now paid, &c. &c.

I will now leave the subject in the hands of your readers, who will decide between Nauticus and myself, as to whose opinion carries the greater appearance of probability with them, merely observing that my sincere wish is to elicit the truth.

I am, Sir, &c.,
INVESTIGATOR.

ON RAISING SUNKEN VESSELS.

[An account of the sinking of the Dutch frigate, *Ambuscade*, of thirty-two guns, near the Great Nore, with the mode used in recovering her, by Mr. Joseph Whidbey, master attendant in Sheerness dockyard. Communicated by the Right Honourable Sir Joseph Banks, Bart., &c. Read, April 28th, 1803.]

At a time when sunken vessels are lying in the bed of the river Thames, detrimental to its navigation it may not be amiss to refer to some of the achievements of our forefathers on these occasions, and we have accordingly selected the following piece of expert seamanship from the records of the *Royal Society*.

At eight o'clock in the morning of the 9th day of July, 1801, the Dutch frigate, *Ambuscade*, left the moorings in Sheerness harbour, her foresail, topsails, and top-gallant sails being set, with the wind aft, blowing strong. In about thirty minutes she went down by the head, near the Great Nore; not giving the crew time to take in the sails, nor the pilot or officers more than four minutes' notice before she sunk, by which unfortunate event twenty-two of the crew were drowned.

This extraordinary accident was owing to the hawse-holes being extremely large and low, the hawse plugs not being put in, and the holes being pressed under water by a crowd of sail on the ship, through which means a sufficient body of water got in unperceived to carry her to the bottom.

The instant she sunk she rolled over to windward across the tide, and lay on her beam ends; so that at low water the muzzles of her main-deck guns were a little out of the water, and pointed to the zenith with thirty-two feet of water round her.

The first point I had to gain was to get her upright. Before I could accomplish it I was obliged to cut away her foremast and main-top mast, which had no effect, until the mizen-mast was also cut away; she then instantly lifted her side, so that at low water the lee railing of her quarter deck was visible.

By proceeding in this manner, the first part of my object was attained with a secured main-mast and all its rigging to enable me, should I be fortunate enough to weigh the ship, to lighten her by it with the greatest possible expedition.

The ship being in the forementioned state, gave me an opportunity the next low water to get out her quarter, fore-castle, and some of her main-deck guns, with a variety of other articles.

I next proceeded to sling her; which was done with two nineteen inch cables divided into eight equal parts. The larboard side of the ship being so much higher than the starboard, enabled me to clench each of the ends round two of the ports excepting one that was clenched round the main-mast, and with great difficulty, by long rods and diving, I got small lines rove through four of the ports on the starboard side, by which means I got four of the cables through those ports across her deck, which were clenched to the main-mast and larboard side, having four ends on each side completely fast at equal distances from each other.

I brought the *Broederscarp*, of 1,063 tons burthen, out of the harbour, which received the four ends on the starboard side, also four lighters of 100 tons each, which took in the other four ends on the larboard side, over their bows. All the eight ends were at low water hove down with great power by a purchase lashed distinctly on each of them. I then laid down two thirteen inch cables, spliced together,

with an anchor of 24cwt., in a direction with the ship's keel. On the end of the cable next the frigate a block was lashed, through which was rove a nine inch hawser, one end of which was made fast to the ship, the other end was brought to a capstan on board the Broederscarp, and hove on it as much as it would bear, with an intention to relieve the frigate from the powerful effect of cohesion. This had so far the desired effect, that at about half flood, I perceived the ship to draw on end, and swing to the tide; and all the slings were considerably relieved.

At high water she was completely out of her bed; at the next low water I hove all the purchases down again. At half flood she floated, and the whole group drove together into the harbour, a distance of three miles, and grounded the frigate on the west side of it. It took me two tides more to lift her on the shore, sufficiently high to pump her out, which was then done with ease, and the ship completely recovered without the smallest damage whatever either to her bottom or sides.

I do not apprehend there is anything new in the mode I adopted in weighing the Ambuscade excepting the idea of removing the effect of cohesion by the process before described; and I have every reason to think, that if that principle had been acted on, in the attempt made to weigh the Royal George, it would have succeeded.

[The foregoing account of Mr. Widbey's operations is illustrated by a plate, but they are, no doubt, sufficiently clear to the nautical reader. The following description of it, however, will enable him to sketch it for himself. A plan of the frigate appears with the Broederscarp alongside of her on her starboard side; on her larboard side, are three lighters, and on her larboard bow the fourth, all with their bows to the frigate. The frigate has fourteen ports on each side, not including the bridle port. The cable from the lighter on the bow, goes in through the frigate's inner hawse hole, and after being bitted, is secured somewhere about the main hatchway. Then reckoning from forward the cable of the next lighter is clenched after being passed through the second and third larboard ports. The cable of the third lighter is passed through the sixth and seventh port on the larboard side, and clenched; and that of the fourth lighter is clenched after being passed through the ninth and tenth port on the larboard side.

The foremost cable from the Broederscarp, after being led through the fourth port on the starboard side, is passed through the third and fourth on the larboard side and clenched. The second cable from this vessel is led through the seventh port on the starboard side, and clenched round the mainmast. The third cable of this vessel is led through the tenth starboard port of the frigate, and clenched after being passed through the tenth and eleventh port on the larboard side, and her fourth cable is led through the thirteenth starboard port, and clenched after being passed through the eleventh and twelfth larboard ports. The cables in the lighters are led over their bows and the purchases on each cable brought to a separate capstan in each vessel. Those in the Broederscarp are also brought to separate capstans.]

HOLYHEAD HARBOUR, AS A PACKET STATION.

THE object of ascertaining what line of coast, and harbour, appear best calculated to furnish the greatest facilities for steam communication by packets across the channel, has caused several propositions to be brought forward on that subject, viz. from Fishguard to Wexford from Portdynllaen to Wicklow, or to Kingstown, also from a proposed harbour at the Orms Head, on either of which plans being adopted a new pier harbour or harbours must be built. And it is to be observed that in forming a packet station with regard to safety, and regularity, the principal points to be considered, are the local advantages in approaching the coast under every circumstance of wind, and weather, as packets are expected to do. The Irish coast from Dublin Bay, all along to the southward of the Tuscar Lighthouse, is dangerous to approach in heavy gales, and thick weather, the line of banks, shoals, and rocks, that are found there, have proved the destruction of many vessels, and lives. The occurrences in the month of February last were most calamitous in the loss of ships, and above two hundred lives, within the range of that coast.

The local dangers of Wexford, and Wicklow, are pointed out on the charts. The line of direct course from Portdynllaen to Kingstown, runs over the middle of the Kish Bank, which is most dangerous in blowing weather. The proposed harbour at the Orms Head would not be a suitable place to maintain a direct communication across the channel, being situated thirty miles eastward of Holyhead. For some years past in this part, there is evidently a material change in the weather during the winter months, the north westerly gales far from being so violent as we have experienced them, from which the packets on this station are never found to delay the mail. Still, under all circumstances, the most western point should be selected as the shortest distance, and to secure the shortest passage, as well as adopting a line the most safe, and most certain, under all circumstances. Should a new pier be built at any place on the Irish coast, it should be at Howth, outside of the present harbour, where the water is deep to the rock, and where would be found every possible advantage in the saving of expense, and length of time in building. The eastern pier of Howth would become its western shelter, thereby forming one half of the necessary work, and expense, the stone quarry being right over the spot, where the projection should commence, and where one of the best artificial harbours could be formed, fit for any ships that would even approach it. Were such a harbour built to correspond with this station, every desirable advantage would be gained, the coast being bold, and clear from one shore to the other. The distance from Holyhead to Howth Head is forty-eight miles, with a

channel light upon each extreme point. In thick weather, the packets would find their port by signals arranged for that purpose, as they now often arrive in this harbour. During easterly winds the number of mails delayed here, arriving too late for the coach, since the packets have been removed to Kingstown, will prove (if enquired into) the advantage of Howth Station, and from the prevailing wind in this channel, viz. W.S.W. to South, the Packets to and from hence have the greatest advantage of setting sail on their passage across.

The following distances between the several places mentioned, may be relied upon as correct :—

From Fishguard to Wexford.....	52 miles.
Portdynllaen to Wicklow	50 do.
Do. to Kingstown	60 do.
Holyhead Harbour to do.....	53 do.
Do. to Howth	50 do.
Orms Head to Kingstown.....	82 do.

H. EVANS,

Harbour Master.

IRON STEAM-BOATS.—*Voyage of L'Egyptienne.*

ON various occasions, we have noticed a species of naval architecture, peculiar alone to this country, the progress of which has been gradual and uniform. Since steam vessels have become of such general use in navigation, making voyages, not only between the various principal ports of our own country, but to distant parts of the world, every possible attention seems to have been devoted to secure the important qualities of strength, durability, stowage, and light draught of water, combined with speed; and from the peculiar character of these vessels, namely, their not being subject to the violent strain produced by the pressure of sails, the substitution of iron instead of wood in their construction, seemed at first to be plausible, and has since been proved, by experience, to be most efficient. The advantages of an iron steam-vessel, over one formed of timber, not only combine the qualities which we have enumerated, but many others. With regard to strength, it may be safely asserted, that in such a collision as that which took place lately in the Thames, between the Monarch and Apollo, and which sent the latter to the bottom of the river, an iron vessel would have been more capable of withstanding the shock, and would have been kept afloat by its peculiar construction, had a serious leak ensued. But the superiority of iron, over timber vessels, is particularly evinced in their durability; and, if we consider the entire freedom which an iron vessel has from all risk of fire, a calamity which has so frequently proved fatal to steam vessels in particular, the superiority of these ves-

sels in this respect, will be still more apparent. From the nature of their construction, they likewise afford more room for stowage than wooden vessels; they are more buoyant, and from their general compactness, draw less water, and are generally faster. We have long been impressed with the importance of this subject, and should take blame to ourselves were we to neglect longer pointing out these advantages of iron steam vessels to the various steam companies of the metropolis, showing that it is to their interest to adopt them. And in support of our opinion, we have obtained from Mr. John Laird, of Liverpool, the following list of some iron vessels constructed by him, at the Birkenhead iron works, near that place, and a few particulars concerning them:—

Name.	Length.		Beam.		Pwr. of Engine	Owners.	Where Flying.
	Ft.	In.	Ft.	In.				hrs.
Lady Lansdowne ..	133		17		90	City of Dublin Co.	Loch Derg
John Randolph ..	110		22		60	Iron St. Boat Co....	Savannah
Garryowen	180		21	6	90	City of Dublin Co.	Shannon
Euphrates	105		19		50	Hon. E. I. Co.	Euphrates
Tigris	90		16		20	Ditto	Lost in Euphrates
Richmond	120		26		60	Old Steam Bt. Co.	Savannah
Eliza Price	90		18		50	Woodside Ferry Co.	Woodside & Liverpl
Duncannon	115		19		65	Waterford Strm. Co.	Waterfd., Duncann.
L' Egyptienne	125		18		45	Pacha of Egypt. ...	Alexandria
Indies..... ..	115		24		60	Hon. East India Co.	Sent to Bombay
Rainbow	198		25		180	General Steam Co.	London to Ramagt.
Savannah	115		24		60	Iron Stm. Boat Co.	Savannah
Glow-worm	160		22	2	110	T. A. Smith, Esq.	Steam Yacht
Voador	100		15		30	I. H. Weelman, Esq.	Rio de Janeiro

The first account we shall extract is concerning the "John Randolph," sent out in pieces to Savana, dated at Savana, 27th October, 1834, from W. Scarborough, Esq., who says,

The iron boat, "John Randolph," very far outstrips and out-tows any other boat on the river, having beat some of them one half, and at the time when the river has

become so low that no other steam boat than herself can get up to Augusta, she is reaping a golden harvest for her owner, Mr. Lamar.

Another account of the 14th November following, says,

I gave you, in my letter, circumstantial information concerning the iron boat, "John Randolph." She still maintains, or rather increases her good reputation, and the river continuing so low, she may be fairly said to be coining money for her proprietor. In going up the river a few days

ago, with two large boats in tow, she struck a log and broke one of her paddle wheels to pieces; she then cast off one of the boats, and with the single paddle wheel carried the other boat to Augusta without difficulty.

The following is a more complete account of the John Randolph. It is from G. B. Lamar, Esq., of that place, dated 9th July, 1836:—

The iron steam boat which you constructed and sent out for me in pieces to Savana Georgia, in 1834, was received and put up and riveted complete, within

three months' time; and though five men, accustomed to such work, had been sent at the same time to complete her, I found the expense of them quite unnecessary,

as the pieces had been so well arranged and marked by you, that no difficulty could occur with persons at all conversant with the ordinary construction of boats or vessels; besides which, a larger one since sent to the same place by you for the Steam Boat Company of Georgia, was put up in even less time, and without any difficulty. In mine, which was called the "John Randolph," was placed an English engine, of 30in. cylinder, and five feet stroke, with heavy iron boiler, steam and other pipes, with which, and water and wood for 12 hours, (six cords) she drew but 2 feet 9 inches water. She made her first trip in August, 1834, towing flats with cargoes on Savana river, the current of which is 2½ miles per hour, and with the weight of 8,000 bushels of salt (about 200 tons) up; or, 1,500 bales of cotton (about 220 tons) down on the two flats, she made with eighteen revolutions of the crank per minute, five miles per hour upward, and upwards of eight miles per hour down the stream.

She was kept in constant employment from August, 1834, till April, 1835, when her hull was examined inside and out, and was found to be uninjured. From July she was again constantly employed till April, 1836, when she was again examined, and found free from rust or injury, though from July to Dec. the river had been very low, and she had been once aground for a week, on a sand bar; and daily, while running on and over logs, snags, and other innumerable impediments, as well as the sand bars; during that time, working off the flats and over the bars, very frequently, during which they were often snagged, and otherwise made leaky, while the steam boat itself, though made to take the worst difficulties when known to

the pilots, was not injured, and remained as tight as at first.

The preparation to prevent the iron rusting was only three coats of white lead inside, and three of red lead outside, previous to launching, and one coat of white lead inside between August, 1834, and April, 1835, and two coats of each at that time, inside and out respectively, and one coat of white lead inside, between July, 1835, and April, 1836.

In addition to the foregoing conclusive evidence in her favour, I may add, that the directors of the Steam Boat Company, of Georgia, who had been eighteen years engaged in the navigation of that river, and had tried various projects for its improvement; so soon as they observed the condition of the Randolph, in April, 1836, when she was first examined, immediately resolved to order the one you sent out for that company, in the month of February last.

Notwithstanding the already tedious length of this letter, I will take leave to add, as my own opinion, and from the experience of the "John Randolph," that iron boats are decidedly superior in every respect to wooden; and, for lightness, durability, impregnability to snags, or other injury, or, the extent of injury to be apprehended even after such accidents occur, whether to the boat or cargo, superior to any that have yet been tried, and must in the course of time from these considerations alone, (besides combining every advantage that others do,) entirely supersede all other vessels whether for river or sea service, should the difficulties apprehended in regard to the compass be overcome; and, I will also add, that such is, I believe, the universal opinion of all who have witnessed the operations of the John Randolph.

The owners of the Garryowen and Lansdowne speak thus of them, from Killaloe, in March 1835, and July 1836.

I cannot at the same time omit to congratulate you on the successful result of both the iron steamers. The Garryowen does her business capitally, and as far as my judgment goes, I never met with so many

good qualities in any steamer: in fact, I cannot find a fault in her.

I have before given you my opinion in favour of the iron steamers, Lansdowne and Garryowen, and nothing has transpired since to alter it.

The managing Director of the City of Dublin Steam Packet Company also adds of the same vessels:

These two steam vessels, built entirely of iron, have, in the most tremendous gales of wind and heavy seas, proved themselves superior, in every respect, and have

Liverpool, March 30, 1835.
given every satisfaction, and have, during the heavy gales of the present month, continued to ply with regularity, giving every confidence to the public.

Iron steam vessels, from the experience we have had, are every way superior to wooden vessels, in point of buoyancy, strength, stowing, speed, and seaworthiness; they can be made absolutely like life boats, almost incapable of being sunk.

The foregoing are dated in 1835; but the following, from C. W. Williams, Esq., bring down the character of these vessels to a more recent period:—

City of Dublin Steam Packet Company Office,
87, Water Street, Liverpool, Aug. 11, 1836.

With respect to the condition of our two large iron steamers, the Garryowen and Lansdowne, since I last wrote you on the subject, nothing has occurred to alter our opinion of their superiority over timber vessels.

The Garryowen, being in salt water, has been regularly examined, and there appears no indication of decay or injury; and, in every respect, she maintains her former good character, and continues to give entire satisfaction to the public,

We now come to the vessels which were sent out to the Euphrates, on which Mr. Laird received the following pleasing communication from the India House.

The board direct me to add, that they are much gratified at the generally very satisfactory nature of the evidence afforded by the documents now transmitted to

And Colonel Chesney writes thus concerning them:—

It is but right to tell you, that the iron vessels constructed by you, far exceeded my expectations, as well as those of the naval officers employed in the late expedition, who would, one and all, bear testimony anywhere to their extraordinary solidity: indeed, it was often repeated by Lieutenant Cleveland and the others, that any wooden vessel must have been destroyed before the service was one half completed; whereas, the Euphrates was as perfect when they laid her up at Bagdad as the first day she was floated. As I am now occupied in preparing a work on the expedition, I shall have a better opportunity than the present, of doing justice to the subject of iron vessels; for it is my belief that they will entirely supersede wood, on account of their com-

London, 6th June, 1835.
Our iron steamer, the Garryowen, now on the Shannon, and in sea water, gives every promise of durability; she takes the ground well, and there appears no sign of corrosion anywhere.

though frequently encountering heavy gales and seas.

I have great satisfaction in informing you, that having had the boilers of the Garryowen iron boat taken out, for the purposes of repair, we have found the bottom of the vessel, both as to skin and ribs, in the most satisfactory state; no appearance whatever of rust or decay, and in fact, in every way as perfect as the other parts of the vessel, which have been exposed to view, and daily inspected.

London, 4th July 1836.

you, in respect to the manner in which your contract for these steam vessels has been performed.

3, Down-street, Piccadilly, 17th Nov., 1837.

parative strength, cheapness, and durability, whenever people are satisfied that their only disadvantage, the free working of the compass has been overcome.

In the Euphrates, which is entirely of iron, there was a variation of about 11°, and that with little change, but the compass worked very sluggishly and required extreme care. In the Tigris with the upper part (as you know) of wood it worked freely—indeed, as far as I could judge, (and I had a great deal of practice taking bearings for the survey,) as well as in any ordinary vessel; and, if we had placed the compass as far above the iron in the Euphrates, as it happened to be by chance in the Tigris, I think it would have worked quite as well, which experiment should be made by you forthwith.

The Duncannon, another in the list of Mr. Laird's vessels, is thus spoken of, by J. Malcolmson, Esq., Chairman of the Waterford Steam Navigation Company.

Waterford, 29th September, 1837.

The Duncannon has now been plying five months on our river between this city and the harbour mouth, and has in every way confirmed the advantages of iron steam boats over wood ones, as to strength and speed; and I have little

doubt but that she will prove more durable.

Her model does you credit for she has encountered some rough seas in which the captain's report of her performance has been very favourable, and she is stiff with a heavy deck load.

The foregoing statements are sufficient perhaps to overcome the most sceptical advocates of wood, in favour of iron steamers, but we will now give an extract or two concerning L'Egyptienne, constructed for the Pacha of Egypt. Captain Clarkson, her commander, writes thus: from

Oporto, 14th July, 1837.

L'Egyptienne arrived here, after a passage of four days and twenty hours, from Liverpool, having had a head wind and sea to contend with, from Monday the 10th July. The vessel was an excellent sea boat, very dry and stiff. There was no difficulty with the compass placed according to Professor Barlow's directions, (about seven feet above deck) and I made the land most accurately.

Again, from Malta, 2nd October, on his way home, he says, that he encountered a good deal of sea on the passage out, in crossing the Bay of Biscay; that the vessel is very easy at sea, and ships

little or no water, even in a strong head wind and heavy sea; that he arrived at Alexandria on the 5th August, after a passage of 18 days actual steaming, having called to take fuel on board, at Oporto, Lisbon, Gibraltar, and Malta; that after his arrival at Alexandria, he made two passages to Candia and back, with Government despatches; and on his return the second time, was sent up the Nile with one of the Pacha's admirals and several other officers on board, who gave a most favourable report of her performance; and, that the Pacha is well pleased with the vessel.

Although, from the result of the first experiment, the efficiency of iron steam vessels was satisfactorily established, a question arose whether the action of the iron on the compass would not become a formidable objection to their employment at sea. The great importance of this was evident, and from experiments made by Professor Barlow and Com. Johnson, R.N., it was found that the compass might be placed so far above the deck of the vessel as to be perfectly efficient. We have already given an account of the first iron steam vessel, the Alburkah, that ever made a voyage across the Atlantic, and a spirited lithograph will be found of her, in our first volume. As such a voyage is a matter of curiosity as well as history, we have obtained a copy of L'Egyptienne's log, with which we shall close these observations. That the advantages of iron steam boats are becoming known, there can be no doubt from the circumstance, that those who build them have their hands full, and the satisfaction of seeing their labours patronized in America, France, Egypt, Holland, and Russia, as well as in the northern parts of our own country; and the sooner our metropolitan steam companies look to this fact the better.

Notes from the log-book of L'Egyptienne, iron steam yacht, belonging to His Highness the Pacha of Egypt, on

her voyage from Liverpool to Alexandria; built at the Birkenhead iron works, and of the following dimensions:

	ft.	in.
Length of keel and fore rake	120	0
Beam at paddle shaft	18	0
Draft of water light	3	0
Do. with 50 tons of coal, about	4	6
One engine of 45 horse power.		

	ft.	in.
Diameter of cylinder	0	38
Length of stroke	3	6
Diameter of paddle wheels	14	6
Length of floats	7	0

Saturday, 8th July, 1837.—Received on board 50 tons of coal and other requisite stores. At noon the crew joined as follows: one mate, six seamen, one engineer, three firemen; hauled out of deck and anchored in the river. At 10 P.M. got the steam up; at 11.30 P.M. proceeded to sea.

July 9th.—Light breeze and fine weather. At 1.30 A.M. passed the floating light, and at 7.30 A.M. landed the pilot at Holyhead, not having met a pilot-boat. At 9 A.M., rounded the head against a strong flood tide, steering S.W. by S.; by compass, raised about eight feet from the deck; S.S.W. by compass in the binnacle. Noon, Bardsey, bearing S. by E., hazy weather, steaming $7\frac{1}{2}$ knots per hour, light breeze with a head sea. At 10.30 P.M., Tuskar light, bearing N.E. by E., distant about 12 miles, steered S.W.; difference of compasses $1\frac{1}{2}$ points to the eastward.

July 10th.—Moderate N.E. breeze with a heavy head sea; part of the star-board paddle box gave way, steaming $7\frac{1}{2}$ knots. Noon, hazy, no observations—employed getting coals out of the after-cabin, &c.; midnight calm, steaming 8 knots; difference of compasses $1\frac{1}{2}$ to the eastward.

July 11th.—Calm and hazy with a long swell from the S.W.; daylight, passed a ship standing to the northward. Noon, light S.W. breeze, latitude observed $47^{\circ} 39' N.$, steaming $7\frac{1}{2}$ knots. Stopped the engine and put on two new floats, breeze increasing W.S.W.; got all the coals from aft; difference of compasses $1\frac{1}{2}$ points.

July 12th.—Daylight, light breeze and fine, spoke a schooner bound to London; several vessels in sight. Noon, latitude observed $44^{\circ} 41' N.$, steaming $8\frac{1}{2}$ knots at 8.30 P.M., made the land, Cape Prior, bearing S.S.W., compasses as yesterday; midnight, hazy with rain.

July 13th.—Hazy weather at 1.30 A.M. passed Cape Finsterre; daylight, off Carrobed. Noon, off Vigo Bay; at 8.30 P.M. came to anchor off Oporto Bar.

July 14th.—Daylight, got a pilot and ran into the river, where we were stopped by the custom-house officers; cleaned the boilers, and otherwise employed.

July 15th.—Received $13\frac{1}{2}$ tons of coals, and at 11.30 A.M., proceeded to

sea, wind north, fine weather, difference of compasses $1\frac{1}{2}$ points, steaming $8\frac{1}{2}$ knots.

July 16th.—Daylight, fresh northerly breeze, spoke H.M. steamer "Firefly," bound to Falmouth; at six got a pilot, and at eight moored at one of the buoys off the custom house, Lisbon.

July 17th.—Fine weather, received on board 10 tons of coal, all that could be got, filled the water up, and got ready for sea.

July 18th.—Daylight, cast off and proceeded in charge of the pilot, at 8h. the pilot left. Moderate, N.E. breeze and fine, steered S.S.W., difference of compasses $1\frac{1}{2}$ points. At 8 P.M. passed Cape St. Vincent distant one mile, steered S.E. $\frac{1}{2}$ E., on changing the course found the difference in the compasses to be $1\frac{1}{2}$ points,—midnight fine.

July 19th.—Daylight, light S.E. breeze, steaming $8\frac{1}{2}$ knots. Noon, latitude observed, $36.41 N.$ fresh breeze, and a heavy head sea, at 2 P.M. off Cadiz. At 8 P.M. strong breeze, steaming 6 knots. Midnight, more moderate.

July 20th.—At 2 A.M. came to an anchor in Gibraltar Bay. Noon, fine. At 1 P.M. went alongside of the new Mole, and commenced taking in coal, at 5 P.M. hauled off to make room for H.M. steamer "Medea."

July 21st.—Employed cleaning the boilers, flues, filling water, &c. At 5 P.M. hauled alongside of the Mole.

July 22nd.—Daylight, taking in coal. Noon, got the steam up,—52 tons 8 cwt. of coal on board,—Mr. Galloway, engineer, joined as passenger for Alexandria. At 2.15 P.M., cast off from the Mole, and proceeded to sea, strong S.E. breeze and heavy head sea, steering E.S.E., difference of compasses $1\frac{1}{2}$ points.

July 23rd.—Daylight, strong breeze from the S.E. and heavy head sea, steaming 5 knots. Noon, latitude observed $36^{\circ} 27' N.$, difference of compasses $1\frac{1}{2}$ points. Midnight, more moderate.

July 24th.—Daylight, fresh S.E. breeze and fine weather, steaming $6\frac{1}{2}$ knots. Noon latitude observed $36^{\circ} 15' N.$, difference of compasses $1\frac{1}{2}$ points. Midnight, saw the land.

July 25th.—Daylight, passed the city of Algiers, steering along the coast.

Noon, off Cape Binguet, light breezes and calm, steaming $7\frac{1}{2}$ knots, difference of compasses as yesterday.

July 26th.—Light breezes and fine. Noon, off Cape Ferro, distant $\frac{1}{2}$ miles, spoke a French steamer of war from Bona, steaming $7\frac{1}{2}$ knots, difference of compasses as yesterday.

July 27th.—Light airs and calms. Noon, Zembra Island distant 4 miles, steering S.E. $\frac{1}{2}$ E. difference of compasses $1\frac{1}{2}$ points, at 10 passed Pantellaria, steaming 3 knots.

July 28th.—Daylight, calm and clear, steering S.E. $\frac{1}{2}$ E., at 9 A.M., saw the island of Malta. Noon, spoke the "Black Eyed Susan," from Liverpool, out 28 days. At 3 came to, at one of the buoys in the quarantine harbour.

July 29th.—In quarantine at 3 P.M. Pratique.

July 30th.—Daylight, hauled alongside the Mole, took 22 tons 15 cwt. of coal and filled the water up; at 5.30 P.M. received on board the Indian mail, by order of Admiral Sir Thomas Briggs; 9.30 P.M. proceeded to sea, steered S.E. by E., light breeze and fine.

July 31st.—Light airs and fine. Noon, latitude observed $35^{\circ} 22'$ N., steaming $7\frac{1}{2}$ knots, difference of compasses $1\frac{1}{2}$ points, course S.E. by E.

August 1st.—Daylight, light northerly breeze, steering S.E. by E. Noon, latitude observed $34^{\circ} 22'$ N., steaming $7\frac{1}{2}$ knots, difference of compasses $1\frac{1}{2}$ points.

August 2nd.—Light N.W. breeze all sail set, steaming 8 knots. Noon, latitude

observed $33^{\circ} 23'$ N., difference of compasses as yesterday, course N.E. by E.

August 3rd.—Daylight, moderate N.W. breeze and fine, all sail set, steaming S.E. by E. $\frac{1}{2}$ E., 8 knots. Noon, in sail, latitude observed $32^{\circ} 19'$ N., calm. At 4 P.M. stopped the engine and put the fires out, cleared the boilers from salt, at 8 P.M. got the steam up, difference of compasses as yesterday.

August 4th.—Daylight, fine weather, saw the land off Point Fanhoob, steaming 8 knots. Noon, latitude observed $31^{\circ} 16'$ N., course S.E. by E. $\frac{1}{2}$ E., at 9 P.M. sounded in 11 fathoms, hove to for the night.

August 5th.—Daylight, steered S.E., and at 8.30 A.M. came to anchor in Alexandria.

MEMORANDUM.

During the voyage from Liverpool I did not find that the compass, raised from the deck, was affected by the iron about the vessel, the course was given to the steersman by the one in the binnacle allowing the difference; and in two subsequent voyages to Candia and back, I had not the least difficulty in navigating the vessel: on each voyage to Candia we had a strong gale from the N.W. against which we made headway at 5 knots per hour.

The distance from Liverpool to Alexandria, calling at Oporto, Lisbon, Gibraltar and Malta, is about 3,300 miles, and the time actually occupied in steaming was 436 hours.

DONALD CLARKSON, Commander.

LIGHTNING CONDUCTORS.

MR. EDITOR,—Mr. Rous's communication in your last number, respecting the employment of a rope of wire as a defence against lightning on ship board, in his opinion equally efficacious, and more simple than the system proposed by me, and partially adopted in her Majesty's navy, merits attention.

In treating of this interesting question, it is essential to remember an important fact, commonly disregarded, namely, the masts of ships are, to a considerable extent, conductors of electricity; by their necessary position in the body of the hull, they determine the course of the electric discharge when it falls upon them in that direction; and although it cannot be denied, but that the application of a small rope of wire such as that alluded to, may possibly avert much mischief by increasing very greatly the conducting power of the general mass, yet there is good ground for believing, that in every instance of an

electrical discharge falling on the mast rigging, and wire; a considerable portion still passes upon the hull, more especially if the quantity be so great as to raise the temperature of the metal, and thus increase the resistance in that direction. A lightning conductor therefore on ship board, such as that mentioned by your correspondent, is still but a substitute for conductors of large electrical capacity deemed requisite for the defence of important buildings on shore, e. g. St. Paul's cathedral, and to which it must be considered greatly inferior.

Admitting, however, its protecting power, in certain cases and under certain circumstances, still it is attended with many great disadvantages. The difficulty, for example, of preserving at all times such a wire in place, over an outrigger from the ship's side, is quite obvious. It is not at an anchor in a smooth sea, that we must view the application of a wire rope thus easily rigged out from the mast head, but we must consider its state in gales of wind at sea in a dark night. Liable then to every species of injury incidental to a ship's rigging, it is always exposed to the chance of becoming detached or broken by the many powerful forces brought against it: should it be found requisite to remove the higher masts, or should these be carried away, the handling and replacing of such a rope must necessarily be attended with considerable risk to the seamen, more especially if its connexion with the water be rendered imperfect; if it become broken high up in the rigging the results would be equally dangerous. In the case of the American ship, *Juno*, lately put in here to repair damage from lightning on her voyage from Havre to New York: the electrical agency came down over the chain topsail sheets, whilst the seamen were handling them, and killed two men on deck; it did considerable damage to the vessel, and started off the butts of several planks just below the water-line. A similar case happened on board the *Lion*, of sixty-four guns, in the year 1793, when a discharge took place, through a chain conductor, which struck one of the quarter-masters down on the deck. In fact the application of such conductors as these, being left necessarily in the hands of persons not generally familiar with the principles of their action, they are very often either imperfectly applied, or not set up at all. It is by no means uncommon in her Majesty's ships in ordinary, to find their lower extremities coiled up and tied to the rigging to prevent the links from being either stolen or carried away by boats.

All these circumstances become further complicated, by the necessity which exists for applying the conducting rope to each mast; since an electric discharge from the atmosphere may be so circumstanced, as to become either divided upon the whole, if the conductor be of small capacity, or otherwise, strike upon one of them not having the conductor. But surely the application of three ropes of wire, loosely suspended in the rigging, and sustained by outriggers over the side, is not

very consistent with the circumstances under which a ship may become placed.

It may be further observed, that since the application of any form of conductor to a ship's mast, is merely with a view of increasing the conducting power of the general mass, it follows, that in no way can we apply such a conductor so efficiently, and with so much success, as to the masts themselves, in the way I have proposed. It will be found, for example, that a fine metallic wire may become fused by a given quantity of electricity, when loosely suspended in the air; whilst, if inserted along a cylinder of wood, it remains perfect, being assisted by the conducting power of the wood. By applying the conductors to the masts, therefore, we turn the conducting power they already possess, to good account. By uniting the conductors on the masts, and the masses of metal in the hull, in the way I have proposed, into one great system, and finally connecting the whole with the sea, we provide effectually for the perfect restoration of the original equilibrium of distribution throughout the vessel, an effect quite lost sight of confining our attention solely to the mere effect of a small wire to the rigging. It is a well-known fact, that in cases of electrical accumulation in the atmosphere, the induction upon the ship, as part of one of the great electrified surfaces, is considerable, so that its electricity becomes displaced, and again returns at the instant of the neutralization of the opposite forces.

I have very much pleasure in replying to Mr. Rous's communication; he has in no way mis-stated my views, or dealt unfairly by me. I cannot, however, yield to his proposition, the claims of greater simplicity, or equal efficacy. It is surely more simple to have a mast already a perfect conductor, and not requiring on that ground any care or attention, than obliged, on every slight occasion, to watch and provide for an application external to the mast; frequently a source of considerable annoyance to the seamen, and for efficacy, I must refer to the former papers in your valuable work. It is evident that for nearly a century, buildings on shore have been effectually defended from lightning, whilst ships have, during the same time, experienced the most frightful danger. This alone is sufficient to show, that some more permanent form of conductor than that proposed by Mr. Rous, is absolutely called for.

Mr. Rous will, I hope allow, that in discussing this interesting question, I have studiously adhered to facts, either deducible from actual experience, or otherwise determinable by experiment; I hope he will accept my thanks for the candid and courteous style of his communication; and believe, that I by no means desire to slight his suggestion. In conclusion, I may once more observe, that the advantages of my system are these:—

The conductor on the masts is always in place, and hence ready to

meet the most unexpected danger : it does not require, like a chain or rope, a constant watching and attention, to the great annoyance of the seamen, but takes care of itself. The standing or running rigging is not in any way interfered with, and a very perfect continuity is arrived at under all the varying positions of the mast. It is permanently fixed throughout its whole extent, gives stability to the mast, is continuous from the sea to the mast head, and is connected with an adequate combination of conductors in the hull to satisfy the most powerful discharge of lightning yet experienced ; it is capable of resisting great external force, and, in case of the removal of any portion of the mast, is always perfect, and adequate to the required protection. It has further, the capital advantage of being applied immediately to the objects most requiring it, namely, to the masts themselves, by which the conducting power they possess is turned to a beneficial account.

W. SNOW HARRIS.

CARRICK'S PADDLE WHEEL.

Calton, Glasgow, 9th Dec., 1837.

MR. EDITOR,—With your permission, I beg to state, with reference to my wheel, described in page 822* of your last volume, that, should the expense of screws be objected to for fixing the floats, plain bolts may be used, with a slit and keeper, similar to those by which window shutters are secured ; or, the horizontal bars may be morticed, to receive the respective floats. It will be obvious that, according to my proposed plan, the number of radius-bars in the wheel may be reduced one-half that at present in use, and yet the wheel will be sufficiently strong, owing to the close binding of the rings all round the circumference. This reduction will, of course, in a great measure, counterbalance the weight of the horizontal bars.

It has been remarked, that the description of my paddle is not perhaps so explicit as it might have been. The simplest view of the wheel then, is to suppose the floats of a common paddle-wheel doubled in number, but in place of each being a solid board, they consist of pieces about six inches wide and six inches asunder, their faces radiating from the centre, as shown by fig 2. in my former letter. In short, the superficial contents of one common float, I propose to divide into two floats, or tiers of floats, the respective pieces being arranged as already described.

I am, yours respectfully,

ANDREW CARRICK.

PROVISIONING OF MERCHANT SHIPS.

London, Sep t. 12th, 1837.

MR. EDITOR,—Any person who has perused the accounts of the sufferings of the crews of the vessels which have been detained, for

* No. 11, Nov., 1837.

the two last winters in the ice, must have been struck with the fact that, comparatively, few of the deaths, and little of their sufferings, arose from the inclemency of the climate, (beyond the circumstance of their detention) and the fury of the elements, but that the greater part of the deaths and sufferings, arose from want of provisions. In short that, the want of provisions was a greater cause of death and of suffering, than all other causes put together. That there exists a moral obligation on shipowners to have a sufficient quantity of provisions in their vessels, for the probable consumption of the voyage, there is no doubt. But, so long as there is no *legal* obligation, and whilst a shipowner's interest is in direct opposition to this moral obligation, I fear morality will go to the wall, and interest will preponderate. Allow me to give a short explanation of this. Suppose that I am owner of two vessels, each of the same size, and carrying a crew of say fifteen, or any other same number of men. Now let these two vessels perform a similar voyage, side by side, and return on the same day, each having carried a similar cargo, and earned the same amount of freight. One of them shall have expended a fair and reasonable quantity of provisions, in proportion to the length of the voyage and number of the crew, and the other shall not have expended above half this quantity.

In the event of this paper falling into the hands of any person not acquainted with the system on which our merchant shipping is conducted, it should be explained that, in our merchant ships there is no fixed allowance of provisions, as there is in the Royal Navy, and as there was in the East India Company's ships. But that the quantity of provisions issued, depends very much on the quantity on board, which, since it is the interest of the shipowner that it should be so, and there being no allowance fixed, and no payments for short allowance ever made, is, in general too limited; in short, there is no law on the subject. Now after my two vessels have returned from their voyage, I ask common sense, which of the two masters are the most likely to gain my favour? Is it not clearly he who has made the voyage, and expended the least quantity of provisions and thereby made the most profit to me? Although he may have done this by the free use of the rope's end and handspike, and with his crew in a state of half mutiny for want of a fair and just allowance of provisions during the whole voyage; what have I to do with that? He has still earned the same amount of freight as my other vessel of the same size, and effected a saving to me, of half the amount of provisions, to serve for another voyage. The principle therefore is clear that the shipmaster who can sail his ship at the least expense of provisions, is generally speaking most likely to gain a shipowner's favour.

I perfectly remember when I was chief mate of one of the largest West-Indiamen belonging to the port of London in 1811, after we

had struck soundings on the homeward passage, that the captain asked me whether I knew if the crew and apprentices were going to complain of him, for his harsh treatment of them, to the owner, because said he, "I hope they will, as it will be clear to the owner that the less provisions I have expended on the voyage, the more I have attended to his interest, and the more I will get into his favour," and this was strict truth. I may here state, *en passant*, that this ship was in a state of half, and sometimes of whole mutiny, for want of a fair and reasonable issue of provisions to the crew, during the whole voyage from and to Blackwall Dock, and that although I was chief mate of her, and no glutton, a word which was continually in the captain's mouth, as if he could, by the free use of it, satisfy the cravings of hunger, and frighten the crew from asking for a reasonable allowance of provisions, that I frequently could not get enough to eat in moderation.

I quite agree with your able correspondent "The master of a British merchant Ship," who I observe attributes the greater part of quarrels which take place in merchant vessels, and the very defective discipline in them, to the want of a proper fixed allowance and issue of provisions, and I observe that your correspondent "Nearchus" is of the same opinion. But it may be said, if a crew be starved, they cannot perform their work, or will become so disaffected at their treatment that they will not perform it, and the vessel may be lost in consequence, and hence this will be against a shipowner's interest, and he will never employ or countenance a captain who would do so. A word of explanation goes to this. If I understand your correspondent "Mr. Ballingall's" exposition of marine insurance, aright, he says that a shipowner generally has his freight insured, and his vessel, almost always to the full value; so that although the vessel should be lost by the inability or refusal of the crew to do their duty, the shipowner would not lose anything, as he would be paid the freight and value of the vessel by the underwriter, who, as he says, charges these expenses to the public in the price of the articles carried. If the vessel arrives safe, a clear gain is effected to the owner, in proportion to the quantity of provisions saved. Following out Mr. Ballingall's hypothesis, it appears to me to be thus: If I am owner of a horse value 10*l*., which is uninsured, and I starve it to death, I have clearly lost 10*l*.. But if it be insured, and I can get 10*l*. for it, although I should starve it to death, I shall probably become indifferent whether I starve it to death or not. But if the horse has broken its leg, and be incapable of doing its work, but I can still insure it for 10*l*., without any questions being asked, it clearly becomes my interest to starve it to death, and I will probably do so accordingly, and get £10 for it, with which I can buy another horse capable of doing the work and earning money for me. I will be the more inclined to do this, if I can insure

the hire for labour to be performed by the horse with the broken leg, and consequently will receive the hire also from the insurer, whether the labour has been performed or not. You will observe I have made the starving of the horse to death a voluntary act of my own, and completely dependent on my own will. Horses are subject to be drowned, or burnt to death, or break their legs, but still I am not aware that it is customary to insure against these accidents, any more than it is customary to insure mail, stage, or other coaches, against the accidents to which they are subject.

In further illustration of this principle, one shipowner sends a vessel to sea of a certain size, with say fifteen men; another sends one to sea of the same size and on a similar voyage with only fourteen men, and thus saves one man's provisions and wages; a third sends a similar vessel, on a similar voyage with only thirteen men, and thus saves two men's provisions and wages, and a fourth sends one with only twelve men, and thus saves three men's provisions and wages, and so on they go, reducing the number of men till at last a vessel is fairly lost for want of men to navigate her. But does the owner suffer no loss by this? No. The freight was insured, and also the vessel to her value, and although she has been lost, and it may be ten or a dozen human beings drowned in her, the owner has by means of insurance, suffered no pecuniary loss whatever, but receives the freight in full, and payment for the vessel in full, with which sums he may purchase another vessel, in every way superior to the one lost, and there will be no want of seamen to navigate her, and probably to meet a similar catastrophe!

The preceding, I understand to be Mr. Ballingall's theory of marine insurance, and whether it be correct or not, it does not become me to say, and I fear I have wandered too far from the subject of provisioning merchant ships. As there is no law on the subject, and it is quite proverbial with Jack, that, "he who eats most and drinks most, gets most by the voyage," it is in general the master's look out for interest's sake, that each and all of the crew shall get as little to eat on the voyage as possible. There is no disproving the fact that, the shipmaster who can conduct his vessel with the least expenditure of provisions, in proportion, to the number of the crew, will, humanly speaking, always get most into favour with a shipowner. This is exactly holding out a premium to the greatest rogue, in preference to the well disposed man of a shipmaster, and the system holds out the greatest premium by means of the greatest profit, to the penurious, illiberal and unjust shipowner, over one of an opposite character, who will not consent to make money by starving the crews of his vessels. But it is high time a stop was put to this iniquitous system, which rewards the rogue, and punishes the honest man with loss of property. A scale of provisions ought to be fixed by law for our merchant ships,

as well as for our ships of war, and made obligatory on the vessels before being cleared at the Custom House, either at home or abroad, to have a sufficient quantity of them on board for issue, in proportion to a reasonable length of passage for the voyage about to be undertaken. What should at once remove all scruple by any honest shipowner against such an enactment, is the fact that, if the provisions were not expended in one voyage, they would answer for another, and such an enactment would put the honest and well disposed shipowner, on the same footing as those who might be otherwise disposed, by making them alike subject to one law. And it would be the means of preserving the lives of many of our seamen, in similar cases to those, where there can be no doubt they have been lost for want of provisions to sustain life. It would not only take away one of the principal causes of quarrels, disputes, and defective discipline in our merchant ships, since there is no reasoning with a hungry belly, but it would further remove a continual source of disagreement between shipowner and shipmaster, and be doing only justice to the honest man. Such an enactment is in truth as much wanted in our coasting, as in our foreign trade, and cannot be made too soon.

It seems, however, to be in vain to expect shipowners to move in the matter, and since we know what was the principal cause of the mutiny in the Royal Navy, and which grievances, "Nearchus" says, would not have been remedied at this day, without the mutiny, let us hope that we will learn wisdom by experience, and prevent such a crisis happening in our mercantile Navy, as he has so broadly hinted at, and which by your law reports, and the Thames police reports, seems almost to be attained, and which if not prevented in time, will assuredly soon happen. And who can blame seamen? Are they not, in point of provisions treated worse than a shipowner's horse or cow, the property of which is invested in himself, without being insured, and which he knows full well, if he starves to death, he will lose the value of? I think some bill was brought into parliament on this subject lately, but like Buckingham's mercantile marine bill, I presume it was *burked* by those who considered it to be against their interests. In all large bodies of men, such as the British Army and Navy, in the East India Company's military and naval service, in charity schools, colleges, and hospitals, for the maintenance and education of youth, in hospitals for the support of the aged, in prisons, almshouses, poorhouses, &c., &c., there is a fixed allowance of provisions, and it is imperatively necessary for the well conducting of our merchant ships, that there should be a proper fixed allowance of provisions to the seamen who navigate them. This ought to be made as obligatory on the owner, by law, as payment of wages. It is in fact at present an implied obligation, but the quantity not being defined, it is not exigible by law, nor is payment for short allowance. When left to a moral instead of

a legal obligation, it is sure to be, and is, in fact, abused. That there is no difficulty, except the want of inclination in the proper quarter, to carry such a measure into effect, is proved from the fact that when government paid a bounty to the whale ships, it required them to carry a proper quantity of provisions in proportion to their crews. When a regulation respecting a proper allowance of provisions take place, I would recommend some attention at the same time, to be paid to the accommodations of the crews, which are often from cupidity, worse than pig sties, especially if the pigs are uninsured. And ships should also be obliged to carry a just and reasonable quantity of water for the voyage. But these things will never be put to rights without a legal enactment.

These sentiments are from one who has served an apprenticeship to the sea, and has been more accustomed to use the serving-mallet, marlinspike and tar brush, the samson's post, double screws, and crow-bar, than the pen, and whose fingers have not yet got the better of the crook which they received from heavy loads of hard work in their youth. Should there be anything not ship shape and Bristol fashion in it, fit to meet the public eye, as I am unaccustomed to appear before the public, will you, Mr. Editor, be so good as to correct it, and to square its yards by the lifts and braces, and give it a berth in your valuable magazine, which, by so ably advocating the merchant seaman's cause as it has done, has proved itself to be his true friend, and I trust is as well supported by merchant seamen as for their own sakes, it deserves to be.

I am, &c.,

E. S.

HARBOUR IN TOOTOILLA ISLAND.—*Navigator's Group, Pacific.*

THE following useful directions for ships visiting the Navigator's Group, are from the Sydney Herald, having been recently reprinted in that valuable paper, the London Shipping Gazette. In repeating them in our pages, we take the opportunity of pointing out to the commanders, and officers of British merchant shipping generally, the great advantages that strangers would derive from a survey (even a rough one) of these unknown harbours. An afternoon devoted to such a purpose, would be amply sufficient, and they might be assured of their work being speedily published and diffused for the benefit of their brother seamen through the medium of this journal by forwarding it to the editor at the Admiralty, free of expense, a measure easily adopted on the arrival of ships in the port of London. In the present instance, a sketch of this harbour would have been most acceptable, and would have rendered the sailing directions of Captain

Stewart complete, for we know less about the Navigator's Group, than we do of others of far less importance in the Pacific Ocean.

“ TO THE EDITOR OF THE SYDNEY HERALD.

“ Sir,—Having lately visited a very fine harbour in the island of Tootooilla, one of the Navigator's Group, and not being aware of its being generally known, I will give you a description of it for publicity, although it has been visited by two other English whalers before me. The harbour lies about ten or twelve miles to the west of the easternmost point of Tootooilla on the south-east side ; it is formed between two high bluffs, or rocky cliffs. About four miles off shore from the eastern bluff lies a shoal with seven fathom water on it ; it appears to run along shore to the eastward, in a line with the island of Tabootaboo. On entering the harbour you must steer for the weather bluff, as there is a sunken rock lies nearly in the mid channel, between the eastern bluff and the small island that you will have on your larboard beam ; then run along the weather or eastern shore until you have another small island well open on your larboard bow ; then edge over towards the small island, as there is another sunken rock that lies abreast of a native village, that you will then have on your starboard bow ; there is no danger off the island but what is seen. After you have passed the small island you will see a native village on your larboard hand, for which you can haul in and anchor abreast of, in eighteen or twenty fathoms water, or you may run to the head of the harbour, and anchor in five or seven fathoms water ; it is all good holding ground of blue clay, is sheltered from all winds, being completely land-locked, and as smooth as a mill-pond, and in which about twenty-five vessels may anchor with safety, and have room enough to swing clear of each other : there is an ebb and flood tide, with a rise and fall of three or four feet, but it never runs strong enough to make you swing to it. There are two or three good watering-places, with excellent water, and wood is plentiful anywhere along the shore ; by making the native chiefs a small present, they will cut your wood, load your boats, fill your water casks, and roll them down to the beach.

“ There are two Church of England missionaries there, who have been landed about two months. They wished me to name the harbour, but I declined ; as one of the ships which was first there was expected back, and intended naming it. By making this generally known, it will be of the greatest advantage to whalers cruising off there, as they frequently have to get water at the Navigator's islands, and many water casks, boats, and even men's lives, are lost in rafting off water through the heavy surfs that are frequently there. It would be as well, until the harbour is surveyed, to send a boat's crew to

These sights were taken on the 24th December, 1835, in latitude 10° north. The error of chronometer was 3h. 15m. 10s. slow on Greenwich mean noon, and its daily rate was 2·53s. losing.

[This method is by no means new, having been used by Captain W. Owen, several years ago; but Mr. Tonkin has done perfectly right in calling attention to it.—Ed. N. M.]

SIERRA LEONE.

MR. EDITOR,—In your November number, there is inserted an article entitled “A Word on Sierra Leone,” in which that colony is spoken of unjustly.

Your correspondent says nothing regarding the unhealthiness of Sierra Leone, which he might have done with truth, but confines his attack to three points, namely:—

First. That Sierra Leone is becoming a depot for British manufactured goods, to which the Americans resort, in order to supply themselves with the necessary articles for carrying on their coasting trade. Surely this ought to be rather a ground for satisfaction than complaint.

Secondly. Sierra Leone is charged with being a millstone about the neck of England. Let us look at the facts. By the papers laid before parliament, in the year 1835, it appears that Sierra Leone, and the Gambia, cost Great Britain 40,761*l.*, including every expense, civil or military. Now the Gambia requires about 10,000*l.*, which leaves 30,000*l.* for the millstone. But that is even too much, as part of it is required for the recruiting establishment, kept up to supply the negro regiments in our West Indian islands. It may indeed, with justice be said, that a sum under 30,000*l.*, expended upon a place which affords no opening to British commerce, is a great waste of money. Let us return to official documents. Taking the average of six years, ending with 1835, the real, or declared value of British manufactures exported to the Western coast of Africa, amounted to 287,000*l.*, of which, nearly 100,000*l.* went to Sierra Leone. Besides which, we re-exported to this possession, colonial articles to the amount of about 70,000*l.*

Now let us see what England receives from this colony. In 1831, 23,677 loads of timber, the market price of which was 7*l.* 10s. per load; and other articles amounting to the official value of about 50,000*l.* This does not include gold dust, the quantity of which the parliamentary papers do not show; but, I believe, the yearly average is about 15,000 ounces. I shall conclude this part of the subject, by stating, that having compared the amount of British shipping employed by Sierra Leone with other colonies, I find it nearly the same as St. Vincent; but the expense to England of that fine island is not only greater, but its market for British produce is less.

The third, and last charge against this establishment, is being a "Whistle of the Saints." That expression evidently alludes to the fact, that Sierra Leone was not added to the British dominions merely for profit, but for the nobler purpose of being a nucleus, from which civilization and the Christian religion might be spread through the continent of Africa. It cannot be necessary, in these enlightened times, to vindicate such intentions; although I am ready to allow, that until lately, these plans have been partially frustrated through mismanagement. But there is now every reason to believe, that since this colony has been thrown more upon its own resources, that the benevolent objects of the founders will be fully realized. In corroboration of which let me refer your readers (who may be at all interested upon this subject) to the official papers laid before parliament since 1829, to Leonard's Voyage to the West Coast of Africa, published in 1833, to a work entitled "Sierra Leone, or the White Man's Grave, 1835;" to the accounts already sent home by Captain Wauchope, (at present in command of H. M. S. Thalia,) from whom we are in expectation of receiving further details, and whose impartiality, and general attainments, will suit him for giving the necessary information.

W. R.

REPORT ON THE RIVER DEE AND PORT OF CHESTER,—By *Sir John Rennie.*

[Historical account of the river-works executed, and in progress, their effects on the river and port of Chester, its present state and navigation.]

WITH regard to the first. The Dee is the principal river in Cheshire, and takes its rise in the lake of Bala in Merionethshire, North Wales; and after pursuing a northerly and north-westerly course, passing by the towns of Corwen, Llangollen, Overton, Holt, Worthenbury, Malpas, and receiving the Alyn and several other tributary streams, reaches Chester, after a course of about fifty miles; at a short distance below which city it enters a capacious estuary about twenty-four miles long, and four to six miles broad, and joins the Irish Sea, bounded by the point of Ayr on the south, and Hilbre Island on the north. This river, like all others, is subject to floods; but, inasmuch as it passes for the most part of its course through a mountainous country, the floods are necessarily more frequent and sudden, and at times increase to such an extent as almost to impede entirely the passage of the current of the flood tide. From the rapid and unequal fall of the river throughout the greatest part of its course, and its frequent interruption by cascades and rapids, it is for the most part unfit for navigation (with the exception of some of the intermediate still pools) until it reaches Chester, and serves chiefly for the discharge of the drainage waters of the country, and for working mills, for which purpose weirs have been erected in various places.

Before proceeding further, it will be highly curious and interesting to refer back to the history of the ports.

The peculiar advantages of the situation of Chester attracted notice in the earliest periods of British history. The Romans made it one of their principal stations, so that, to use the words of an early writer,* "It was made the receptacle of merchandize from all kingdoms and nations who traded into the British or Irish ocean, and became the very key or inlet whereby not only the Romans in their time made their passage to and from Ireland and the other western and northern islands, but all 'other kings and princes ever since upon all needful occasions.'" Chester continued to increase in importance, and became the capital of this part of the kingdom, and at times a royal residence. In consequence, however, of the inefficient state of the port, its prosperity began to decline; for, as far back as the reign of Henry VI. it had become so inadequate to the trade, that it was necessary to construct a quay at Shotwick, about six miles below Chester, where large vessels discharged their cargoes, and sent them in lighters to Chester, and in like manner received their loadings in return. Still, however, the prosperity of the port continued to decline; and during the reign of Elizabeth, a new haven or quay was constructed lower down at Parkgate, which took its origin from thence, and became the principal port of communication with Ireland.

The distance of Parkgate (12 miles) from Chester, and the inconvenience and expense occasioned thereby, at length roused the attention of the public; and in 1674, Mr. Andrew Eforranton, well known by his book on England's Improvements by Sea and Land, took a survey of the river Dee and its estuary, and formed the project "of a new channel, and for receiving from the sea a large tract of valuable land, and for restoring the ancient navigation even to the quays at Chester, which was presented to the Duke of York, at that time the patron of all great undertakings. An act of parliament was accordingly obtained for the recovering and preserving the navigation of the river; for settling duties on ships, and for establishing two ferries for the convenience of travellers into the county of Flint. Other acts were subsequently obtained in the years 1732, 1740, 1743, and 1752, and the works were begun with vigour. The project was carried on by subscription, and the adventurers were to be rewarded by the lands they were empowered to gain on both sides, from the white sands on the sea below Chester and between the county of Chester on the north side, and the county of Flint on the south side, being sands, soil not bearing grass. The expenses proved enormous; multitudes were obliged to sell out at nearly ninety per cent. loss; at length the plan was brought to a considerable degree of utility, and a fine canal formed and guarded by vast banks, in which the river is

* See Ormerod's History of Cheshire.

confined for the space of ten miles, along which, ships of 350 tons burthen may be safely brought up to the quays." The misfortune of Chester, about this time, gave rise to the prosperity of Liverpool, then a very inconsiderable place, which thenceforth increased in importance, until now, when it forms as it were the grand capital and emporium of trade of the north of England. The works for the improvement of the Dee and Port of Chester, as sanctioned by the foregoing and subsequent acts, have proceeded with more or less vigour ever since. The last work of any importance was the extension of the Rubble Embankment from near Connah's Quay to about half a mile lower down, which took place about fifteen years ago. Since then, I understand, little has been done, except placing a few jetties here and there between Chester and Flint, in order to confine the current and increase the scour. The Dee Company, I believe, originally agreed, or rather engaged, to maintain sixteen feet always at high water of ordinary spring tides, at Wilcox Point, Chester. This was subsequently altered to fifteen feet; and accordingly, a gauge or standard has been erected for that purpose, near the entrance of the Ellesmere Canal. It appears, however, that they have not been able to maintain above fourteen feet, or fourteen feet six inches. The total quantity of land embanked from the estuary is upwards of 4,000 acres, (besides a large tract of unenclosed salt grass,) which is now under tillage and is very valuable.

The effect of the works above mentioned, has, I am informed, been to increase the depth of water between Flint and Chester, and to enable larger vessels to come to Chester than previously. From thence, however, downwards, towards the Point of Ayr, it does not appear that any particular improvement has taken place; on the contrary, the great flats off Bagillt and Parkgate have materially increased, and the low water channels at these places have suffered in proportion, particularly at the latter place; for where there used to be eighteen feet low water, there is now an extensive shoal, extending almost across the estuary at low water, so that it is unfit for vessels or boats of the smallest class; whereas, formerly it used to be one of the principal stations for the packets between England and Ireland. One of the chief causes of this was, no doubt, the diversion of the channel from its natural course on the Cheshire to the Flint shore. Had the channel been continued there, and proper means been taken, the depth at Parkgate would have been increased rather than have diminished. The company must have had some reason, which does not appear, for adopting this course. It is quite clear, however, that as far as the river is concerned, the measure was not quite so complete as it might have been; for not only is the course lengthened nearly five miles, but four most inconvenient angles or bends are produced, which add materially to the friction and consequent impedi-

ment of the scour of the waters, both tidal and fresh. But, inasmuch as the main set of the flood tide coming from the Irish Channel naturally sets on the Cheshire shore, and on the ebb takes the same channel, although in an opposite direction, and under present circumstances each of them must bend back again almost at right angles before it can enter or leave the new channel, which is on the opposite, or Welsh shore: thus, a further most serious obstruction to the tidal and fresh waters is created; and, moreover, as the preservation of the sectional areas of all channels depends on the quality of water passing through them, it may reasonably be inferred that the channels below Flint and Parkgate have suffered to a certain extent, in consequence of the abstraction of the large quantity of tidal water by the embankment of 4,000 acres above mentioned, from the estuary, and over which the tide used formerly to flow, although the new channel between Flint and Chester may be said to have improved. Upon the whole, therefore, it may be inferred that although the measures undertaken according to the acts above mentioned have not been altogether so injudicious as they might have been, nevertheless, vessels of a larger class than previously, are able to reach Chester at spring tides; but the navigation is still far from being what it ought to be, or is capable of being made.

I will now proceed to describe more in detail the actual state of the river. From the survey of Mr. Rennington, it appears that an extreme neap tide only rises 2ft. 9in. at Chester Bridge; 3ft. 7in. at the Ellesmere Canal Lock; 6ft. 9in. at King's Ferry; 10ft. 11in. at Flint; and 11ft. 4in. at the Point of Ayr. Thus showing a greater rise of 8ft. 2in. at Flint than at Chester Bridge, and 8ft. 7in. greater at the Point of Ayr, 24 miles distant. The object of giving an extreme neap tide is to show the defect of the navigation as regards taking large vessels to Chester. The depth at low water at neaps and springs is nearly the same between Chester and Flint; but from thence to the outer bar, there is a material difference, there being a much greater depth at low water of neaps than of springs, in consequence of the tide not ebbing so low. Again; the rise of spring tides is 13ft. 8in. at Chester New Bridge; at Ellesmere canal entrance, 14ft. 8in.; King's Ferry, 17 feet 6 inches; Flint, 23 feet 11 inches; Point of Ayr, 29 feet 6 inches. Thus showing a greater rise at Point of Ayr, of 15ft. 10in., and 10ft. 3in. at Flint than at Chester Bridge. The proportion of the above will no doubt be materially affected by different winds and freshes: for example, southerly and westerly winds produce the highest tides, and *vice versa*, northerly and easterly winds cause the lowest ebbs. When there is no fresh in the river, still, however, the difference in the rise of tide at the respective places above-mentioned generally bears about the same proportion, uninfluenced by these circumstances. Again; the greatest depth at low water at Chester Bridge varies from six to seven feet; but from thence to the

Ellesmere canal entrance, two to six feet; from thence to the King's Ferry, from 1ft. 6in. to 4ft.; thence to the end of the Rubble embankment, from four to five feet; thence to Flint, 1ft. 6in. to 2ft. 6in.; thence over Bagillt Bar, from 1 to 2 feet; from thence to Chester Bar, 19 to 48 feet; and upon the bar, 12 feet at springs, and 20 at neaps; and in Hilbre Gap, 11 feet at springs and 19 feet at neaps.

The area of the river at the following places is:—

	Low water.	Tidal.	Total.
Chester Bridge	1,128	2,760	3,880
Ellesmere Canal	1,720	4,039	5,760
King's Ferry	900	5,808	6,798
Rubble Embankment	3,465	82,801	86,866

Again; it is high water at the Point of Ayr 15 minutes before at Flint; twenty minutes before at King's Ferry; 26 before at Ellesmere Canal entrance; and thirty before Chester Bridge.

On comparing the charts of the River Mersey and the Dee by Messrs. Evans and Denham, it appears that it is high water at the Point of Ayr 10 minutes earlier than at Formby; and thirty minutes earlier at Formby than at Liverpool. Therefore, as the difference between the Point of Ayr and Chester is only thirty minutes, it follows that it is high water there ten minutes earlier than at Liverpool; and when it is considered that the Point of Ayr is situated fourteen miles nearer to the Atlantic than Formby, and that the great strength of the ebb tide coming out of the Mersey must check the flood, there is every reason to believe that this is not overstated.

High water mark of spring tides at Chester Bridge is rather higher than at the Point of Ayr, forming nearly a regular inclined plane between the two places; but at neaps the two marks are nearly level: this is no doubt occasioned by the backing up of the fresh water, combined with that of the tide.

The average velocity of the flood current of spring tides is four miles per hour, between the Point of Ayr and the entrance of the new channel: from thence to Chester it is six to seven per hour; at neaps between the Point of Ayr and the new channel, the velocity is about $1\frac{1}{2}$ miles, and from thence to Chester, two miles. Immediately above the old bridge at Chester, the dam or causeway for the purpose of supplying water power for the Dee Mills is situated. "This dam was erected by the Earl of Chester, Hugh Lupus, who also made a diversion in the course of the river, and brought it nearer to the town previous to the conquest. Henry III. becoming Earl of Chester, the mills reverted to the crown, and were attached to it until Edward VI., and in the sixth year of that reign, they were granted in fee to Sir Richard Cotton, and subsequently to his son, who again let them at 100*l.* per annum to Edmund Gamul, who afterwards expended 4,000*l.* on the repairs of the dam or causeway, a con-

siderable sum in any case, and more particularly so at that early period. In the following century (17th) the dam or causeway became a subject of much litigation, in consequence of its supposed prejudicial effects on the river, by its preventing the free access and discharge of the tidal and upland waters, and thus preventing them from cleansing and scouring the harbour from the accumulating sands."* It does not appear whether any alteration was made in the wear or causeway in consequence of the above litigation; whether it occurred or not, the wear or causeway still exists, and is now united in one proprietor. The history of these works is highly curious and interesting, as it serves to illustrate the views taken in this department of civil engineering at that early period; also as an epoch from whence may be dated any alteration in the river below. Spring tides now pass over this wear, to the height of four feet, during which period the operation of the mills necessarily ceases: the same takes place during fresh water floods to a certain extent.

From the above description of the river, it is evident that the navigation is in a very defective state, and with the exception of a very short period at the height of spring tides, vessels drawing above six or seven feet water cannot reach Chester. The navigation may be divided into three parts. The first commences at the outer bar, situated four miles to the south of the Point of Ayr, opposite to Prestatyn, and is close to the shore: this channel bears E. and W., and is bounded on the sea side by the great bank of West Hoyle. At low water of spring tides, it varies from about two miles to one mile in width, having twelve feet over the bar, and increases to twenty-four and seventy-two feet at the Point of Ayr; from thence it is divided into two channels by the Salisbury Bank, having a general bearing of N.W. and S.E., the north channel leading to Dawpool, and the south by the Wild Road to the Welsh Channel. The former bears S.E. and continues to Dawpool, varying from twenty-four to six feet at low water of springs, and the latter bearing S.E. by S., varying from forty-eight to nineteen feet at low water of springs, until it reaches Bagillt Flats, where there are seven feet and two feet over the bar. There is also another channel bearing N. and S., called Stilbie Swashway, which communicates with the Mersey, and forms the northern entrance to the Dee, having eleven feet at low water of springs over its bar, where it communicates with the Mersey Channel. The distance from Dawpool to the Point of Ayr is six miles, and from thence to the outer bar four miles further, or ten miles from Dawpool. The distance of Bagillt Bar to the point of Ayr is $7\frac{1}{2}$ miles, and $11\frac{1}{2}$ miles from the Outer Bar. The second division extends from Dawpool and Bagillt Flats to Connah's Quay, a distance of eleven miles

* See Ormerod's History of Cheshire.

from the former, and $8\frac{1}{2}$ from the latter; upon leaving Dawpool it is half a mile wide, twenty-three feet deep, bearing S. and by E.; from Bagillt flats to Flint, it bears S.W., and decreases from one mile to 100 yards wide, and from twenty-three to three feet deep; from thence to Connah's Quay, it first bears E. for two miles, then S. for two miles, and decreases from three to two feet deep, with a width of about eighty yards at low water. The third division extends to Chester, a distance of $8\frac{1}{2}$ miles, bearing S.E. for six miles, and E. for a mile and a half, and one mile S. by E., varying from one foot six inches to five feet deep, and ninety to 120 yards wide at low water. Taking, therefore, the first division, a vessel drawing eleven feet water, or 220 tons, could experience no difficulty in crossing the outer bar at low water springs, and by the time she arrives at the entrance to Dawpool, would scarcely meet with any detention, and even here, in the course of a very short time, the rapid rise of the tide would enable her to enter Dawpool. From thence, in the second division, she would reach Flint as fast as the tide would carry her, as there would be sufficient depth of water; but from thence upwards, a distance of thirteen miles by the river, she would scarcely be able to reach Chester the same tide, as the flood would be spent before she could arrive there, and be compelled not only to drop anchor, but take the ground and wait for the next tide. Vessels drawing fourteen or fifteen feet would only be detained a very small portion of the first quarter of the flood before they could pass the outer bar, and the first quarter flood before they could cross into Dawpool, and could easily reach Flint; but here the difficulty and delay begins, for except at extraordinary spring tides, there is scarcely sufficient depth over the shoals and at Chester at high water to enable vessels of this class to come at all, even when assisted by the most favourable circumstances, and by a powerful steam boat, and where they are liable to be detained for many weeks before they can return, so that the navigation between Flint and Chester cannot be termed fit for vessels drawing above thirteen feet at spring tides, and then, are subject to considerable detention during the period of neaps. At neaps, however, there is plenty of water over the outer bar and entrance to Dawpool, so that vessels drawing above fourteen feet could pass without difficulty. But as the tide only rises from three to four feet during neaps as far as Chester, and there is only four feet at low water in the channel, the navigation is not practicable for vessels drawing above seven feet, and with the exception of four or five vessels of 250 tons burthen, belonging to the cheese company, who have a steam boat to tow them up and down the river during spring tides, all the trade of Chester is transported in small crafts, of about seventy tons burden, so that in fact it has dwindled away to, comparatively, little importance.

In consequence of the uncertainty and defective state of the port, the extensive trade which would otherwise have passed through Chester, as the natural channel of communication with the ocean, and from thence to various parts of the world, has found out other channels, such as Liverpool, where it at present finds superior accommodation, and is duly appreciated. Liverpool has therefore become the general emporium of trade for the north-west of England, and every kind of facility, by way of docks, railways, and canals, are continually multiplied around it in all directions, to the detriment of Chester, so as to leave it without a rival.

Naval Chronicle.

THE LATE FIRES IN THE METROPOLIS.—The public journals have recorded the particulars, since our last, of the destructive effects of fire in various parts of the country, but more particularly in this metropolis, among which stand foremost in their ruinous effects, those which destroyed the extensive premises of Davis's Wharf in Tooley-street, and the Royal Exchange of London. We shall not waste our limited space in useless remark, but devote as much as we can to a few short particulars concerning them. On the morning of the 28th of December, the extensive oil and turpentine stores of Davis's Wharf, (the stock 3,000 barrels, besides sperm and common oils, and marine stores,) were discovered to be on fire. Before assistance from engines could be obtained the fire had spread so effectually as to render them useless. A grand and imposing scene ensued. Flames from the oil and spirit rising to a fearful height, followed by volumes of black smoke. An adjacent granary caught fire, and flames communicated to two vessels by the wharf. Land engines and floating engines combating the flames with streams of water. About nine roofs of buildings successively fall in, and tottering walls follow, the oil flowing in burning streams in various directions, till about three in the afternoon, when the fire was subdued. The extent of damage done is estimated at 125,000*l*.

On the 10th of January, soon after ten at night, a fire broke out (it is stated in the captain's room) at Lloyd's coffee-house, at the N.E. corner, opposite the bank, spreading rapidly to the various offices and buildings of the Royal Exchange, which at midnight presented one mass of

flame, rendering every object as visible as at noon-day. Bank-engines, city-police, watchmen and soldiers, busy,—expresses to fire-engine stations, tradesmen removing their effects, thawing hoses of engines, (necessary from intense frost,) and the vast concourse of people assembled, presented a busier scene than ever Cornhill saw before. The fire continued throughout the night, and was not got under until the afternoon of the following day, leaving a heap of black and shapeless ruins. Some few papers of underwriters have been saved. The building, it is said, with the various offices, was insured for 47,000*l*. The business of Lloyd's is to be carried on at the South Sea house until a new building is erected on the site of the old one. As a kind of contrast to these fires, the river Thames, on the banks of which they may be said to be situated, is frozen so as not to be navigable above Gravesend; and above the bridges the ice is fixed about the banks, leaving only a narrow open stream in the middle.

We refer our readers to our meteorological register for the weather.

PAUMBAN PASSAGE, Ceylon.—The work of widening and deepening this passage, gets on very well, and it is already opened to a depth of seven feet at high water, which appears enough for all the coasting craft. On the 28th of July, there were eight vessels there at anchor, six of them belonging to Colombo, or Galle, and one employed between Colombo and Jaffora. At high water (ordinary tides) there is a clear passage of eight feet in depth through the middle of

the channel (which is now straight.) On the 21st July, a brig, drawing 6½ feet water, went through the channel under sail, in gallant style (this is a triumph of art over nature) without unshipping any of her cargo; so a ten feet channel, as this will be in a few months, will satisfy all.—*Extract from a Letter.*

HONOURABLE TESTIMONIALS.—It is always satisfactory to record the good services of our "sea worthies," as old Purchas used to call the seamen of his time; and it is still more so, to note down the proofs of those services being duly appreciated. We therefore proceed to record the presentation of a gold medal to Captain Tune, of the Commercial Steam Packet Company, at Boulogne-sur-Mer, December 15.—A very numerous meeting of the members of the Chamber of Commerce, took place at the Museum, for the purpose of presenting to Captain Tune, (the commander of the Grand Turk, London and Boulogne steamer, belonging to the Commercial Steam Packet Company,) a splendid gold medal, which had been unanimously voted to that enterprising commander, in testimony of the signal services he had rendered, upon several occasions, to the town and port of Boulogne. The chair was taken by Mons. Pamart, who addressed the captain in an appropriate and eloquent speech, at the conclusion of which, he invested Captain Tune with the medal, (a description of which is annexed,) amidst the hearty congratulations of those who witnessed the ceremony. The chairman likewise handed to Captain Tune, at the same time, a document under the hands and seals of the members of the chamber, most elaborately and ornamentally executed by a celebrated French penman, recording their estimate for his services. The gold medal, which is about six inches in circumference, and of considerable substance, contains on one side a beautifully executed bust of Louis Philippe, the King of the French; and on the reverse, an inscription, of which the following is a translation:—

"The Chamber of Commerce of Boulogne-sur-Mer, to Captain Tune, commander of the packet-boat, the Grand Turk, October 31, 1837, left the port of Boulogne, at midnight, with 100 passengers, in a violent tempest, with contrary winds, blowing strong towards the coast. Arrived in London the 1st of November, at one o'clock; thus proving, by its departure during so violent a storm, the ad-

mirable excellence of the port of Boulogne. November, 1837."

SUNDERLAND HARBOUR LIGHTS.—The Commissioners appointed for putting the Act 11th George IV., cap. 49, into execution, do hereby give notice, that on and after Feb. 1st, 1838, there will be exhibited from the Lighthouse, on the North Pier, in addition to the present stationary light, another light, coloured red, eighteen feet below the present light, and both will be exhibited from sun-set to sunrise.

Engineer's Office, Sunderland Pier,
Dec. 12th, 1837.

GREENWICH HOSPITAL.—A return of the total amount of Freight money received by the Treasurer of Greenwich Hospital, from the 12th July, 1819, to the 28th November, 1837:—

	£.	s.	d.
1819	250	0	0
1820	591	5	10
1821	13,780	1	7
1822	12,600	10	2
1823	13,938	11	10
1824	11,233	16	4
1825	19,257	3	3
1826	9,071	7	9
1827	17,269	2	9
1828	26,966	0	9
1829	18,166	9	7
1830	17,019	4	3
1831	9,958	6	7
1832	8,877	13	2
1833	9,193	2	8
1834	12,908	11	8
1835	10,069	2	11
1836	9,904	15	8
1837 to 28th November	9,064	5	0
Total.....	230,119	8	9

LIGHTS AT TEES MOUTH.—The Tees Navigation Company are actively engaged in making preparations for erecting lights at the mouth of the Tees, by which it is hoped that ships will be enabled to enter the river by night with safety. Considerable difference of opinion is found among nautical men respecting the utility of the proposed lights, but the preponderance is decidedly in favour of the project. At all events the experiment is worth a fair trial.—*Newcastle Herald.*

The following table contains the number of officers on the Navy List of January in each of the years mentioned, from 1816 to 1838 :—

	1816	1831	1834	1835	1836	1837	1838
Flag Officers	343	216	193	175	162	154	212
Captains	889	833	792	781	762	759	697
Commanders	894	1,192	1,144	1,140	1,119	1,105	1,084
Lieutenants	3,776	3,357	3,155	3,093	3,050	2,994	2,918
Marine Officers....	1,336	893	856	837	833	831	810
Masters	693	524	485	481	477	454	439
Medical Officers ..	1,537	1,153	1,017	1,026	1,020	977	1,042
Pursers	957	646	619	603	593	578	570
Chaplains	62	71	63	62	61	69	72
	<u>10,487</u>	<u>8,885</u>	<u>8,324</u>	<u>8,198</u>	<u>8,077</u>	<u>7,921</u>	<u>7,844</u>

The following observations of the thermometer, during the recent severe weather, are worthy of record. In the frost of January, 1820, the thermometer was at 4°.

Croom's Hill, Greenwich.

1838.	Therm.
Jan. 19th. h. m.	° ' /
6 30 P.M.	14 5
7 0 —	13 8
9 30 —	16 5
11 0 —	14 0
12 0 —	12 5
Jan. 20th. 1 0 A.M.	7 5
1 30 —	6 1
1 45 —	5 5
2 20 —	5 0
3 0 —	3 8
3 30 —	3 7
7 30 —	2 5
8 0 —	2 2
8 15 —	2 5
8 40 —	3 0

NEW YORK LINERS.—Those who are acquainted with the luxuries of these vessels will appreciate the following account of the packet ship Cambridge:—We gratified ourselves yesterday, by passing half an hour in examining the splendid cabin of the new packet, in company with several other visitors, ladies and gentlemen, (or men and women, as Miss Martineau would insist upon calling them,) among them several packet captains of established reputation and long experience. We shall not attempt to describe the impression made upon us by what we saw; by the spacious state rooms, the numberless and most ingenious contrivances for comfort, the exquisite beauty of the rich and highly polished cabinet work, of which the entire cabin is composed, the ample munition of the steward's room, and the

general perfection of every thing we saw and tasted. The conversation during our stay on board, was but a continued succession of epithets and expletives. "Beautiful," "superb," "magnificent," "admirable," "wonderful," and every other term of admiration and delight, were flying about like the corks from the champagne bottles. "Do look at this love of a sofa," cried one. "Oh what a sweet little boudoir is this family state room," murmured another. "Steward, some more cakes and champagne glasses," "Fifty can dine with ease at this long table," "Thirty berths engaged already," "Joiners' work alone cost nearly 4,000 dollars," "Arrive in ample time to eat their Christmas dinners in London," "We did not build such ships as this ten years ago," "Success and a pleasant voyage to the Cambridge." Such were the fragments of discourse that were bandied to and fro; and if they convey but an imperfect idea of the glorious new ship's unrivalled beauties, we can only say to such as would have a better, "Go on board and examine for yourselves."—*New York Commercial Advertiser.*

ROCKEN END LIGHT.—A new lighthouse is about to be built at the south part of the Wight, near Rocken End. Mr. Thomas Dashwood's estimate of 5,000*l.* for that purpose is accepted. We hear that Wheeler, who has been the means of saving so many lives at the back of the island, is promised by a noble lord to have charge thereof, of which he is undoubtedly deserving. Mr. Holford has kindly given a piece of land for the purpose of the site of the intended light being not far from the place where the unfortunate Clarendon was lately wrecked.—*Hants Advertiser.*

LIGHTS OF CAPE GRINEZ, AND CAPE DE LA HAGUE.—*North coast of France.*

Hydrographic Office, Admiralty, 1st Dec., 1837.

Mariners are hereby informed, that since the 1st of November, 1837, a single fixed light has been shown on CAPE GRINEZ, in the *Departement du pas de Calais*. The lighthouse stands in lat. $50^{\circ} 52' 10''$ N. and long. $1^{\circ} 35' 9''$ E. of Greenwich. The light is forty-nine English feet above the ground, and 193 feet above the sea, at high water. In clear weather it may be seen at the distance of seven leagues.

And another single fixed light, called the Light of CAPE DE LA HAGUE, has been shown on the *Gros de Raz* Rock, near that Cape, in the *Departement de la Manche*. The lighthouse stands in lat. $49^{\circ} 43' 22''$ N. and in long. $1^{\circ} 57' 8''$ W.

of Greenwich. The light is 157 English feet above the sea, at high water, and in clear weather, may be seen at the distance of seven leagues.

CAUTION.—Boulogne, Jan. 1.—The resemblance of the light at Grinez with that of Dungeness, has occasioned two more accidents this week. The Swedish ship, *Storfursten*, is wrecked near Ambletuse, crew saved; and six hours after, the English schooner, *Lord Wellington*, got on shore near the Swede, crew and cargo saved. Grinez is likely to cause further and fatal mistakes if some alteration in the lights be not made.—*Commerce de Paris.*

RHODE'S UNIVERSAL SIGNALS.

We have received the following testimony in favour of Captain Rhode's Signals, and insert it in justice to their author:—

H.M.S. *Seringapatam*, St. Thomas's, 11th Nov., 1837.

DEAR SIR,—I have much pleasure in having had an opportunity of trying your Code of Signals, and I have the satisfaction of stating to you, that from the trial made between her Britannic Majesty's

Packet, *Linnet*, and this ship, I am convinced that were they generally known, they would prove a great advantage to the maritime world.

I have the honour to be, Sir, your most obedient humble servant,

JOHN LEITH, Captain.

Commodore Rhode. of the Danish Navy, and

Captain of the Port St. Thomas. Chevalier Dannebrog.

HURRICANES.—In our last number we inserted another paper on the subject of hurricanes. We learn that a volume now in the press, composed of papers by the corps of Royal Engineers, contains one on this subject, in which the numerous facts that are adduced, prove to demonstration, that hurricanes are progressive whirlwinds, the study of which opens a new subject of an interest and importance little suspected by most persons.

We here repeat our former entreaties of attention to this subject, and, to those who have not read it already, we recommend an attentive perusal of our number for April, 1836, containing an article on the subject, by Mr. Redfield, of New York.

ROYAL HUMANE SOCIETY.—Prizes Awarded.—Mr. Nathaniel Morgan, a silver medal, for saving a boy named Thomas Lewis, fallen from the *Margarita*, off the Nore. George Philpott, and four other Deal boatmen, silver medal for saving four men from the ship *Crown*, wrecked on the Goodwin. Lieut. W. C.

Hall, R.N., for saving J. Whittington, a silver medal. Mr. J. Ross, for saving Mr. M. Ross, at Cromarty, a silver medal. Lieut. A. Mc. Donald, for saving three fishermen, a silver medal. Mr. S. T. Le Batt, a silver medal, for saving a young lady at Ramsgate. Captain Walsh, silver medal, for saving eighty-two lives from the wreck of the *Glasgow*. Mr. D. Spence, for saving eight lives at Kirton. Lieut. Clayton, for saving a female and eight other persons at Hull, a silver medal. Mr. A. Blackwood, for saving a man, named White, at Margate, a silver medal. Mr. Shea and Mr. Forman, silver medals, and the mate of a Russian ship, for saving part of the crew of the *Caledonia*, a bronze medal.

FOG SIGNALS.—Commander Smith, R.N., who is well known to our readers as the inventor of the lever target, and several other ingenious contrivances, has produced a machine for making signals on board vessels, to indicate, not only their proximity to others passing, but

also the direction in which they are steering, with reference to the four cardinal points.

This is effected by wheel work which acts upon a gong or drum, and requires no further attention than to be wound up occasionally. It is deposited in the Adelaide Gallery, for the inspection of those interested in such matters.

THE MIRAMICHI.—This river is considered by Captain Bayfield as second to the St. Lawrence, in Canada, and after adverting to the great inaccuracies, and necessarily dangerous tendency of the existing charts of it, he observes—

“Nineteen feet of water can be carried into the river in ordinary spring tides, and twenty or twenty-one, by watching for opportunities.

“Miramichi is a place of rising importance; the great fire of 1823 gave so severe a blow to its prosperity that it is still felt, but the place is recovering fast, and nearly two hundred sail of large vessels, exclusive of coasters, will load with timber at the several towns and settlements on its banks this season. The attention of the population is at present almost entirely turned to the timber trade, although the salmon and gasperiaux fisheries are also carried on in their seasons. The improvement of the natural capabilities of the country is but little attended to, yet there is nothing to prevent success in agricultural pursuits, whenever the attention of the people shall be turned that way, by a failure in the supply of timber. The few families which at present live by farming succeed perfectly. Cod-fish are abundant a few miles out from the bay, and the cod-fishing therefore lies open to them whenever they may find it their interest to carry it on. At present American schooners are almost the only vessels fishing upon those banks either for cod-fish or mackarel. The country is low, but everywhere well drained by numerous streams. It is based upon a sand stone, which is either the ‘new red,’ or one more immediately belonging to the coal measures. This sandstone is traversed occasionally by thin veins of bituminous coal, and contains the usual vegetable remains of the coal formation, but no vein has yet been found large enough to repay the labour of working.”

CHRONOMETERS.—The following notice to captains of vessels, appears in a Cape of Good Hope paper.

The commanders of ships, and others connected with the shipping interest, are

informed, that a Ball has been erected before the south front of the Observatory, for the purpose of daily communicating to the ships in the harbour, the instant of one o'clock, Cape mean time, which corresponds to eleven hours, forty-six minutes, five seconds, Greenwich mean time.

The present contrivance furnishes a convenient method for obtaining this important object without any calculation or difficulty. All that the observer has to do is, to point the common ship spy-glass to the signal ball a minute or two before one o'clock, and to note the instant of the fall of the ball from the top of the staff, by chronometer. Then eleven hours, forty-six minutes, five seconds, subtracted from the time by chronometer, gives the error of the chronometer, or Greenwich mean time, which, compared with the error obtained at departure, will give the rate during the interval.

ADMIRALTY, 23rd Nov., 1837.

MEMORANDUM.—The Lords Commissioners of the Admiralty are pleased to direct, that the first engineers of Her Majesty's steam vessels shall wear the same uniform as the gunners, boatswains, and carpenters of Her Majesty's fleet.

By command of their Lordships,

C. WOOD.

PRESENTATION OF A PIECE OF PLATE, AND A PUBLIC DINNER, TO CAPTAIN A. RUSSELL.—On Wednesday, the 3rd instant, a number of the committee and shareholders in the Belfast and Glasgow Steam Shipping Company, entertained Captain A. Russell, at a public dinner, in Davis's Hotel, William Pirrie, Esq., in the chair; when they presented him, through the chairman, with a very handsome piece of plate, bearing an appropriate inscription, in testimony of their approval of his conduct, and esteem for his character, as an able seaman and experienced commander; in which capacity he had most satisfactorily served them for upwards of eight years. The plate was beautifully executed by our esteemed fellow-citizen, Mr. R. Neill, and bore the following inscription:—

“Presented by the Trustees and several of the Proprietors of the Belfast and Glasgow Steam Shipping Company, to Captain Arthur Russell, as a testimonial of their high respect for his character, and approval of his conduct as a commander of their steam vessels; in which

capacity he served that company during a period of more than eight years."

Captain Russell is at present master of the *Mercury* steamer, on the Glasgow and Dublin station. We should much like to see him in command of one of the *Daily Mail Packets*, which it is likely will be established between Liverpool and Belfast. Government could do nothing more pleasing to the commercial interests of Belfast, than by making such an appointment.—*Northern Whig*.

THE medal of the Royal National Shipwreck Institution, with a vote of thanks, has been presented to Captain P. R. M. Browne, (see particulars of wreck, p. 859, vol., 1836,) of Janeville, county Down, Ireland, a magistrate, and formerly of that highly distinguished corps, the 9th infantry, for his meritorious exertions in saving the lives of the crew of the ship *Cœur de Lion*, of this port, wrecked in Dundrum Bay, on the 11th of September last, as well as the lives of four men, belonging to a country boat, which was upset on the same occasion.—*Shipping Gazette*.

We learn that the underwriters at Lloyd's have voted 100*l.* to Captain Mills and the officers and crew of the steamship *Shannon*, belonging to the British and Irish Steam-packet Company, in testimony of their approbation of the seamanship and perseverance exhibited by them in reaching Milford-haven, on a voyage to London, with this vessel, after a loss of rudder and the entire consumption of fuel; and that, notwithstanding a continuance of heavy gales for several days. To the extraordinary exertions made on this momentous occasion the passengers have also borne honourable testimony.—*Shipping Gazette*.

GENERAL SIGNALS TO SHIPPING.—We understand that Commander E. Smith, R.N., has invented a telegraph for use by night or day, with a short code of signals, to communicate with ships off the entrances of harbours, as to depth of water, time for entering, &c. If generally adopted, which we shall be glad to see, it promises to be of great service to shipping. It is now exhibiting at Lloyd's.

SIERRA LEONE.—Mr. Huggins, of 105, Leadenhall-street, has just published a spirited aquatint view of Free Town, taken from the opposite side of the harbour, glowing with all that richness of colour and scenery which belongs to a tropical

climata. It is not surpassed by any of his former productions.

THE NORTHERN ROYAL YACHT CLUB.—Mr. Findlay, of Glasgow, has produced an elegant coloured print of a scene at the termination of a Race, representing the different vessels of this club. The various yachts are well placed, and there is an air of animation and business in the drawing, which, with the general correctness of perspective, does much credit to the artist. Mr. Findlay is evidently entitled to patronage, and we recommend those of our readers who are interested in these productions of art, to judge for themselves, at 105, Leadenhall-street.

WYRE HARBOUR.—A recent work from the pen of the Rev. W. Thornber, Incumbent of Blackpool, speaks thus of this harbour and the town of Fleetwood, with its railway to Preston and adjacent country:—

The scenery is beautiful and well worthy the attention of the artist. In my opinion, it equals any prospect in the kingdom, in the vicinity of the sea. But the warren can now hold out a much greater attraction, as being the site on which the new town of Fleetwood is erecting, at the termination of the Preston and Wyre railroad. Vigorous operations have already commenced; several houses and an excellent hotel have been erected, the principal streets marked out by the plough and covered with their first coating of gravel; and the spirited proprietor, P. H. Fleetwood, Esq., is now laying out tasteful pleasure grounds for the accommodation of those who may visit it. What vast changes may we contemplate? the once lonely desert will become a flourishing sea port, the emporium of merchandize, the seat of riches, and the habitation of industry. With the capabilities possessed by the Wyre for shipping, we must wonder that it has been so little regarded by the commercial world; proverbially safe, it can advance claims which ought not, for so many years, to have been overlooked. When this undertaking, which is now in active operation, is completed, the ready access which will be afforded to Manchester, Bolton, Blackburn, Wigan, Preston, and other manufacturing districts of Lancashire, must eventually, and at no remote period, render Wyre conspicuous as a flourishing sea port. Assured of success from these numerous advantages, and confident in its aptitude for a sea port; an aptitude which has been confirmed by the government surveyor, and other first-

rate enquirers; as qualifying this river, with a few improvements, in a degree, greatly superior to any other on the western coast, for a harbour of refuge.

ROYAL GEOGRAPHICAL SOCIETY.—*Papers Read, Jan. 8.*—Sir John Barrow, V.P. in the chair.—1. Report of the expedition under Lieuts. Gray and Lushington, from Cape Town, 10th Oct., to N.W. coast of Australia. Had freighted a schooner from the Cape of Good Hope, and were about to sail immediately. 2. Ascent of the Peak of Demawaud, in Persia, in lat. 36° N. and 52° E. (nearly) by Mr. T. Thompson—Elevation of City of Tehran, about 3,800 feet, and the peak

14,300 feet above the level of the sea. 3. On the Emigration of the Border Colonists of South Africa, from Captain Harris's Journal (E.I.C. engineers) in May, 1837. Mr. Polack, a gentleman lately returned from New Zealand, and who, we understand, is about to produce a very important work on that fine country, having resided there many years, as well as in Madagascar, was present at the meeting, and exhibited some interesting sketches illustrative of the country, and the manners and customs of its inhabitants, who, according to his statement, have already arrived at a very tolerable degree of civilization.

MONARCH AND APOLLO.—The following letter was received on the 28th December, and therefore too late for our last number:—

SIR,—In your Magazine for the month of November, you have allowed the most unwarrantable assertions to be made respecting the collision between the Monarch and Apollo, and which have neither the least foundation in truth or justice.

It is not my intention to make any observations on your remarks respecting the gentlemen composing the jury, nor am I going to defend Mr. Grainger, whose well-known reputation and acknowledged probity will place him above the reach of the libellous assertions which your correspondent has indulged in; but when he states that the Apollo was an old and crazy vessel, badly appointed, and the captain inexperienced, with other remarks of a similar nature, he states what is untrue and unjust. The best answer to his assertion is a reference to Lloyd's Registry, where he can ascertain her age, as well as finding her in class A 1.; and I will venture to affirm there was not a vessel in the coasting trade better appointed, nor a commander more experienced and careful. In lending yourself, therefore, as a partisan to the remarks of an anonymous correspondent, which you acknowledge by your signature, you have committed an act of gross injustice towards this company, and traduced the character of a worthy and experienced seaman. As the whole matter is now undergoing a solemn and justicial inquiry, I shall content myself with the above observations, and which I request you will, without hesitation, admit in the pages of a journal which professes impartiality, and ought therefore to practice it.

I am, Sir, your most obedient servant,
JOHN BLEADEN, Secretary.

[Those of our readers who take an interest in this subject, will find it treated on in our vol. for 1837, p. 690, 743, and 849; and in our last number, p. 61, the opinion of Vice Admiral Sir David Milne, K.C.B., with which, and the foregoing letter, they will form their own conclusions. We were not aware before, that it was the part of an "experienced scaman," when captain of a vessel, to be the first to forsake her in time of danger, leaving those on board to take care of themselves. Had the Apollo been run on the mud on either side of the river directly the accident happened she would not have sunk in deep water. But we have now done justice, we hope, to all parties, including even the "experienced seaman."—ED. N.M.]

Law Proceedings.

DREDGING STEAMER. Salvage.—Dredging steamer got aground on the Kissing sand, near Lowestoft, in April last. Tickle steamer got her off, and towed her into safety. Value of dredging vessel estimated at 1,100*l.* Contended the case was one of towage. The Judge considered that the assistance amounted to salvage, though not of magnitude, and allotted 25*l.* and costs. — (*Admiralty Court, Nov. 10.*)

THE FLORA. Salvage.—Discovered derelict by a Prussian vessel the Hercules, from Stettin to Nantz. The Flora, from Cardiff to Stettin; cargo, iron. Towed to British coast, and with aid of H.M.S. Cracker, brought into port. Flora and cargo valued at 1,800*l.* Court awarded a moiety to salvors. (*Admiralty Court, Nov. 10.*)

THE HELENA. Salvage.—From Bordeaux to Altona; cargo, wine and spirits. Found derelict in British Channel, by Philippa and two fishing smack; conveyed by them and Lieutenant Roberts, (of coast-guard,) into Littlehampton; value of Helena about 1,644. Court directed all expenses and costs be paid out of the property, and remainder to be apportioned into sixteenths, an eighth (being a moiety) to the owners, four to the Philippa, the primary salvors, two to the fishing smacks, equally, and two to the coast-guard, of which one to Lieutenant Roberts and his crew.—(*Admiralty Court, Nov. 10.*)

THE PERCY. Bottomry.—Application for proceeds realized by sale of ship Percy, as well as her freight, to protect interests of mortgagee. Sir John Nichol said, the bottomry bond not being contested, the ship was the primary object in giving a bond, the court had no jurisdiction to allow the intervention of mortgagee. He had no power to decide on their claim and they must go to a court of equity. He should order the holders of the bond to be paid out of the proceeds of the ship in court, unless restrained by a superior authority. (*Admiralty Court, Nov. 3.*)

THE IRIS. Wages.—A very important point has been decided by James Kippen, Esq., in the Justice of Peace Court here. An action was brought before the justices, under the act 5th and 6th William IV.,

cap. 19, by John Wilson, one of the crew of the brig Iris, of this port, against the owner, to compel payment of his wages. The Iris had been on a voyage to Quebec; and the greater part of the crew that went out with her having deserted in the country, the captain engaged Wilson, who had deserted from the brig King Henry the Fourth, of Glasgow, and five other seamen, to bring the vessel home. Mr. James Dunlop, agent for the owner, pleaded among other defences, that Wilson being a deserter, had forfeited all claim to wages on the voyage. Mr. Hugh Dempster, agent for the seaman, stated in reply, that the act declaring this forfeiture, viz., the act 4th George IV., cap. 25, had been repealed by the act 5th and 6th William IV., cap. 19, section 1, and Mr. Kippen, the presiding judge, decided accordingly, and the seaman having proved his case, was found entitled to his wages, with expenses.—(*Glasgow Constitutional.*)

THE NELSON VILLAGE. Collision.—The Nelson Village and the Scotia ascending the St. Lawrence, crossed each other's track, tacking on opposite points on night of 13—14th September. Opinion of court founded on nautical evidence, and adopted that of Captain H. W. Bayfield, R.N., employed by the Admiralty in surveying the St. Lawrence. This officer who had attended the proceedings, said, "After weighing, therefore, deliberately, the evidence on either side, and considering the superiority of the testimony on the side of the libel, I am of opinion, that according to the evidence adduced on this case, the fault rests with the Nelson Village alone."

The judge then said, "I adopt this opinion with perfect satisfaction, and assess the damages of 4*l.* 7*s.* 4*d.*, currency, being the actual expense of the repairs to which the demand of the promoter is confined. The question of consequential damages is not before the court. I beg to renew the expression of my thanks for the readiness with which Captain Bayfield has afforded his valuable assistance upon this, as upon a previous occasion, whereby the court has been relieved from the necessity of pronouncing judgment upon a question connected with a science with which it is but little conversant, and the public secured in a just application of

the rules of navigation to the facts of the case.—*Admiralty Court, Oct. 31st.—Shipping Gazette.*

WARING AND OTHERS, *versus* MORTIMER. *Collision.*—Owners of a "a trow" on the River Avon, to recover compensation from the Captain of a Waterford steamer called the "Nora Creina," for damage caused by running foul of the trow coming down from Bristol on 15th of July last.

Alleged on part of plaintiffs, that, trow was lying at Black Rock docks, waiting a load of stones, moored; two steamers came down, the latter, the Nora Creina, struck larboard quarter of trow, doing considerable damage; cost a month's labour to repair, for expense of which they

brought action. Answered on part of defendant, that, action being brought against captain of steamer his mouth was closed, extraordinary course. Proved navigation most intricate at place of collision, trow not properly moored, stern being loose, commotion of steamers passing caused her to swing into stream, and by negligence of her crew forced under paddle-box of Nora Creina, whose engines had been stopped, helm put a starboard, and all necessary measures for avoiding her adopted. Captain of first steamer, in passing, hailed trow to warn her of danger no attention, tide on turn, collision took place. The jury returned a verdict for defendant. (*Court of Exchequer, Dec. 5.*)

Records of Wrecks.

[The numbers refer to the names in the tables.]

JANE Sloop, No. 22.—In Dundrum Bay, master and one seaman washed overboard, and vessel rendered unmanageable: one seaman and two sick passengers left—a boat, from Kearney, boarded her off the South Light, and rescued them from the vessel shortly before she went down.

WILLIAM, of *Whitby*. No. — Burthen 197 tons. Wrecked on Middle Heaps Sand, coast of Essex—Crew landed at Brightlandsea, by smack Princess Victoria—Field, of Colchester—no other vessel being near and night approaching, crew would have been lost, but for the timely exertions of crew of the smack.

THE BRIG HARMONY.—The following letter from the master of the ship *Tabius*, dated at Oahee, 29th October, 1836, to Commodore Mason, gives an interesting account of the loss of this vessel:—

Sir,—I have to inform you of the destruction of the brig *Harmony*, of Port Louis, Isle of France, Captain Brown, which vessel I fell in with on the 16th June last, ten leagues from Pleasant Island, in a distressed condition, with only three persons on board, which are now on board the *Zabius*.

It appears, by the log-book found on board, that the brig sailed from Oahee, 30th August, 1835, on a shell voyage to the S.W. of the South Islands. In October she touched at the Island of Ascension, and left Mr. Lacy, and three men to trade till the vessels return. On their way they touched at Howe's group of islands, and took from there one of the natives. They left New Georgia on the 8th Jan.,

1836, and again steered for Howes Group. On the 11th the lat. was 6° S., and lon. 159° 21' E., which brings them within seven or eight leagues of the land. This is the last day's work in the log book.

Now for the Havana story. Before I proceed further I will tell you the particulars I have been able to learn from the survivors respecting themselves.

The oldest (about thirty) is a native of the Marquesas, by the name of *Jackey*. He joined the brig at Oahee. The next, a female, who accompanied Mr. Sinclair to Oahee, in the *Clementine*, with *Groombeck*. She is a native of the Island of Java (*Samarang*.) She, with Sinclair, joined the brig at Oahee. The other, a lad of about sixteen, is a native of Ascension, and joined the vessel at that island. Neither understands the other's language; all their communications were held in English, which is very imperfectly understood by them. They all say they made the land, (which they call *penow*) but did not anchor—that several canoes came off—that the captain, with four men and the natives of the island mentioned above, went on shore with the boat, and all the canoes went also—shortly after a number of canoes came off with a great many men. The mate (*Sinclair*) suffered them to come on board. They had not been long on board before they made a general rush among the crew. The girl saw them seize the mate and knife him; she ran down in the cabin; the boy scampered for the fore-castle; they struck at him as he was getting over the gangway; the main-

stay received the weight of the blow and he made his escape with a slight wound on the head. Jacky received an axe-wound on the shoulder and was knocked down the main hatchway. The vessel having no cargo in he was soon out of reach; he crept aft, forced the bulk-head, and got into the cabin, where he found the girl, and the natives pelting her with cocoa nuts down the skylight, but did not attempt to go down.

They now had possession of the deck, and were making a terrible uproar. Jacky got several muskets loaded, and fired up the skylight and shot some of them. At any rate, he plied his arms so well, that they retreated and left the vessel. Jacky now fired away, discharged a big gun at the retreating canoes without effect, and since that time, till we fell in with them, which was five months and four days, they had been about the ocean, they knew not where, at the mercy of the wind and waves. On the 3rd of June I touched at the Island of Rotuma with the *Zabins*, and the natives reported a brig coming near the island in April or May, with only three persons on board. Jacky, not knowing what island it was, nor the disposition of the natives, would not let them come alongside.

On the 16th, N. N.W. from Pleasant

Island ten leagues, we saw a sail to windward, making strange manœuvres under very short sail, though the wind was moderate; it immediately occurred to me it was the same vessel. I braced up and hauled for her, got alongside of her at 7 in the evening, when he told me he had only two men on board. I sent an officer and seaman to take charge of her for the night, and sent Jacky and his shipmates on board the ship. Nothing could exceed their joy on getting on board. Their only fear seemed to be that I would send them adrift again in the old brig. The next morning I went on board to examine her state, and found it truly distressing; her sails and rigging were all to tatters, her spare sails all rotten, both pumps choked, the vessel leaky and half full of water.

She had no cargo except two boxes of felt and a small quantity of New Zealand timber; but little provisions, with half a cask of water. Under these circumstances I took out the captain's and officers' clothing, nautical instruments, charts, turtle-shell, one anchor and two chains, with other articles of trade and set her on fire. When I first took Jacky on board I suspected him of mutiny, but after I had thoroughly investigated the case, together with the logbook, not a shadow of doubt remains with me but that his story is true.

NEW BOOKS.

THE LIFE OF RICHARD EARL HOWE, *Admiral of the Fleet and General of the Marines*; by Sir John Barrow, Bart., F.R.S.—Murray, Albemarle Street

It has been complained of this work, that it is meagre and incomplete; charges which were anticipated, and sufficiently accounted for in the preface. But, although the materials of which it was formed may have been few and scanty, the naval historian will hail with satisfaction, the sterling information which it contains of the life of a great and good man; and the fresh particulars which it affords of an eventful period in the annals of this country, connected with the navy.

For our part we shall find frequent occasion to refer to its pages, and shall commence our extracts with the following passage, on the power of the Admiralty to strike an officer from the navy list.

“That the Board of Admiralty is fully invested with the dangerous and equally disagreeable authority to erase an individual's name from the list of Naval Officers, and thus for ever ruin his prospects in life, cannot be called in question; but it ought to be resorted to only in cases where the Act of Parliament, by which naval discipline is governed and upheld, precludes the exercise of such a jurisdiction as is thereby provided; and where the Board of Admiralty, as the law now stands, is imperatively called upon to act in cases that cannot be brought before a Court-Martial. When the necessity for such a proceeding occurs, as that of striking an officer's name from the list, the public and the individual may be well assured, that a body of three or four

highly honourable men, naturally prejudiced in favour of a brother officer, would be slow to condemn him to disgrace, and, in some cases, to absolute and hopeless poverty, without having first satisfied themselves, that a Court-Martial, if one could have been held, would have pronounced the same or a similar sentence."

Speaking of the unfortunate loss of the *Royal George*, Sir John Barrow throws a new light on that affair, which we find Mr. Whidby referring to in page 103, of our present number.

"A monument in the church-yard of Portsea, commemorates this melancholy catastrophe, by which fatal accident, it is stated, about nine hundred persons were launched into eternity, among whom was that brave and experienced officer, Admiral Kempenfelt. Very erroneous opinions were entertained of the cause of the loss of the *Royal George*, which were, however, corrected by the evidence on the court-martial, so as to satisfy the members of the court, that it was not the heeling of the ship that caused her to sink; but, that 'from the short space of time between the alarm being given and the sinking of the ship the court was of opinion that some material part of her frame gave way, which can only be accounted for by the general state of the decay of her timbers, as appears upon the minute.' Admiral Millbank deposed, that he saw her in dock at Plymouth; found her so bad, that to his recollection there was not a sound timber in her; the officers of the yard said she was so very bad they could scarce find fastenings for the repairs she underwent: Sir John Jarvis confirmed what the Admiral had stated. It was, therefore, the general opinion that the whole side had given way bodily; and, it was supposed that on this account, the Navy Board discountenanced all attempts to raise her, which might easily have been done, from a conviction of the state in which she would have made her appearance, and which must have sealed their, or rather their officers', condemnation."

We shall conclude our present extract with the foregoing, referring those of our readers, who are so far interested in the matter, to an account of the attempts made to raise this vessel, given in page 592 of our volume for 1832.

AN ELEMENTARY TREATISE ON STEAM, more particularly as applicable to the purposes of navigation, with a familiar description of the engine. By Robert Otway, Commander, R.N., Poore, Plymouth, and 1, James Street, Adelphi.

Many more particulars are announced in the title page of this work than are here expressed—all relating to that important art, the management of Marine Steam Engines. Steam Navigation has now taken its place as a branch of our naval tactics, one which will hereafter lead to immediate results; the extent and importance of which it is scarcely possible to calculate. We need only observe the daily application of it passing before us, to perceive its extraordinary advantages, and how those advantages will be applied in warfare. The naval officer will, therefore, readily see the importance of not being at the mercy of engineers, when placed in command of a steam vessel; and will obtain timely instruction in this important branch of his profession. The work before us is well calculated to assist the beginner, in learning the various parts of the engine; and the purposes as they are described in detail, with the help of wood-cuts. Commander Otway has

here, with a commendable zeal, placed the result of his experience before his brother officers: and the fault will not be his if they do not avail themselves of it.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captain, E. H. Scott; *Commanders*, J. L. Parkin, C. Testing, G. Elliott; *Lieutenants*, A. Little, R. Studdart, W. H. Dobbie, J. G. Burslem. *Purser*s, W. H. Johnson, W. Laws, J. Mitchell, J. Mount-steven, D. Conway. *Surgeons*, W. Doak, G. D. Maclarum.

APPOINTMENTS.

ALLIGATOR, 28.—A. L. Keeper, BRISK, 3.—*Lieutenant-Com.*, A. Kellett, *Second Mast*, W. Webb; *Clerk*, L. K. Sutherland; *Mate*, W. L. White; *Midshipman*, T. Coote. BRITANNIA, 120.—*Asst.-Sur.*, T. Shallon, M.D., R. Chambers, M.D., T. Statton, M.D. A. Housley. BRITOMART, 10.—*Second Master*, J. S. Hill; *Clerk in charge*, F. Mundy. CALLOPE, 28.—*Mate*, H. L. Visconte. COAST-GUARD.—*Lieutenants*, S. Wyld, M. Combe, F. Blacker, R. Dawson, J. Brown, J. C. Sicklemore, S. Mottley, W. E. Amiel, H. Harvey. ELECTRA, 18.—*Lieutenant*, W. Critchell; *Master*, J. W. Burney; *Mate*, T. H. Parson. ESPOIR, 10.—*Lieutenant-Com.*, T. Paulson; *Assistant-Surgeon*, J. G. Williams; *Second Master*, F. M. Strong. INCONSTANT, 36.—*Mate*, L. Barnard. LILY, 16.—*Com.* J. Reeve; *Lts.* J. J. C. Tracy, C. H. Lapridge; *Master*, (act.) R. W. Miller; *Pur.*, B. Dyer; *Surgeon*, R. Gourley; *Asst.-Surgeon*, R. Johnston; *Mate*, J. Miller. MALTA DOCKYARD.—*Capt. Superintendent*, Sir John Louis. B. MAGERA, St. V.—*Lieutenant-Com.*, H. G. Goldsmith. MESSENGER, St. V.—*Engineers*, T. Matthews, W. F. Sutton. NAUTILUS, 10.—*Lieutenant*, G. Beaufoy, *Assistant-Surgeon*, J. C. Mottley. PARTRIDGE, 10.—*Lieutenant-Com.* W. Morris; *Assistant-Surgeon*, J. W. Symonds; *Clerk add.*, W. Thomas. PEMBROKE DOCKYARD.—*Captain Superintendent*, S. Jackson, C. B. PENINSULA St. V. *Lieutenant*, L. D. Mitchell. PHENIX St. V.—*Purser*, T. Woodward. PINCHER.—*Lieut.-Com.* T. Hope. PIQUE, 36.—*Mate*, R. White. PLYMOUTH HOSPITAL.—*Captain Superintendent*, J. Coode, C. B. PRINCESS CHARLOTTE, 104.—*Lieut.* G. Western. RACER, 10.—*Purser*, (act.) J. Elkins. ROYAL ADELAIDE, 104.—*Purser*, W. Page; *Assistant Surgeons*, J. G. Williams, J. M. Minster. TEMAIRE, 104.—*Master*, M. Bradshaw. THUNDER. *Surveying Vessel*.—*Second Master*, J. Scott; *Master's Assistant*, J. Beckett. TYNE, 28.—*Mate*, J. Snyth; *Assistant Surgeon*, A. Murray. VOIAGE, 28, *Lieutenant*, T. P. Dobree; *Purser*, H. South. WOOLWICH DOCKYARD.—*Captain Superintendent*, P. Hornby, C. B.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION TO 20th JANUARY, 1837.

AT HOME.

ALLIGATOR, 28, *Captain* Sir G. Bremer, at Plymouth, about to sail for Australia. BRISK, 3, *Lieut. Com.* A. Kellett, fitting at Portsmouth. AFRICA BRITANNIA, 120, *Flag of Admiral*, Sir P. Durham, Portsmouth. BRITOMART, 10, *Lieut. Com.* O. Stanley, fitting at Plymouth, to accompany Alligator. COLUMBIA, St. Y., *Lieut. Com.* G. Gordon, 4th Jan. left Portsmouth for Santander. ELECTRA, 18, *Com.* W. Preston, at Portsmouth, fitting. ESPOIR, 10, *Lieut. Com.* C. Testing, at Plymouth, fitting—packet service. EXCELLENT, *Capt.* T. Hasting, Portsmouth. HASTINGS, 74, *Capt.* H. Shiffner, 12th Jan. paid off at Sheerness. INCONSTANT, 36, *Capt.* D. Pring, 6th Jan., left Cork with troops for Canada. LIGHTNING, St. V. Woolwich. LILY, 16, *Com.* J. Reeve, Plymouth, fitting. LYNX, 3, *Lieut. Com.* J. Broadhead, fitting at Sheerness. MALABAR, 74, *Capt.* Sir W. Montague, 15th Dec., arrived at Plymouth; Jan., paid off on the occasion of

her leaving the Tagus, the following order was issued: "The Commander-in-Chief, Rear-Admiral Sir J. A. Ommaney, begs to express to the officers and ship's company, the very great satisfaction he has experienced in inspecting the Malabar, that he considers her in the highest order of any man-of-war he has ever seen, and quite a pattern to the service." MASTIFF, surveying vessel, Mr. Thomas, Woolwich, fitting. MAGERA, St. V., *Lieut.* H. C. Goldsmith, Woolwich, fitting. MELVILLE, 74, *Flag of Rear-Admiral* G. Elliott, C. B. *Capt.* Hon. R. S. Dundas, 5th Jan. left Spithead, and 6th, Plymouth for Cape station. MESSENGER, St. V., 4th Jan., Plymouth. MODESTE, *Com.* G. Eyres, Woolwich, fitting. PARTRIDGE, 10, *Lieut. Com.* W. Morris, fitting at Portsmouth. PINCHER, 5, *Lieut. Com.* B. J. Sullivan, at Stratham, fitting. PIGEON, 36, *Capt.* E. Boxer, 24th Dec., sailed for North Coast of Spain. PRESIDENT, 52, *Flag of Rear-Admiral* Ross,

Capt. J. Scott, 5th Jan., sailed for Rio. RACEHORSE, Com. H. W. Crawford, at Plymouth, fitting. ROYAL ADELAIDE, 104, Flag of Admiral Lord Amelius Beauclerk, Capt. Sir W. Elliott, K.C.H., Plymouth. ROYAL GEORGE, Yacht, Captain Lord Adolphus Fitz-Clarence, Portsmouth. SAN JOSEF, 110, Captain J. Hancock, C.B., Plymouth. THUNDER, surveying vessel, Lieut. T. Smyth, 5th

Jan., sailed for the West Indies. TYNE, 28, Captain T. Townshend, 9th Jan., left Portsmouth, 10th, Plymouth, for Mediterranean. VESTAL, 26, Captain T. W. Carter, at Sheerness, fitting. VICTORY, 104, Captain T. Searle, C.B., Portsmouth. VOLAGE, 28, Captain H. Smith, (a.) Chatham, fitting. WASP, 16, Com. Hon. D. Pelham, Portsmouth, fitting.

ABROAD.

BARHAM, 50, Captain A. L. Corry, 2d December, sailed for Naples from Malta. BUZZARD, 3, Lieut. Com. J. Stoll, Sept., off Whydah. CAMELEON, Lieut.-Com. J. Bradley, 12th Dec., at Lisbon. CASTOR, 36, Captain E. Collier, 21st Nov., arrived at Malta. CHAMPION, 18, Com. G. S. V. King, 28th Oct. left Bermuda for Cuba. COMUS, 18, Com. Hon. P. P. Carey, 4th Dec., arrived at Bermuda, 12th, remained. CORNWALLIS, 74, Captain Sir R. Grant, 26th Nov. left Bermuda for Barbados, to convey troops to Halifax. CROCODILE, 28, Captain J. Polkinghorne, 16th Nov., arrived at Teneriffe. DIDO, 18, Captain L. Davies, C.B., 17th Dec. arrived at Gibraltar. DONEGAL, 74, Flag of Rear-Admiral Ommaney, 12th Dec., at Lisbon. FORRESTER, 3, Lieut. G. Rosenberg, 17th Nov., arr. at Madeira. HERCULES, 74, Captain Hon. M. Berkely, 12th Dec., at Lisbon. LEVERET, 10, Lieut.-Com. C. Bosanquet, 18th Oct., arrived at St. Helena and sailed. MINDEN, 74, Captain A. R. Sharpe, C.B., 29th Dec. at Gibraltar. NIMROD, 20, Com. J. Fraser, 9th Nov. at Jamaica. NORTH STAR, 28, Captain R. Hon. Lord J. Hay, 16th Dec., at Passages. ORESTES, 18, Com. J. F. Newell, 17th Dec., at Gibraltar. PEARL, 20, Captain Lord Clarence Paget, 5th Dec., at St. Thomas. PELORUS, 16, Com. F. Harding, 9th Oct. arrived at Kedgerree from Rangoon. PEMBROKE, 74, Captain F. Moresby, 19th Nov. left Malta for Athens. PHENIX St. V. Com. W. Henderson, 16th Dec., at Passages. PICKLE, schooner, Lieut.-Com. P. Hart, 12th Dec., at Bermuda.

PORTLAND, 52, Captain D. Price, 20th Nov., at Malta. RACER, 16, Com. J. Hope, 26th Nov., arrived at Bermuda, 12th Dec. remained. RAINBOW, 28, Captain T. Bennet, 27th Nov. left Bermuda for West Indies. RATTLESNAKE, 28, Captain W. Hobson, 9th Oct., arrived at Kedgerree. RHADAMANTHUS St. V., Com. Wakefield, 19th Nov., arrived at Malta. RUSSELL, 74, Captain H. Dillon, K.C.H., 19th Nov., arrived at Malta. SALAMANDER, St. V. Com. S. C. Davies, 16th Dec., at Passages. SAPHIRE, 28, Captain R. Rowley, 29th November, at Smyrna. SAPHO, 16, Com. T. Fraser, 28th Oct., left Bermuda for Jamaica. SATELLITE, 18, Com. J. Robb, 29th Oct. arrived at Jamaica; 5th Nov., sailed for Honduras. SAVAGE, 10, Lieut.-Com. Hon. E. Curzon, 16th Dec., at Oporto. SCYLLA, 16, Com. Hon. J. Denman; 27th Dec. arrived at Cadiz from Lisbon. SERPENT, 16, Com. R. L. Warren, 18th Oct. arrived at Jamaica; 1st Nov., sailed for Nassau. SKIPJACK, 5, Lieut. J. Robinson, 14th Oct., arrived at Jamaica; 31st sailed for Carthage. STARLING, Lieut. Com. H. Kellet, 22nd July, left Sandwich Island for N.W. America. SULPHUR, surveying vessel, Com. E. Belcher, 24th July, left Sandwich Island for N.W. America. TRIBUNE, 24, Captain J. Tomkinson, 25th Nov., left Malta for Palermo. TWEED, 20, Com. Hon. F. T. Pelham, 16th Dec., at St. Auders. WANDERER, 16, Com. T. Bushby, 26th Nov., received, Flag of Rear-Admiral Sir C. Paget, at Bermuda.

Births.

In Chester-street, Grosvenor-place, London, in December, the lady of Capt. R. Fitzroy, R.N. of a daughter.

At Gosport, the lady of Capt. Wilcox, R.N. of a son.

On the 24th January, in Montague-square, the lady of Captain Fuller, R.N. of a son and heir.

Marriages.

At Malta, on the 6th January, by the Rev. John Cleugh, Lieut. William Ro-

bert Mends, of H. M. S. Rodney, eldest son of Captain Mends, of H. M. S. Talavera, to Melita, third daughter of J. Stilton, M.D. Surgeon R.N.

On the 19th December, at Plymouth, Lieut. J. F. Wharton, R.N., to Eliza, eldest daughter of the late Timothy Lyon, R.N.

At the Subdeanery, Chichester, by the Rev. J. R. Munn, Lieut. W. N. Boyce, R.N. to Anne Helena, widow of Lieut. F. N. Price, Bengal Artillery.

At the Palace Chapel, Malta, on the 28th December, Dr. W. H. B. Jones,

Surgeon, R.N., to Ann, fourth daughter of the late Commander Silver.

Deaths.

Suddenly, on the night of the 9th January, at the residence of his son-in-law, at Dartmouth, Vice-Admiral R. H. Pearson.

On 12th Jan., very suddenly, at Hindlesham Hall, Suffolk, while on a visit to his son-in-law, Henry Thorold, Esq., Rear Admiral Robert Mansel, of Charlton King's, Gloucestershire, and second son of the late Gen. Mansel, of Cosgrave, Northamptonshire.

On the 27th December, at Bath, Rear-Admiral Wolley, aged 69.

In Manchester-square, London, on the

11th January, after severe sufferings. Lady Rowley, the wife of Vice-Admiral Sir Charles Rowley, Bart.

Suddenly, at Stoke, Mr. Walker, Surgeon, R.N., (1798), aged 61.

At Oakley-place, Southsea, James Henderson, Esq., Purser (1783.)

At Stoke, Plymouth, J. M. Marchant, Esq., Purser, R.N., aged 70 years.

On the 15th December, at Garland, near Mallow, county of Cork, after a few days illness, Richard P. Davis, Esq., Captain R.N. (1812.)

At Bath, Richard Williams, eldest son of Commander Champion.

At Deal, Mr. R. Weir, Master, R.N. aged 70.

METEOROLOGICAL REGISTER,

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

DECEMBER, 1837.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
1	F.	In. Dec. 29.86	In. Dec. 29.96	41	47	38	48	S.W.	S.W.	2	2	Bcp. 1)	B.
2	S.	30.22	30.36	30	37	29	39	S.W.	N.E.	1	1	Bcf.	Bcf.
3	Su.	30.42	30.44	37	37	26	38	E.	E.	1	1	O.	O.
4	M.	30.46	30.45	26	36	24	37	N.E.	N.E.	1	2	Bcf.	O.
5	Tu.	30.34	30.27	35	36	34	36	N.E.	N.E.	2	2	Og.	Og.
6	W.	30.10	30.00	36	34	33	37	N.E.	N.E.	3	4	Og.	Os. (3) (4)
7	Th.	29.76	29.73	33	35	30	36	N.E.	N.E.	2	2	Osr. (2.)	Odr. (3)
8	F.	29.64	29.61	34	38	31	41	S.E.	S.E.	2	3	Bc.	Bcp. (3)
9	S.	29.66	29.70	33	34	31	37	N.W.	N.	4	3	Og.	Or. (4)
10	Su.	29.99	30.01	35	37	32	38	N.	N.	2	2	Bcm.	Bcm.
11	M.	30.08	30.07	35	37	32	37	N.E.	N.E.	4	5	O.	O.
12	Tu.	29.96	29.87	32	36	30	37	S.W.	W.	3	3	Bo.	Bcmp. (3)
13	W.	30.02	30.07	24	41	31	41	W.	W.	1	2	Bcm.	Bcm.
14	Th.	30.24	30.22	33	41	32	43	S.E.	S.E.	2	2	B.	Bcm.
15	F.	30.12	30.04	33	36	32	38	S.E.	S.E.	1	2	Bc.	O
16	S.	29.86	29.78	36	44	31	45	S.E.	S.	2	2	B.	Bcp. (4)
17	Su.	29.82	29.78	48	48	43	49	S.	S.	3	5	Opd. (2)	Bcqr. (4)
18	M.	29.36	29.39	50	52	46	53	S.W.	S.W.	7	8	Qor. (2)	Qor. (3)
19	Tu.	29.06	29.93	44	50	43	52	S.W.	S.W.	3	4	B.	Or. (3) (4)
20	W.	29.57	29.32	53	53	50	56	S.W.	S.W.	6	8	Op. (2.)	Qop. (3)
21	Th.	29.92	30.10	41	42	41	43	N.	N.E.	7	3	Qo.	Bc.
22	F.	30.08	29.98	42	49	39	50	S.W.	S.W.	3	3	O.	Od. (3)
23	S.	29.92	29.92	46	49	47	51	S.W.	S.W.	3	3	Bcm.	O.
24	Su.	30.00	29.92	47	51	44	52	S.W.	S.W.	8	3	Opd. (2)	Og.
25	M.	29.80	29.88	50	54	48	54	S.W.	S.W.	5	4	Qbcp. (2)	Bc.
26	T.	29.93	29.88	46	49	40	50	S.W.	S.E.	2	2	Og.	Og.
27	W.	29.78	29.80	42	47	39	48	S.E.	S.E.	2	2	Og.	Og.
28	Th.	29.89	29.89	48	50	46	51	S.	S.	1	2	O.	O.
29	F.	29.85	29.83	45	47	43	50	S.E.	S.E.	2	3	Bc.	Bcpd. (4)
30	S.	29.96	29.96	48	51	45	52	S.	S.	2	3	O.	Bcp. (4)
31	Su.	30.00	30.01	44	49	43	50	S.	S.W.	2	3	Bc.	Bc.

DECEMBER—Mean height of the Barometer=29.947 inches; Mean Temperature=41.0 degrees; Depth of Rain fallen=1.20 inches.

JANUARY, 1838.

Month Day.	Week Day.	BAROMETER In Inches and Decimals.		FARRENHEIT'S THERMOMETER, in the Shade.				WIND.				WEATHER.	
		9 A. M.	3 P. M.	9 A. M.	3 P. M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A. M.	P. M.	A. M.	P. M.		
	In. Dec.	In. Dec.	°	°	°	°							
1	M.	29.97	29.91	43	47	39	48	S.E.	S.	5	5	Bc.	Or. (3)
2	Tu.	29.88	29.80	42	48	38	49	S.	S.	5	6	Op. (2)	Bcpq. (4)
3	W.	29.65	29.70	44	45	41	47	S.	S.	3	3	Bcr. 1)	B.
4	Th.	29.96	30.00	38	46	34	47	S.	S.W.	3	3	B.	B.
5	F.	30.24	30.24	34	35	33	37	S.W.	S.W.	2	2	Of.	Of.
6	S.	30.26	30.22	32	36	30	36	S.W.	N.	2	2	Of.	Ofr. 4)
7	Su.	30.28	30.30	32	34	32	34	N.E.	N.E.	3	3	O.	Bc.
8	M.	30.37	30.32	29	29	26	30	N.E.	N.E.	3	5	Beps. 2)	Beps. (4)
9	Tu.	30.17	30.13	22	22	21	23	N.E.	N.E.	7	7	Qos. (1) (2)	Qos. (3) (4)
10	W.	30.02	29.94	23	24	20	26	N.E.	N.	5	5	Beps. 1)	Beps. (3)
11	Th.	29.92	29.95	19	25	15	25	W.	N.	2	2	Os. (2)	Os. (3)
12	F.	30.27	30.31	15	21	12	22	N.E.	N.	2	2	Of.	Fb c.
13	S.	30.29	30.22	20	24	15	25	N.E.	E.	3	3	Bc.	O.
14	Su.	29.97	29.89	23	25	22	26	N.	N.E.	4	4	Os. (2)	Beps. (3)
15	M.	29.77	29.77	12	23	10	24	S.W.	S.W.	3	3	B.	Bc(mf.)
16	Tu.	29.84	29.90	24	28	17	30	N.E.	N.E.	1	2	Os. (2)	Os. 3)
17	W.	30.20	30.20	27	30	19	31	N.	N.E.	3	4	Os. (2)	Os. (4)
18	Th.	29.98	29.87	22	23	20	26	N.E.	N.E.	7	7	Qs. (1) (2)	Qs. (3) 4)
19	F.	29.76	29.72	18	19	17	21	N.E.	N.E.	5	2	Qs. (1) (2)	Bc.
20	S.	29.87	29.87	3	18	2	20	W.	N.E.	1	1	Bfm.	Bc.
21	Su.	29.89	29.79	23	30	13	31	S.E.	S.E.	3	3	Bc.	Bc.

NOTE.—The morning of the 20th was exceedingly cold, even so that about sun-rise my thermometer stood at 2 degrees above Zero, or 30 degrees below the freezing point. At the same time a thermometer, at a little distance from my residence, was observed at 1½ degrees; and another in the eastern part of Greenwich, at 1 degree only above Zero.

Abbreviations used in columns "Weather," and "Strength of Wind."

WIND.	WEATHER.
0 Calm.	b Blue Sky—whether clear or hazy atmosphere.
1 Light Air.	c Clouds—detached passing clouds.
2 Light Breeze.	d Drizzling Rain.
3 Gentle Breeze.	f Foggy—f Thick fog.
4 Moderate Breeze.	g Gloomy dark weather.
5 Fresh Breeze.	h Hail.
6 Strong Breeze.	l Lightning.
7 Moderate Gale.	m Misty hazy atmosphere.
8 Fresh Gale.	o Overcast—or the whole sky covered with thick clouds.
9 Strong Gale.	p Passing temporary showers.
10 Whole Gale.	q Squally.
11 Storm.	r Rain—continued rain.
12 Hurricane.	s Snow.
	t Thunder.
	u Ugly threatening appearances.
	v Visible clear atmosphere
	w Wet Dew.
	. Under any letter indicates an extraordinary degree.

The Figures in the Weather Columns.—1 denotes the first six hours of the day, i.e. from midnight to 6 A.M.; 2 from 6 A.M. to noon; 3 from noon to 6 P.M.; 4 from 6 P.M. to midnight. The marks (and) signify the first and last half of these intervals, and both together denote the whole interval. They are intended to express the time nearly when rain or snow fell. Thus, 2) signifies that rain or snow fell between 9 A.M. and noon; (1 between midnight and 3 A.M.; and (2) that it rained or snowed the whole six hours from 6 A.M., to noon; (3) ditto from noon to 6 P.M. &c.

ORIGINAL PAPERS.

MARCH, 1838.

PORT OF BOULOGNE.

THE Chamber of Commerce of Boulogne, has addressed the following letter to the editor of the *Annales Maritimes* :—

Boulogne-ser-Mer, April 13th, 1837.

Sir,—In entering the Port of Boulogne, there were formerly difficulties, which, though much exaggerated, gave it so bad a character, that freights were scarce and dear, and the rate of insurance always high. But, from 1834, the new entrance has alone been used, and the port registers show, that not a single accident has occurred here since. Nevertheless, the former unfavourable notions may still exist; for such impressions are not easily effaced, as they are transmitted in books of geography, and in the remarks of insurance companies long after their causes have ceased. We think, therefore, that, it is our duty to endeavour to destroy them, by publishing in the "*Annales Maritimes*," the following brief description of this new entrance.

The harbour of Boulogne, in the Strait of Dover, between Cape Alpreck and Cape Grinez, is in $0^{\circ} 43' 16''$, west longitude from the Royal Observatory of Paris, ($1^{\circ} 37'$ E. of Greenwich,) and in $50^{\circ} 43' 37''$ north latitude. The old entrance constructed in the last century was justly dreaded by navigators, and annually occasioned the wreck of several ships. In order to change this entrance. the French government approved of the plans of M. Marguet, the chief engineer, and in June, 1829, granted for that purpose, 1,600,000 francs, to which, in June, 1835, La Ville de Boulogne added the sum of 325,000 francs.* With these funds, a new entrance has been opened to the westward of the old one. Its general direction is 50° W. from the true north, or N.N.W. $\frac{1}{4}$ W., by compass.

It is high water at full and change, at eleven o'clock.

This entrance is bounded by two jetties. The one to the westward is solid up to the level of high water; it is thrown out to the length of 1,970 (English) feet, and follows the line of the rocky shore. The other to the eastward runs straight out, and the intervening channel is 230 feet wide at the bottom.

Spring tides rise 24 feet, and the neaps 17 feet; but these are the

* Altogether, 120,000*l.* sterling.

lowest tides, for, when it blows from the westward, which is the case for three quarters of the year, the springs rise to 28 feet, and the neaps to 19 feet. Thus, the sea rises here 24 or 28 feet, while in the neighbouring ports to the northward it rises only 16 or 19 feet. In the ordinary neap tides a depth of 4 to 6 feet, remains at low water as far as the jetties extend; so that, when the sea has risen by the shore for only one hour, vessels drawing from 7 to 8 feet, can come in and go out. At the equinoctial neaps, the depth which the water maintains in the narrow channel is much greater; thus, on the 14th, 15th, and 16th of March, 1837, there were from 8 to 9 feet; and during those three days the packets might have come in at low water. Even this day, April 13th, the English packet, *Firefly*, came in 5½ hours after high water. Another remarkable circumstance may be added to these advantages, which is, that high water remains stationary an entire half hour; although in the old harbour it scarcely paused for five minutes and then ebbed almost immediately. Thus it has happened that a steam-packet leaving Boulogne, was able to reach Dover, land her passengers, take in others, and return again to the place from whence she set out—during the same tide. In short, all vessels may, if they please, come in or go out an hour and a half later than they could in the old harbour.

One striking fact furnishes a happy proof of this great improvement. In the tempest of March 30th, 1836, the English brig, *George*, was on the point of being wrecked between Cucq and Etaples, six leagues west of Boulogne, and half a league from the shore; two of her chain cables were broken, and she held only by her last anchor. Some Boulogne fishing-boats went to the brig and saved the crew; but it was thought necessary to save the vessel also. On the 1st of April, therefore, the *Harlequin*, a steam-vessel of great power, left the harbour at nine o'clock in the morning, (she might have gone out half an hour sooner,) and after an absence of six hours she returned during the same tide, with the *George* in tow. Even an hour later she would have found water enough to place herself in safety between the two jetties.

Thus, in either tide, this harbour is accessible to vessels drawing from eight to nine feet during 6½ or 7 hours; which an advantage possessed by no other French port in the Manche, (English channel.) Government intends to improve it still more, by deepening the interior harbour which is five feet above the level of low water, spring tides, and by giving it the same depth as the entrance.

A bill was presented to the Chambers on the 8th of March, in order to effect this purpose, by which, vessels drawing sixteen feet will be able to anchor at all times of tide.

The great object of all these works having been to make it a harbour of refuge for ships surprised by bad weather in the channel, it

may be useful to add, that in the construction of the jetties, every-thing has been done to facilitate the movement of the vessels, and that the system of signals, both for day and night, has been made as perfect as possible. And this great end has been attained; for every month an increasing number of vessels anchor there. The entrance is so easy, that captains who have been once in, take no pilots, even at night; and yet, since 1834, when the old entrance was entirely annulled, not a single disaster has occurred; not one even of the numerous fishing-boats which come in and go out every day in the roughest sea, has received any damage. The registers of the harbour will prove all this. Finally—the packet intercourse has increased in the following proportions:—

In 1834	19,061	passengers.
In 1835	25,910	„
In 1836	55,512	„

Thus, then, the difficulties of the old harbour no longer exist, and Boulogne harbour may be considered by seamen and by insurance companies, as one of the safest and the easiest in the channel.

Signed by the Members of the Chamber of Commerce: Al. Adam, Mayor, Achille Adam, President; Baret. Ternaux, Bonnet, Cary, Mabraison, Chauveau Sire, Al. Crony, Trudin Roussel, Leroy Thierbault, Secretary.

MORGAN ROCK, INNER PASSAGE TO TORRES STRAIT, AUSTRALIA.—

Ship Lost.

New South Wales, Sept. 9.

“THE Duke of York was totally lost on the 14th August, 1837, in latitude 23° 40' S., longitude 151° 30' E., five miles south of Facang Island, on a reef not laid down in the chart. Captain Morgan and crew arrived at Sydney in the James Watt, steamer.”

The foregoing notice appeared in a recent number of the “Shipping Gazette,” and deserves careful attention. On a reference to Captain Flinder’s large chart, corrected by Captain King, to 1826, we find no notice of it. It appears, however, to be particularly dangerous to vessels bound through Torres Strait from Sydney; and from the circumstance of H.M.S. Satellite, in 1829, having passed outside of it, many have no doubt passed on both sides of it without knowing of its existence. The latitude and longitude given of it as above, by the “Shipping Gazette,” places it ten miles N.E. by E., by compass, of the northern extreme of “Facing Island” not “Facang Island,” as stated, and by keeping the island on board, it will be therefore avoided.

LATITUDES AND LONGITUDES IN THE GULF AND RIVER ST. LAWRENCE—
By Capt. H. W. Bayfield, R.N.

[Continued from page 85.]

Names of Places.	Point where observed.	Latitude North.	Longitude W. of Greenwich.	Variation W. year observed.	Apparent time of high water.	Rise and fall at Springs and Neaps.
Gulf of St. Lawrence.—North Shore to Mingan.*						
		° ' "	° ' "	° ' "	h. m.	feet.
Appetatat Bay	East Point	50 16 43	63 0 53			
Betchewun Harbour..	S.E. Pt. of Islet in	50 14 21	63 13 13	27 31	11 12	5 Sp. T. 3 N. T.
Clear Water Point ...	S.W. extreme	50 12 35	63 29 47	(1831)		
Island of Anticosti.						
North Point	High Water mark	49 57 40	64 11 43	24 30		
Station on N. coast...	"	49 56 57	64 16 57	24 0		
"	"	49 49 58	63 26 49			
Observation Bay.....	W. side of Rivulet	49 38 59	62 44 7	24 30		
Bear Bay	Entrance of River.	49 30 30	62 27 12	24 30		
Eastern Point.....	High Water mark	49 8 25	61 42 42	25 19		
				(1830)		
Southern Point	"	49 3 43	62 18 13	23 45		
S.W. Point	"	49 23 53	63 38 30			
Cape Henry.....	S.E. side of in Ellis Bay	49 47 50	64 25 27	24 22	1 43	7 Sp. T. 4 N. T.
West Point ..	S.W. Ex. H. Water	49 52 30	64 34 51			
North Coast from Mingan to Saguenay.						
Mingan Harbour.....	Sandy Pt of N. side of W. of H. Bay Co. Post Summit	50 17 32	64 4 39	25 30	1 7	7 Sp. T. 4 N. T.
				(1831)		
Mingan Island		50 12 56	64 10 14			
St. John's River	E. pt. of entrance	50 17 11	64 22 59			
Bay of Manitou R....	E. Point	50 17 42	65 16 52	24 30		
Point Charles	S. extreme H. wtr.	50 15 25	65 51 33			
River Moisis	S.W. Pt. of entran.	50 11 24	66 7 24	24 8		
				(1831)		
Seven Is. Carousal...	S. extreme	50 5 28	66 26 18			
Seven Islands Bay ...	Sandy shore	50 13 7	66 26 50	24 11	1 20	9 S. T. 5 N. T.
				(1831)		
Port St. Margaret ...	Extreme	50 2 33	66 47 28	23 34		
				(1831)		

* The magnetic Needle is, every where along the north coast, more or less disturbed by local attraction, to the amount of 4° or 5°, the granite rocks on it abounding in iron ore; but as the variations given are the result of several observations, they are much more correct than any which could be obtained on board so small a vessel as the Gulnare, off the coast, where there is almost always a considerable swell of the sea.

Among the islands at Mingan the local attraction disturbs the needle as much as half a point.

Names of Places.	Points where observed.	Latitude North.			Longitude W. of Greenwich.			Variation W. year observed.		Apparent time of high water.		Rise and fall at Springs and Neaps.
		°	'	''	°	'	''	°	'	h.	m.		feet.
Cawee Islands	West Point	49	49	29	67	4	40	22	0	1	50	9 S.T. 5 N.T.
Egg Islet.....	N.W. Point	49	38	21	67	12	53	21	35			
Trinity Bay.....	S.W. Point	49	23	47	67	20	55	21	30	1	55	10 S.T. 6 N.T.
Point des Monts * ...	South extreme	49	18	49	67	26	5	19	37			
" "	Lighthouse.	49	19	43	67	24	45					
" "	Obs. station	49	19	25	67	25	17	20	13			
Godbout River	Trading Port	49	18	33	67	38	52	20	20	1	52	11 S.T. 6 N.T.
St. Nicholas Harbour	Obs. Station	49	18	34	67	49	25	19	57	1	55	12 S.T. 7 N.T.
Pt. St. Nicholas	Extreme	49	15	55	67	42	53					
English Point	Station	49	12	34	68	11	46	20	20			
Manicouagan Pt. ...	S.E. extreme	49	6	13	68	15	44	20	0	2	0	
Bersimis Point	South extreme	48	54	5	68	41	18	19	0	2	0	12 S.T.
Jeremie Island	Trading Port	48	52	53	68	49	35	19	0			7 N.T.
Port Neuf †.	Church at Trading Port	48	37	25	69	8	43	17	36	2	10	14 S.T. 8½ N.T.

South Coast from Cape Despair to Green Island.

Cape Despair	Extreme	48	25	30	64	21	15					
Gaspe Basin	Sandy Point. N.W. side of entrance.	48	49	53	64	31	24	22	4	2	30	7 Sp. T. 3 N. T.
Douglas Town.....	Beach High Water	48	46	32	64	24	54	21	39			
Cape Gaspe.....	Flower-pot Rock	48	45	10	64	12	5					
Cape Rozier	Ex. seen from Cape Gaspe	48	51	45	64	14	31					
Great Fox Bay	Centre	49	0	8	64	25	35			1	0	7 Sp. T. 3 N. T.

* From Point des Monts to the seven islands the tidal streams are weak and irregular, but the flood is usually the strongest, and ships beating to the westward can always make way to windward.

† From the Saguenay river to Manicouagan Point, there is a regular stream of flood and ebb, influenced, however, in strength and duration, by the winds. The stream of flood extends out about three leagues from the coast. In the middle of the Estuary below Bic, there is a space of nearly still water, whilst to the southward the current runs always down, excepting the stream of flood along the south coast, too narrow to be of any use to ships. From the Manicouagan to Point des Monts there is very little stream of flood, excepting close in shore. Round Point des Monts the superficial current always runs down, although checked by spring tides and easterly winds.

Names of Places.	Points where observed.	Latitude North.		Longitude W. of Greenwich.		Variation W. year observed	Apparent time of high water.		Rise and fall at Springs and Neaps.
		° ' "	° ' "	° ' "	° ' "	h. m.	feet.		
Bay two miles east of Magdalen R.	Station	49 14 53	65 19 42	22 0					
Mount Louis R.	Entrance	49 14 37	65 46 18	21 30		1 30	3 Sp. T. 4 N. T.		
Cape Chat*	Extreme Point	49 6 0	66 48 2	21 27					
River Matan	Inner S.W. Pt. ent.	48 51 43	67 34 12	19 30	(1830)	2 0	12 S.T. 6 N.T.		
Little Metis	Reef	48 41 18	68 4 22	18 30	(1828)	2 10	13 S.T. 8 N.T.		
Mount Camille	Summit.	48 28 44	68 15 38						
Barnaby Island	N.E. Point	48 29 43	68 34 45	18 30	(1831)				
I. Bic†	S.E. extrem. of S.E. Reef	48 25 17	68 51 13	17 36	(1830)	2 15	14 S.T. 8½ N.T.		
N.E. Razade Island.	Station	48 12 35	69 10 52	17 34	(1829)				

GRAHAM SHOAL.—*Mediterranean.*

HER Majesty's Cutter, Hind, under the command of Lieutenant Codd, left Malta on December 3rd, and proceeded to Graham Shoal, off the coast of Sicily, for the purpose of ascertaining its existing state. She returned on the 17th and reported as follows:—

Owing to the very unfavourable state of the weather, they only succeeded in obtaining soundings on the shoal on two occasions, on the 14th and 16th instant, and both times were compelled to abandon the further prosecution of the survey in the boats, by an increasing wind and sea. They however succeeded in determining that the depth of water on the shoalest part was only one and a half fathoms; large white stones and seaweed.

Around this spot they had frequent soundings, in seven, eight, and nine fathoms. The shoal, within the line of forty fathoms' depth,

* Along the south coast from Cape Chatte to Gaspe, the superficial current runs almost always down the estuary, or to the eastward.

† In neap tides there is very little stream of flood inside, and none outside of Bic. In springs the stream of flood runs up weakly inside the island and close along the main to the westward. In short, all the way from Green Island to Gaspe, there is no stream of flood excepting close in shore, or along the bank of soundings, which extends from the shore. Further out the stream is always down the estuary; on the north coast, on the contrary, there is a regular stream of flood and ebb.

At Matan the winds have much influence, so that at times in spring tides the water rises fifteen or sixteen feet, at others only eight feet. In neap tides I once saw it rise only four feet.

appears to extend about two cables' length from N.W. to S.E., and a cable's length and three quarters from N.E. to S.W. the bottom consisting principally of black ashes and cinders. Outside this, the depth rapidly increases, and at a quarter of a mile from the shallowest part, there is no bottom, with sixty fathoms. The plan of the shoal drawn from the above data, must necessarily be only an approximation, but one important fact is established: namely, that the shoalest water remains the same as when surveyed by H.M.B. Rapid, in 1833, from which it may be inferred, that it is now a permanent shoal; and, as it is dangerous, even to the smallest vessels, a knowledge of its position, bearings of the land, &c., (which have been already published in the Nautical Magazine for April, 1832,) cannot be too widely known by seamen navigating these seas.

ALBERT.

HARBOUR OF ST. THOMAS.—*Virgin Islands.*

THE following marks for entering the Harbour of St. Thomas, by day or night, from the eastward, passing inside of Buck Islands, have been published by Captain Rhode, of the Danish Royal Navy:—

Little Saba must be kept at least double its apparent breadth to the southward of Water Island. This mark must be kept on until Frenchman's Cap is in a line, or to the western side of that saddle, which is formed by the division of the two Buck Islands. The first mark leads clear of the Packet Rock, and the second clears the Triangles.

Running inside of Buck Islands by day, and in clear weather.

You may bring the northern point of Water Island clear of the southern point of Cowell's Batteries, which will clear both the Packet Rock and the Triangles.

When Christian's Fort shows well clear to the westward of the point by Muklenfel's Battery, you are to the westward of the Triangles, and can steer into the harbour.

L. J. RHODE.

CLAUDIUS ROCK.—*Sunda Strait.—Ship Struck.*

WE have had occasion, before now, to point out to our readers the existence of dangers in the strait of Sunda.—In our volume for 1833, (p. 562,) we gave the position of a dangerous rock off Crockatoa, discovered by Captain Lutke, in the Russian Corvette, *Seniavine*, and in our number for September last, (p. 570,) we gave some important information of dangers off Pulo Sebucco, (*Sebooko*) from Captain Creighton, of the ship *Cordelia*. To these we now add the following

extract from that invaluable paper, the "Shipping Gazette;" requesting the attention of our readers to it. We should also be thankful for a corroboration of its existence, from any who may have the opportunity of obtaining it.

BOSTON, (U. S.,) Nov. 21.—The following extract from a journal kept by the first officer of the ship *Claudius*, Captain Isaac Winsor, on her late passage from Manilla to Boston, is interesting and important, as the existence of the rock to which it refers, in the direct passage through the straits of Sunda, has been doubted by many navigators.—“ May 15th, at meridian, the *Button* bore S. S. W., distance 7 miles, strong S. W. and W. S. W. current, from 4 to 5 knots. At 1½ P. M., felt the ship strike her fore-foot, and again underneath the fore-hatch. Clapped the helm hard up, and hove aback,—boxed the ship off, and cleared; hove the lead over instantly, but got no soundings at 30 fathoms—saw the false keel come up astern. The *Button* bore S. by E., distance 1½ miles. Thwart the way, S. W., distance about 5 miles.” The *Claudius* drew 19 feet water, and had on board, a cargo of Manilla Sugar and Hemp, 900 tons and freight. What is very remarkable, is that this ship, after being discharged at Boston, was hauled up on the railway for repairs, when it was ascertained that her fore-foot was wrenched off; a large space of copper and plank under her larboard bow (garboard streak) was pared off, as with a drawing knife; farther, as it was found, a point of rock of the bigness of a man's head, which had worked its way through the plank, and became fastened between the timbers, filling up the hole it made. In this condition the ship completed her passage from the straits of Sunda to Boston, over 12,000 miles of ocean, without leaking materially, or any other damage.

ON THE QUALIFICATION OF THE OFFICERS OF THE MERCHANT SHIPPING.

As the efforts of the various members of the legislature, who were endeavouring to improve our Merchant Shipping, have been for some time suspended, in consequence of the rejection by others, of Mr. Buckingham's bill, it may not be out of place at present to bring under the eye of the public, certain improvements which seem if not to be altogether sufficient to satisfy the object of the general inquiry into that important subject, to be at least of service in the meantime, not only as a partially beneficial measure; but as a measure which must also be most available in co-operation with those, that may, at any subsequent period, be passed into a general and permanent law. The subject, it must be admitted, is one not without difficulty; and the object of this paper having also been to a certain extent anticipated by some of the clauses in the bill alluded to, may possibly be

again brought under consideration. But as it is evident now that some years must elapse before any law concerning it can come into operation through a medium of that description, during which time many additional evils must necessarily be added to the list; and as it is sufficiently important and pressing in itself for special inquiry, and would be best done justice to apart from the details of a general bill, it is hoped that the following suggestions, if not given immediate effect, in the manner to which they are entitled, will at least receive the necessary fair and impartial consideration.

The subject before us is the manner in which the Merchant Shipping of the present day are in general commanded:—the lamentable deficiency of knowledge and education of the majority of the masters and mates, and the consequent necessity for the interference of the legislature for regulating their qualifications. By many this is regarded as a matter of mere secondary consideration: nearly the whole of the losses that take place being attributed, either to an imperfection in the ship, or a general casualty of the sea, falling under the head of “sea risk”—and, in fact, so strongly does this opinion seem to be incorporated, even among those who it would be supposed ought to be aware of the opposite fact, that a correspondent in one of the late numbers of the “Nautical Magazine,” fixes the losses arising from these causes at three out of four. But, as experience unfortunately has proved, and as it must be evident to any one who will take the trouble of looking into the annals of shipping for a few years, that, while many hundreds of the most miserable hulks have gone to every quarter of the globe, year after year in safety, that, as many thousands of first-class vessels without being exposed in any respect to the least additional risk, have become a prey to the rocks and other ravages of shipwreck, it is feared that the losses which may properly be attributed to this cause must be held to be very few in number; and that the question which this important fact naturally suggests must admit of but the one answer; that, as there must be some extraordinary cause for the same, it can only be accounted for in the manner alluded to. Such, in fact, even on the face of the matter, is the only conclusion that can consistently be allowed. Suppose the case, for instance, of two vehicles going on one road—one old, crazy, and insufficient, and the other new, strong, and well adapted. Would it be said, if the new one was invariably meeting with accidents, where the other always escaped, that nothing was to be attributed to the driving or management? Most certainly not! Precisely similar to this, then, are the cases of ships—with this difference, that in some instances they may have the elements to contend with—but a difference certainly of very trifling moment; and the consequences of which, abilities, skill, and attention, can very easily avert. If the vessel be contiguous to land, or places of difficulty, (and it may here be observed, that in this there appears to be the principal danger) by ascertaining, through the

necessary scientific inquiries, the exact position in which she is, and thereby, timely keeping out of danger's way, there is scarcely any case in which a vessel will unexpectedly be overtaken. Better evidence, indeed, of this (and it must be observed that it, at the same time, serves to support the general proposition) cannot be had than that which is afforded by the Shipping of the Royal Navy. These vessels are everywhere—in all quarters of the globe, in all straits, channels, and places of danger and difficulty; and yet, how many of them will be found recorded in the list of losses? Certainly, comparatively few to that of the other. The simple reason is, that in the one case the officers being skilful and attentive, of course, are aware of and prepare for danger in time, and necessarily avoid it; whereas, in the other, the want of such precautions, renders it impossible for them to have this advantage, and inevitably leads to the opposite result.

It is frequently maintained, no doubt, and among others, the position is strongly advanced, in the same paragraph above alluded to; that if ships were constructed on a stronger principle much evil might be prevented. But to this I apprehend a sufficient answer presents itself, in the simple fact alone, as proved by the records of wrecks of British shipping, that there is not more than one out of every seven vessels *lost at sea*; or in other words, that six out of seven of the losses that take place, are upon the rocks. It is certainly in vain to say, that if vessels are lost upon the rocks, that want of strength is the occasion of their getting there!

I think I may, with confidence, therefore, take upon me to say, that by the legislature interfering and enforcing masters and mates to be properly experienced in their profession, as with the officers of the royal navy, danger may be avoided, and three out of five of the losses that occur at the present time may undoubtedly be prevented—and certainly keeping in view that in all other professions particularly the medical and that of the law, qualifications are rendered imperative by statute; although, in the mean time, ignorance in either of them involves no more than one sacrifice, it is not very obvious how the like qualification should not be rendered imperative in the other where it must necessarily involve both. Lawyers require to be qualified; because, if ignorant, the property of the community may be sacrificed by them; medical men require to be qualified, because, if ignorant, lives may be sacrificed—and yet the officers of the merchant shipping are allowed to have charge of both at the same time, in many instances, lives under their charge to the number of hundreds, and property to the value of a number of thousands of pounds, without the slightest restriction, or a single question being put, whether they are actually capable of doing more than writing their own names. Surely it is time that an appeal should be made to the legislature, and that something should be done on a subject so momentous. If only twenty lives in a year can be saved—nay, if only five, or that one worthy family can be

saved from destitution, or one single widow be saved her mournful tear, a sufficient recompense would be given for all the expense and trouble of the measure, however great it would be.

Now what I would humbly propose is this,—that an act should at once be passed, appointing a board of examiners in any two or more ports of each portion of the United Kingdom, as might be fixed, for the purpose of examining the officers of merchant ships as to their qualification, and declaring, that from and after a certain date no vessel should be cleared out at the custom-house of any port of Great Britain or Ireland, without the master first producing to the collector and compfroller of the customs, a certificate of having passed the board, or having been previously recorded on the back of the register as such; and that after a certain other date, (say six months thereafter, (the same provision should be extended to mates; these latter officers in the general case not requiring at the present to attend so strictly to navigation as masters, would necessarily be the better for additional time to prepare.

The board I propose to consist of a post-captain, two lieutenants, and a master of the royal navy, who should be paid a respectable salary each, in addition to their government pay; that they should be constantly resident at the ports referred to, and sit at least once a week, or oftener if necessary, and that the examination should be as follows, namely:—

I. That masters of vessels going beyond seas should be examined upon such points as might be approved of by the Admiralty, or as might be conceived by the board to be best adapted, in a practical point of view, for ensuring safety; involving, 1st, The necessary knowledge to be expected in the experienced practical mariner; and 2nd, Their skill in the necessary nautical astronomy and working of lunar observations.

II. That mates, that is, chief mates, of vessels going beyond seas, should be examined in the same manner, with this difference, that the board should be entitled to exercise a discretionary power in respect to strictness with them.

III. That masters of coasting vessels should be examined as to their capabilities of managing their vessels, particularly in cases of difficulty; of marking out their course upon the charts, and measuring the distances thereon, and as to their knowledge of the tides and the effect of the different changes of the moon upon the same. And

IV. That persons who act as mates of coasting vessels, or officiate, in the capacity which that title embraces, should be similarly examined, with power to the board to use the like discretion as in the other instance of the mates of foreign vessels, due regard being always had, in the whole of the cases, to the nature and extent of the persons examined.

I would suggest, that those who were not masters previous to the passing of the act, should first obtain a mate's certificate before being entitled to apply for examination, and that in each case a fee should be paid by the party on going forward for examination; for instance, masters of ships trading abroad, 2*l.* 2*s.*; mates, 1*l.* 1*s.*; masters of coasters, 1*l.* 5*s.*; mates, 17*s.* 6*d.*; and they should form a fund to be applied yearly to meet the expense of keeping up the board. It is not probable, of course, that after the first year or two they would be at all sufficient for this purpose. But a very few hundred pounds annually would be required out of the public purse.

It might be but proper and just also to have a court of review, as it were, to obviate any charges of rejections or refusals of certificates being made unjustly; and to serve this end I would suggest that on a party being rejected by any one board, he should be entitled to have the grounds of his rejection stated in writing from under the hands of the chairman, and on production thereof, should be entitled to be examined by any of the other boards, and if by them passed, held entitled to his certificate.

I am aware that as respects the necessity of the mates' qualification, there may be some objections stated, inasmuch as that the like may be said not to be altogether necessary. But to obviate, at once, this objection, it is only necessary to bring under notice the very important fact, that during a great portion of the twenty-four hours the mate is the officer that is solely in charge, and the great additional necessity besides him, to have a qualified person to have lives and property in charge of, in the event of the master either becoming unwell, meeting with an accident, or dying. It must be admitted that the master cannot always be on deck, and that vessels during a great portion of their passages, are, for many days, in places of very intricate navigation. It must, likewise, be admitted, that a single hour in the greater number of cases, may either save or lose the vessel, and certainly, when this is the case, and when the mates have, at times, the sole and exclusive charge, and frequently when experience is most needed, it is not very obvious that with anything short of a qualification equal to that of a master, the safety of lives and property can ever be properly attended to. Why, in point of fact, the stupidity, or want of experience of a mate in cases where skill is required, even for a single hour, may put a vessel in a situation, and in danger from which no human skill or ingenuity can afterwards extricate her.

But, further, I would observe that in addition to the great benefits to be derived from a system of qualification, an inducement also is offered as well to young navigators to improve themselves, as to many young men of respectability to take advantage of the sea as a profession, that otherwise, in its present state, they look upon as far from coming up to their views. At present the ignorant are classed with the experi-

enced, and no difference known; and at present any man, however ignorant, if reputedly sober and honest, will get the charge of a vessel, and attain the rank of master; and which necessarily, of course, prevents parties from aspiring to knowledge, and others from becoming members of a profession where none is supposed to be required; whereas, under the suggestions which have been here made, the acquisition of knowledge is not only rendered imperatively necessary for those who wish to get forward, but also an inducement held out for the same, in the shape of a diploma or commission, which must always carry with it the necessary respectability and station in society that science so justly merits and ever should command. It is a profession which, on its own merits, is highly honourable and independent, and in which, even in its present state, many men of the first respectability are engaged, and of course, even although there were no other consideration in the question at all, it is but proper to have it publicly and generally acknowledged and considered so, in order that any supposed want of respectability that may otherwise be attached to it should not be a barrier to any member of the community joining it, however respectable. In fact, by having masters of education and respectability, a comparative benefit must be derived from shipping, as well by the ship-owners, as by the public at large.

In conclusion then, and on the whole, I hope ere long to see petitions on the matter presented to the House of Commons from every part of the United Kingdom. I may add, that if the matter is moved in, I shall probably submit some further special suggestions on the practical part of the measure and its results, on a future occasion.

PHILO-NAUTICUS.

P.S. Since writing the above, I have been informed that two petitions upon the subject, at least upon the qualification of masters, have already been presented. This is so far satisfactory, and I hope will serve as an inducement to others to bestir themselves in a similar manner.

EXAMINATION OF THE OFFICERS OF THE MERCANTILE MARINE.

THE investigation of the late Shipwreck Committee, in the cause of humanity, and in which many painful truths were told, begins to operate on the minds of thinking men. It is rather surprising that it has not done so before. The frightful loss of so many valuable lives and property, to an immense amount, especially of late years, has in various ways been accounted for, not to be denied, even by those who are acquainted with the manner in which the shipping interest of this great maritime country is conducted. Too true it is, that ships were, and perhaps still are, sent to sea badly equipped, as regards rigging, stores,

nautical instruments, &c., as well as being quite unseaworthy, even in their hulls. Too true, also, that they were commanded by youths, or very incompetent men—neither seamen nor navigators; some of them by good seamen, but unfortunately for themselves and crew, not sailing under the flag of temperance. Therefore, why should the number of wrecks excite any surprise? No attempt was made to remedy all this till last year; but, strange to say, although certain measures were proposed, such is the perverseness of human nature, they were all thrown overboard.

A system of examination of the commanders and mates of our merchant shipping was among the measures proposed to the late House of Commons, only to receive opposition and defeat. But why should underwriters oppose such a measure? Their interest surely lies in the safety of the ship and cargo: and do ship-builders imagine that if their ships were stronger and better, they would have less to do—that their profits would be less? Be this as it may, it is, at all events, gratifying to perceive that, at Sunderland, Newcastle, and Shields, the system of the examination is fairly adopted, the friends of the measure thus virtually acting for themselves, and securing one of the most humane measures ever presented to, or sought for, from the wisdom of parliament.

This determination is highly commendable; it will ever redound to their credit, and public opinion will, before long, oblige its general adoption.

If in the royal navy, and the late company's service, a system of examination has been deemed requisite for the protection of lives and property, surely to deny that the same system should be adopted in the general merchant service, is to deny the propriety of its application in those, and to assert that the competency of the person entrusted with such a serious charge is unquestionable in the very profession where it is most to be doubted. It is notorious, that many of my brother officers in command are mere youths; others, young men of only three or four years' experience. Some obtain it from interested motives, others by purchasing a large share of the vessel; and some again, by securing the ship-owner a certain portion of freight, while others succeed to command by the death of the captain; and if they, or some one for them, bring the ship home safe, they generally retain her. Some captains are well known to be excellent seamen, but not navigators. Some are excellent navigators, but for want of experience, are not seamen; while others again, are neither one nor the other: being related to the owner, they are placed in command, and nursed by an experienced chief mate. But while these different classes are to be found among the commanders of our merchant shipping, there is yet another, though few it may be, who, from their complete knowledge of all the branches of their profession, and their gentlemanly bearing, may justly be considered an ornament to it or any other; men who would be as

much at home on the quarter deck of a man of war as any nobleman of the royal navy. If it be considered requisite to examine a river or channel pilot, touching his abilities for that situation, surely it is infinitely more so that captains and officers proceeding on a long, and probably disastrous voyage, entrusted with the safety of lives, and vast property, should prove their competency to such a serious and sacred trust. And yet, gentlemen of education, members of parliament too, there are, who treat with indifference and scorn, that, of which every reflecting mind sees the necessity. The "Shipping Gazette," in speaking of the late bill said:—"One maritime gentleman would not support the bill, because *nothing was said about the cause of shipwreck*, and this he uttered on the face of the report. Another, although he admitted that it was a very sad thing so many ships, with their crews, went to the bottom through bad management, would not permit any examination, because, said he, *a great many masters would be found untrustworthy*. A third, whose impertinence is more matter of astonishment than his ignorance, declared the bill to be a *legislative monstrosity*, and told the house that its provisions would be injurious to commerce. Yet we find that the shipowners of Sunderland, (who are doubtless the best judges of their own affairs,) have taken upon themselves to enforce a regulation, which, by their own representatives was objected to, as being useless and mischievous. The utility of the regulation is obvious enough to every person, who possesses even but a trifling acquaintance with the subject, and its adoption offers, at least, a practical lesson to the representatives alluded to."

That infinite benefit to all concerned in shipping, would result from a system of examination being adopted, is manifest to every reflecting mind, and is further evident, by the statement of a highly respectable witness, who proved from public documents, that ninety-five ships, with every soul on board them, foundered during the short period of sixteen months. Such appalling and frightful loss of valuable lives and property would never be credited, were it not acknowledged as fact by Lloyd's List; and, be it remembered, that the aforesaid loss is independent of 600 others, that are annually wrecked. Why this fearful and truly dreadful sacrifice of lives and property, when much of it can be so easily remedied, by adopting a system of examination, similar to that practised by Messrs. Daniel, and Co., of Mincing Lane, which highly respectable firm, it has been asserted before the Shipwreck Committee, by the witness already alluded to, only lost one vessel (a bark)* during the period of twenty years. This success in their shipping department, the said firm mainly attribute to the system they have long adopted, of having their captains and officers properly examined.

* A small vessel. The loss was unavoidable, having occurred during a violent hurricane in the West Indies. She was blown ashore from her anchorage with many others.

Will any man have the temerity to deny that other merchants and ship owners would not derive the same benefit, by adopting the same wise measure?—There can be no doubt of it. Yet, strange to say, it is not generally attended to, notwithstanding so many losses from ignorance and inexperience.

What infatuation can have possessed the great commercial body of the nation, to have overlooked this radical defect, in the conduct of their marine for so long a time? Are not the crews of our West India-men, South Seamen, &c., &c., worthy of the same care and attention, for the preservation of their lives, as those of the royal navy and East India ships? And, are not the ships and cargoes of sufficient consequence to their owners, to cause them to employ all due precaution for their safety? If so, why are so many valuable lives, and so much treasure, suffered to be under the charge of men, whose competence to the task is, to say the least of it, very questionable? when it may be so readily reduced to a certainty, by a general resolution of the British merchants, to adopt a plan, similar to that of the East India Company, obliging every commander, and two officers of each ship (with three in larger ones) to undergo an examination, and to produce a certificate of their abilities, as a *sine qua non*, before they are permitted to undertake the office for which they are candidates.

The examiner should be appointed by a committee of merchants, and no certificate should be admitted, unless from such accredited examiner; and who, perhaps, it would be expedient should be sworn to act without partiality or prejudice.

Were the plan now recommended, to be universally adopted among the ship-owners of this great commercial country, it is hardly necessary to say how much benefit must accrue from it, how many valuable lives would be preserved, and how much property would be saved to the merchant, ship-owner, and underwriter.

It is well known to all persons connected with shipping, that there is not, in this country, any established court for the examination of captains and officers in the merchant service, whereby the competency of either may be proved, to the satisfaction of those most interested—the merchant and underwriter. And it becomes the more surprising, that throughout England, the greatest maritime nation in the world, such a wise and judicious measure should be treated with indifference and scorn, when all other nations have adopted the regulation from very remote periods; and, notwithstanding the necessity of some system of examination for the protection of lives and property, has been clearly proved, there is no prospect or probability of its ever taking place, if left to the *tender mercy* of ship builders and underwriters. Hence, it must emanate from kinder beings, or be insisted on as a government measure.

By a system of examination being adopted, it is not meant to imply, or assert, that merchants and ship owners would be exempt from losses

that are incident to maritime adventure, nor would it prevent disputes, but its adoption would materially lessen the number of both.

A LONDON TRADER.

[Our correspondent forwards us, two cases of recent occurrence, in support of his arguments, one of which we quote here, and the other, that of the *Tiger*, as it appeared in the *Times*, stating that the mate, after the captain died, got out of his latitude, &c. the particulars of which will be found in p. 67 of our last number, and to which we may merely add here, that the distance from Astova, where she was wrecked, to Juan de Nova, where she was supposed to be, is about 200 miles.—Ed. N.M.]

Thames Police.—*Seaman's Wages.*—Important to Mariners.—Mr. William Ware, the master and part owner of the brig *Frances*, of Scarborough, was summoned before Mr. Ballantine and Mr. Greenwood, to show cause why he refused to pay a balance of wages due to William Stevenson, for his services as mate on board. The claim was 51*l.* 9*s.* 2*d.*

The claim was resisted by the captain, on the ground that the complainant was not competent to perform the duties of mate, for which he had signed articles, at four guineas a month, and that he was compelled to engage another mate at Trieste, and pay him that amount of wages, which he now sought to deduct from the balance claimed by Stevenson, still paying him able seaman's wages only for the homeward voyage.

The mate said he told the captain, when he signed articles, he was not a navigator, but Mr. Ware shipped him as chief mate, because he was recommended by the last captain of the vessel. He did duty home as a carpenter and seaman.

Captain Ware said the articles were read over to Stevenson before he signed, and this note copied from schedule B, in the act of parliament, also: "And if any seaman shall enter himself as qualified for a duty to which he shall prove to be not competent,* he will be subject to a reduction of wages hereby agreed-for, in proportion to his incompetency."

Stevenson.—The last captain knew I was no scholar.

Captain Ware said, when he shipped the complainant he believed him to be a competent man. On the way to the Mediterranean, from Newcastle, the vessel was wind-bound, and he was obliged to put into Falmouth one night, at a late hour, and a few minutes after, the complainant came to him and said he could not take the latitude, and was not a good navigator. He sailed a few hours afterwards, and discovered, during the voyage, that he was quite incompetent.

Mr. Ballantine.—Why did you not ship another mate at Plymouth, instead of taking this man?

* This, in some cases, would be a difficult matter to prove, and still more so the degree of incompetency but a system of examination and certificate, would effectually prevent all litigation on the subject.

Captain Ware.—I was unable to do so, for I had to sail next morning. The man is a good coasting sailor enough, but he cannot prick the course of the ship, take an observation, or perform other duties required of a mate, nor has he the talent or inclination to learn.

Stevenson admitted his defects, as mentioned by the captain.

Mr. Ballantine.—You shipped as mate ; that supposes an expert seaman who can navigate the vessel, take an observation, and all that ; you are not entitled to what you ask.

Stevenson said twelve guineas was a large deduction.

Captain Ware said that was what he had paid to a skilful mate, whom he shipped at Trieste. He brought home nineteen passengers, and he could not, without being reckless of their safety, and disregarding the interests of his owners and the underwriters, have brought home the vessel without a competent mate ; for, if any accident had happened to him, the vessel, in the hands of such a man as Stevenson, would have been in danger.

Mr. Ballantine said he was anxious that seamen should get their wages, but he could not say the complainant was worth four guineas a month. Captain Ware's offer was a very fair one. Stevenson ought not, in common honesty, to have gone out as mate of the ship, for if the captain had died he could not have taken the command. He felt bound to dismiss the case, and the captain would, no doubt, pay what he had offered—able seaman's wages only.—*Morning Herald*, 21st October, 1837.

P. S. The following letter, addressed to the Editor of the Shipping Gazette, bears directly on the present subject, and demands particular attention :—

Sunderland, Feb. 7, 1837.

Sunderland Marine Board.—Sir,—The appalling facts respecting the loss of life and property by shipwreck, detailed last year before a committee of parliament, produced a thrill of horror throughout the nation. It was proved that the cause of the evil was the ignorance, incompetence, and misconduct of persons entrusted with the command of vessels. To remedy this, the formation of Local Marine Boards, for examining the qualification of such persons, was recommended. In conformity with this, a board was established in Sunderland. The friends of humanity hoped that it would accomplish the end for which it was instituted. But to do so, it is manifest that the members composing it should be men of the highest talent and strictest impartiality. That the utility of the Sunderland board is already more than doubted, that a growing contempt for its decisions is felt, is a fact which is notorious.

Of the cause of it, you will have little doubt, when you read the following account (which is but a sample) of the examination of a young man belonging to the Neptune, of this port. It might be necessary to state, that this young man had received an excellent education, was of

good moral character, and, as a seaman, was spoken highly of by all with whom he had sailed. But had he been the reverse of all this; had he been ignorant, immoral, and unqualified, he was surely entitled to be treated courteously. You will not, I am sure, deem this language too strong when you read the following insulting questions put to the candidate on his entering the court.

Examined by the chairman; 1st question.—Do you know where the main braces lead? 2nd—Do you know the marks of the lead line? 3rd.—Can you rig and unrig a ship? These questions were answered in the most respectful manner. The candidate was then catechised respecting the course to Yarmouth roads, and behind the sands, and answered promptly all but the following question. How does the buoy at Cross bear by Yarmouth church? (there are two buoys, he did not specify which.) This the young man confessed himself unable to answer without the assistance of a chart, for which he asked. It was refused, and he was dismissed by the chairman in the following laconic manner:—"Thou must go a little longer to sea, my man." Now, Mr. Editor, had the question put been one which it was essential to know, there would have been no cause of complaint; but I have asked a number of nautical men the same question, and have not found one able to answer it without the assistance of a chart. Why? Simply because it was not necessary to be known. The bearings could not be used at night, and are not necessary by day. Other causes have tended to bring the board into disrepute. They receive fees, but no account is rendered of their amount; they are an irresponsible body. A teacher of navigation is a member, and he enjoys the great privilege of examining his own pupils. This, besides being a gross injustice to other teachers, will soon degenerate into a job. In short, the whole constitution must be altered. The members ought to be annually elected by the Shipowner's Society, and fixed salaries paid, or an account of the fees rendered. None but nautical men should be appointed, and those not superannuated. I am, Mr. Editor, yours respectfully,

AN OWNER.

STEAM BOAT ACCIDENTS.

MR. EDITOR,—The lamentable loss of life occasioned by the late shipwreck of the steam vessel Killarney, now that the inquest has terminated, may probably be adverted to with more propriety than when a verdict of the jury was pending. And while it may be considered impolitic to interfere with the enterprising spirit of steam navigation companies, or that of individuals which these companies may see fit to place in command of the steamers belonging to them, the loss of the Killarney, and others, seems to demand that some means should be established as a protection to inexperienced

voyagers, who, probably anxious to pursue their voyage, and placing full confidence in those who are in command of a vessel, embark at a period when the weather is unpropitious for putting to sea. To guard against such cases, competent individuals should be appointed at each of the ports, where steam-boats are employed as passage vessels to convey passengers across our channels, who should be authorized to hoist a foul weather flag, if, in their opinion, it was dangerous to put to sea. This would at least afford information to passengers; and, if after this notice, they persisted in proceeding, a national duty would have been performed, and the sufferers, in the event of being wrecked, would have only themselves to blame, while the commanders of vessels would at the same time be relieved from much responsibility, as it would not then be left, as it is now, to their decision, whether they would be justified in not putting to sea, and they would be free from that censure of their employers, which is now too frequently incurred, and the fear of which induces them to hazard a passage.

Again, as much danger is to be apprehended from the extensive fires necessary to be kept up in order to propel the vessel, particularly in heavy seas: no steam ship should be furnished with a certificate of sea worthiness, unless the space in and about the fire places were fire proof and closed from every other part of the vessel. A code of steam boat signals* should immediately be established to be used both during fogs, and by night; and not only, no steam vessel be cleared at the Custom House without being provided with them, but also an individual appointed expressly in each vessel, to attend to them.

These regulations, and others, to proportion the quantity of live stock each vessel should be permitted to carry, according to her tonnage, or capacity, would be the means of reducing the risk and danger of steam navigation, which has now become such a powerful agency of conveyance and communication between the various sea ports of this country.

A LOOKER ON.

INSTRUCTIONS FOR PRESERVING SPECIMENS OF PLANTS.

THE following valuable instructions for preserving the specimens of plants were supplied to the French ships *Astrolabe* and *Zelee*.

The vegetation of most of those countries at which the ships *l'Astrolabe* and *La Zelee* will touch, is absolutely unknown to botanists. We cannot, therefore, point out towards what classes of vegetables the attention of the medical officers who have been charged with the collection of objects of natural history, should be most particularly

* Means are now amply afforded for obtaining such signals.

directed. But, for this very reason, we think they will do well to collect every species which presents itself; unless, indeed, they are certain that we do already possess it. It is very desirable that their researches should not be confined always to the coasts, whenever the interior may be accessible. In islands of the same sea, and lying in nearly the same latitudes though the vegetation changes but little on the coasts, it is not uncommon that the botanist who penetrates further in, finds many remarkable varieties. It is there that the flora of every island is shown in its true character. All specimens should, when possible, be gathered in flower as well as in fruit, and each specimen should be ticketed with the name of the place where it was found. If they are ligneous, small pieces of the stem should be preserved, in order to show the structure and grain of the wood, and these should be marked with the corresponding numbers.

The first stage of the expedition, according to the orders of government, will be Sandwich Land and New Shetland. Even there, in spite of the rigour of the climate, there is a season for the germination and development of plants; and, though the vegetation there may be confined to some insignificant aquatic species, yet it derives importance from the latitude of their habitat, as being the type of the vegetation nearest to the antarctic pole yet known. For this reason we hope that the season may permit the collection of even the most trifling plants of that southern land.

The passage of the expedition, through the Strait of Magellan, leads us to hope for a more extensive knowledge than we possess of the flora of the Patagonian coasts, and Tierra del Fuego. Foster and Commer-son, who touched there, brought home very few specimens of plants, but amongst them there was a species of beech, which spread in extensive forest along the coast, and a primrose, which differs very little from the *primula farinosa* of our Alpine mountains. These, with the information gained from M. M. D'Urville, and Gaudichand, and of the vegetation of the Falkland Islands, seem to indicate a flora which bears considerable analogy with that of northern Europe. Considered under this view alone, it would be well worthy of attention.

Chiloe will be a new field to us, and though Valparaiso is better known, specimens from thence should not be neglected.

We need not give any special directions about the numerous islands of Polynesia, which the expedition will visit. We are entirely ignorant of their vegetation, and the collection made there will probably contain many interesting species, if it be not confined to the shores.

The same may be said of New Guinea, a vast country, which as yet is only alluded to by naturalists, to express their regret at its not being better known.

The western shores of New Holland have been far less frequented than the eastern. Much advantage, therefore, in a botanical point of view, may be derived from the visit of the expedition to the English

colony on Swan River, where they will probably see some of the species formerly found on different parts of the western coast, by R. Brown, Labillardiere, Lechenault, and, also those collected by the Baron De Hugel, in 1833, on the banks of the Swan River, and on the Arlington Mountains, where it rises. But, by directing their researches towards the more remote parts of the country, they will undoubtedly discover mingled with the plants already known, many other species of which botanists are at present ignorant. We may observe, that, from what we already know of the western and eastern coasts of New Holland, we are enabled to conclude, that the two floras, notwithstanding numerous traits of resemblance, do not differ less from each other, than the eastern and western floras of North America.

While at Hobart Town, nothing will be easier than to penetrate into the interior, and there to make an ample collection. That country is rich in plants, which will one day be naturalized in our southern provinces; but it is from New Zealand that we expect a harvest which will be the more valuable, as those two great islands are so little known, and that the latitudes in which they lie, indicate a temperature analogous to that of Europe; and besides, two whole months will be employed in exploring them.

The three months to be devoted to the islands Nionha, Mitchell, Peyster, St. Augustin, Marshall, the Carolinas, should not be unfruitful; none of those islands have ever contributed anything to botany. The same may be said of Mindanao and Borneo.

If, in the course which the expedition follows from the coasts of Chile to those of New Guinea, and from Van Diemen's Land and New Zealand, to the Carolinas, circumstances should permit the collectors to extend their researches, we have every reason to believe, that a few species, picked up by chance, will not be the only fruit of their labours. No doubt they will take advantage of such a good opportunity to establish new facts respecting the geographical distribution of plants, a most important part of phytology, as it is connected, not only with the natural history of the globe, but also with that of the various tribes of the human race. They will seek, in each locality, for those plants which give to its vegetation a peculiar character; and they will note the nature of the soil, and the height of those situations above the level of the sea.

Wherever man is seen labouring to obtain from the earth, crops adapted to his wants, the form of the instruments of husbandry, the agriculture, the plants which are cultivated, and the produce obtained should be the objects of careful examination. These agricultural enquiries should be made in the Dutch and English settlements, with no less attention than in the abodes of the natives. Nothing should be neglected to procure information relative to the Merino flocks sent to New Holland, and the advantage which England may derive from breeding these animals upon so large a scale, in a country where the ground pays a very trifling rent.

It is not sufficient to make herbals, to mark the locality of each specimen, and to describe the most remarkable species; but the seeds must be preserved and every effort made to transport to Europe the living plants. Could not the Zelee bring home, even some ligneous species, were they only those which grow at Amboina? Among the seeds she may collect, we should like to find some of the Antarctic Beech of Commerson, or of the beech which Cunningham discovered in Van Diemen's land, as well as of the flax of New Zealand which has hitherto been propagated by cuttings only, but which sooner or later will be profitably cultivated in the south of France, and without doubt also in Spain and Italy. All kinds of seeds will tend to the advancement of botany, and will therefore be acceptable, but those specimens will be the most prized, which, besides throwing fresh light on the science, may have the not less important merit of being useful to mankind, and of being as capable of cultivation in our country as in their native climate. Formerly it was very difficult to transport living plants in long voyages; everything combined to destroy them, and on their arrival great sums were to be paid without the least compensation. This sad result had been so frequently repeated, that the administration of the museum of natural history, determined on having seeds only sent from distant countries, but even this means of tardy propagation had also its failures, as many of the seeds lost their germinating power before arriving at their destination. Now, several methods as simple as they are sure, enable us to receive from the most remote foreign countries, both seeds and plants, with the certainty that a great number of them will arrive in good condition.

The English gardner Luschnath, has contrived the following method. At the bottom of a strong case, which is water-tight he forms a bed of clayey soil, worked into a very wet paste, on which he places horizontally, and by the side of each other the young ligneous plants, stripped of all their leaves. He covers them with another layer of argillaceous earth in the same humid state as the former, and beats it forcibly with a large wooden mallet, in order to expel the superfluous water and air, and to leave only the space filled by the plants. He continues to place alternately, layers of plants and of well compressed earth until the case is full, when he closes it hermetically.

Mr. Fischer the director of the Imperial garden of St. Petersburg, wrote to us last year, "Ligneous plants packed according to the method of Luschnath, were sent from Rio Janeiro to St. Petersburg, and after a voyage of more than five months, the greater part of them were alive, though the same species had perished when packed in the usual manner.

This method is equally applicable to seeds, they are placed in layers upon clay, but well separated from each other, so that in case

of their beginning to shoot during the passage, which is not uncommon, they should not injure each other. By this method, seeds of many kinds of trees or shrubs which are known soon to lose their germinative property, arrive alive in Europe, and will thrive there if they are properly attended to. Probably this method would not suit those small seeds, in which the embryo is very delicate. It might however be tried; but in that case, a double quantity of the seeds should be collected; some might be preserved as above, and the rest mixed with very fine sand in phials hermetically sealed.

It is obvious that seeds of a certain size, would be the most advantageously preserved by packing them in argillaceous earth; and Luschnath's method is especially recommended for the seeds of the *Palmae Laurineæ*, *Sapindi*, *Lecythidæ*, *Quercineæ*, and in general for the oily seeds which change in the open air sooner than others. It might also be used for such seeds as do not germinate till they have been long in the ground.

The same box may at once contain both seeds and plants. Another preparation for the conveyance of plants, invented by Dr. Nathaniel Ward, of London, presents a still better chance of success than that of Luschnath, but it requires that the plants should be exposed to the action of light during the passage, and preserved from any serious injury. This preparation which we will call a travelling green-house, consists of a lengthened box with a glass roof formed by two sashes, making an acute angle. The two ends of the box continued below the bottom about an inch, serve to support the whole apparatus, and rising in an acute angle above the opening part of the box secure the sides of the roof. One of the sashes is fixed, the other being attached by screws, may be closed or removed, but it must fit tightly, for during the voyage every part of the box must be strictly shut. Cross pieces of wood about an inch and a half wide and three inches asunder, are so adapted to the lower and upper parts of each sash as to serve both to give it strength and to support the panes of glass which are small and very thick, and lapping like the tiles of a roof, are cemented in every joint.

The size of these travelling green-houses may vary, but that they may not encumber the sailors in the working of the ship which might indirectly endanger the existence of the plants, they should be made of small dimensions, and thereby are the more easily rendered impermeable to air and wet. Generally speaking, the most convenient dimensions are the following, and perhaps it would be better to make them rather smaller :

Length	.....	36 inches.
Height	.....	28 ———
Width	.....	20 ———

The depth of the box, independent of the roof, can scarcely be less than ten inches, whatever may be the other dimensions. It should be

understood that the wood must be well seasoned, and the joints fitted with great care; and the outside must have several coats of oil paint. Iron drop handles should be firmly fastened to the two ends at the height of a foot; and the glazed sashes should be protected by a strong and close woven wire net-work, supported by several iron rods sufficiently thick to withstand any severe shock.

When the Travelling Green-house is to be stocked raise the moveable sash and put at the bottom of the box about an inch and a half of argillaceous clay which has first been wetted and so well kneaded and beaten as to contain no perceptible water, cover this bed with good mould, neither too strong nor too light, and well pulverised. In this mould the plants are to be laid sometimes with the roots bare, sometimes with a ball of earth wrapped with dry moss and tied round with rushes or twine; and sometimes in pots. The first method is best suited to succulent plants which recover easily after having been long out of the ground. The second, applies to all ligneous plants. The third, however, seems to deserve the preference if the pots can be so packed as not to break each other. To prevent this, they should be separated by small slips covered with moss, and being bedded in the earth are fixed at each end to the sides of the box.

Plants thus arranged and left to themselves being secured from either drought or damp, will travel for a very long period and through great changes of latitude and climate without their health being sensibly affected. They remain in a state which may be termed stationary, their nutrition and waste being equal, respiration goes on, and the green parts preserve their colour, though there is no perceptible growth.

For several years past, collections from London to Calcutta, and from Calcutta to London, have succeeded admirably. Messrs. Loddiges of Hackney, who possess the richest nursery garden in Europe, send continually to New Holland, to Van Diemen's land, and to the East Indies, empty boxes which are returned full. The museum of natural history in Paris has just received, for the first time, one of these boxes for which it is indebted to the enlightened kindness of Mr. Wallich, director of the garden of Calcutta. This box contained fifteen most valuable specimens which scarcely appeared to be more exhausted than plants taken out of the green-house at the return of spring; although the voyage had lasted between eight and nine months. Government, immediately forwarded to Mr. Wallich a box made on the same plan, with a collection of plants from the south of Europe, and from the hot regions of America. Cel's family, whose hereditary zeal in introducing exotic plants into France is known to every one, followed the example and sent a similar box to Mr. Wallich.

It cannot be doubted that the use of these travelling green-houses which may probably be greatly modified and improved, must materially

contribute to the progress of phytology, and we dare affirm, that it will be no less favourable to the naturalisation in Europe, of a multitude of useful and agreeable species, which would have been already reckoned among the riches of our soil, if the art of bringing them here alive had been sooner discovered.

We hope that contrivances like those we have described, may be supplied to the medical officers whose duty it will be to collect objects of natural history. The expense is too trivial to be any obstacle; and we know, that a well executed model of the travelling greenhouse has been sent to Toulon with instructions for the due management of the apparatus.

NEGRO SLAVERY.

In a recent parliamentary discussion on the slave trade, a noble Lord, after stating that the effect of the various treaties between the British Government and foreign powers, had aggravated the condition of the slave; and that the prescribed period for emancipation was too far distant, undertook to shew, that it was going on now at an increased rate—to make out that “accursed traffic,” which was supposed to have been put down by all Europe, was still flourishing more than ever, and that it was literally “tearing out the very bowels of Africa.” In his exertions to crush this monstrous traffic in blood, and thus to effect the designs of the benevolent individuals with whom that object originated, whatever may be their result, Lord Brougham will assuredly carry with him the best wishes of every humane mind; and whether he commences his crusade against it with a clear or a limited view of the whole subject, it may perhaps be immaterial, as long as he accomplishes his purpose,—as long as the slave trade is, in the full sense of the word, fairly suppressed.

The statements above alluded to, were received in the house of Lords as facts, and the dreadful picture with which they were accompanied of the effects of the slave trade was considered by no means exaggerated; nor is it supposed so here. On the contrary; it is freely allowed that this traffic in spite of the vigilance of our cruisers on the coasts of Africa and America; in spite of all the laws made to put it down, is even more active and flourishing than ever. But, in his ardour to aim a deadly blow at this increasing evil, in which it is devoutly to be wished he may succeed, his Lordship has been too precipitate, and in the very outset has arrived at one conclusion which a more deliberate view of the subject would have shown to be wrong. In fact, Lord Brougham has not adopted that lofty, sound, and statesman-like course of argument, which might have been expected from the learned Lord; and when he said that in commissioning our cruisers to capture slave vessels, the allowance of “head money,” or so much

per head, for each slave captured, besides the vessel herself, *is the cause of this fearful increase, and all the evils which attend it*, his Lordship allowed his imagination to be clouded with false appearances, and in a hasty moment uttered charges against a valuable class of public officers, actively engaged in suppressing it which are totally devoid of foundation.

In alluding to a certain item called "head money," an allowance in the shape of prize money, to naval officers stationed on the coast of Africa, for every slave captured and landed at Sierra Leone, Lord Brougham is represented to have spoken as follows:—"It must be admitted that, at first sight, this looked like an additional impulse to cruizers, to capture the vessels in which the desperate miscreants engaged in this felonious traffic, or piracy, carried on their horrid business. But it had this effect, that, the cruizers by the hope of obtaining the head money were directly induced not to capture the slave vessels, till they had gone into the African ports to embark their cargo of human beings, and sailed out to insult the highway of nations by this complicated robbery, piracy, and murder; so that the interest of the captor was to let her have those unhappy beings on board; to let her complete her cargo of slaves; to let her clear from the African port, and not to attempt to capture her, much less to prevent her from committing the crime of taking the cargo on board; but, to enable her to wait till she had completed that criminal act, for until that act was completed, the right to have the money ("head money") could not attach. But, what then? The vessel went out,—passed to the coast of Africa; she was fitted out with bulkheads, in a way in which a slaver was known to be fitted out, with a kind of accommodation for those human beings that were to be the cargo, with all the manacles, fetters, and other instruments of torture, and detention on board,—with a sort of musket that never fired twice without bursting. No steps were taken to prevent the cargo being put on board: no interference with the cruizers because that would prevent the object * * * the cruiser did not go near the port, because it was aware of the effect that would be produced by that; that would prevent the cargo from being brought down, and prevent the slaves from being shipped. The object was, that such a number should be shipped as to entitle the captain to his "head money." Accordingly, they took them on board, and sailed out to sea. In a climate where light winds prevailed it was not difficult to ascertain a pretty accurate notion of the time that they would take. They went out to sea just so far as to leave them able to descry the mouth of the river from the topmast; but not to be themselves seen. The felons who were engaged in their crimes ashore, in putting men, women, and children, on board, thinking that the cruiser was not on the spot, shipped them on board the slave vessel; and the slave vessel flattering itself there was nobody to watch or interrupt her cruise, moved out of the harbour

and put to sea. She was afterwards chased and taken, and then her rigging, hull, and cargo, were sold and the slaves liberated."

Such was the account that Lord Brougham gave in the House of Lords, of the process of capturing a slaver; and had his Lordship not thrown into it one feature, which, while it distorts the whole picture, and places the officers who command the cruizers in no favourable light, it might on the whole have been considered tolerably correct. Lord Brougham is stated to have obtained his information from Messrs. Laird and Oldfield; and, although naval officers are also said to have been his advisers, it may be doubted whether they could not have given his Lordship a more correct view of the subject of head money than he appears to have taken. It is not intended to question the accuracy of Mr. Laird's information, whose views on the mode of suppressing the slave trade may be good; but, to shew that an inference drawn by the noble Lord, which inference is necessarily injurious to the character of naval officers, is not correct.

But, in order to obtain a fuller insight into this process, one which cannot be too fully exposed; let us trace the slaver from the commencement of her voyage. She fits out in a Portuguese port, (it is not very long ago that one fitted out at Gibraltar, under the very guns of a British fortress!) and down she goes to the coast, with a cargo ostensibly of nothing; but having actually cloth, bad spirits in plenty, rum, &c., ammunition in the shape of barrels of powder, muskets and beads and such baubles, and dollars, besides the provisions for the crew, and the implements of her calling, viz.: manacles and the gratings for her slave decks; these being carefully concealed, she is consequently light, and draws little water, her build being such as to ensure swiftness; on which, and the careful management of her captain success depends. She has no great difficulty in arriving on the coast, of getting into one of the numerous rivers from which this detestable traffic is carried on: being light, she outsails a cruizer, and drawing little water she can keep in shore unobserved; but, even if she be boarded by one of Her Majesty's vessels, what then? She is merely a trader—there is no proof of her being actually a slaver, although there is every appearance of it and she cannot be detained. She makes her port, perhaps the river Cameroons, lands an agent, and runs over to Prince's Island, or some other place for water for the voyage. In about a month again she returns to the river, where her agent has been doing his business, which is to negotiate with the natives for slaves. These may, or may not be plentiful, according as the demands may have been, or as the state of the wars in the interior of the country may have been. At all events, the business goes forward, and in comes the slaver for her cargo. Now is the time that the real work begins, and now the harvest of the slave-dealers, and now is called into action, all the energy and art of the captain of the

slaver and his crew, on which depends their success. Delay on these occasions is of no consequence to the vessel, and she may wait a month longer before the slaves arrive, and albeit, another month or more before she can get way. The slaves arrive, some ill with fatigue from the effects of a long journey, some dispirited and broken-hearted, torn from children and friends and all that is dear to them; some sullen, and reckless of life, having suffered the utmost of human misery; some with that unaccountable gaiety of manner to be found in the negro and some with a cheerfulness and contentment which proclaims no regrets on leaving their native country; one, which to them, has all their lives been a land, not of rejoicing, but of slavery, insult, and oppression, in another shape. These poor creatures arrive at their port of destination, a miserable wretched crew, snatched from their native abode by the strong arm of their more powerful countrymen, from whom, they find no response to their cries in bondage, and transferred by them to others no less cruel, either to endure the aggravated horrors of a voyage, and to end their lives in slavery; or to avoid it by a timely relief from their suffering in a more speedy death! Let the advocates of slavery, if such monsters there be, contemplate this scene; let them consider well the horrors of the voyage which awaits them, and then let them ask themselves, shall there be no one to perform the part of the good Samaritan—shall there be no one to fulfil the office of “neighbour to him that fell among thieves”?

But, let us proceed. The vessel is ready for her slaves; they are arrived and lodged in the slave-house, hard by in the woods, concealed of course from view, and, indeed, in general not easy to be found. The first thing to be done is to ascertain if the coast be clear of cruizers; if so, the slaves are no sooner down than hurried on board, and the next day outside the river on their voyage; but if it be known that a cruizer is in the offing and in ascertaining this, extraordinary means are employed, for the whole coast is leagued together, operations are suspended, and many days may elapse before the vessel starts, and not before it is supposed that the cruizer is gone. Gone, however, she is not; artifice has been successfully employed; the slaver is captured, and sent to Sierra Leone, where she is adjudicated a lawful prize, sold, the slaves liberated, and the captors receive head money of 5*l.* for each negro.

Now Lord Brougham is stated to have said that it was “the interest of the captor to let these unhappy beings on board, to let her complete her cargo of slaves—not to attempt to capture her much less to prevent her from committing the crime,” that there “is no interference with ( by) the cruizers, because that would prevent the object,” which object was, that “such a number should be shipped as to entitle the captain to his head-money.” It is really to be regretted that the acknowledged talents of the noble Lord have been here misdirected, and that in thus perverting the course of his argument, he has

cast an unworthy imputation on the naval officers on the African station. The motives which guide their proceedings according to his Lordship, are far different from those of the enemies of slavery: they who witness the heart-rending scenes—painted, and truly painted, in such forcible colours by his Lordship,—they who behold the aggravated suffering of the negro in all its acknowledged horror, these men are stated to permit the whole process of embarking, to allow the slaver to come out with her living cargo; to be, in other words, accessory to the fact, and setting aside all worthier motives, to discard all other objects from their mind but that of obtaining “head-money.” And what course would his Lordship have them adopt, according to his views of the subject? If his words are reported correctly he is stated to have said that the cruizers knowing a slave vessel to be preparing in any one of the rivers, “instead of going in, or taking measures of co-operation with the authorities on shore to prevent the taking the cargo, were in the habit of going so far off as they could not be seen from, though they could see the port; and in this manner, first enticing the vessel out, and then capturing it.” And is this really Lord Brougham’s meaning? Alas! how little he knows of the real state of the case, how contracted the view his Lordship has taken of the subject. The “authorities on shore!” mark that word—one that should be written in letters of blood—black as are the skins, aye, the hearts of those authorities—those very “authorities on shore.” And who are these boasted authorities with whom Lord Brougham would have our naval cruizers take measures, to prevent the living cargo being embarked? They cannot be those of Lisbon, Cadiz, or any ports of Spain, Portugal, or France, much less can they be of those distant parts of the world, the Havana or the Brazils, all of them accused of sending forth slavers. To admit this would be a direct negative to his Lordship’s argument as no cruiser can leave her station for such a purpose; her duty is to see that treaties between nations are observed to the utmost—treaties between sovereigns. Who then are the authorities alluded to? Are they the authorities on the spot? Surely, it must be so, to these they are to go forthwith to prevent the diabolical measures that are going forward. But who are these authorities? Are they the accredited agents of any European or Brazilian power? Who are they? Authorities indeed. Humanity recoils at the horrid fact, they are the very countrymen of the unhappy slaves themselves! Men, in whose breasts reign the feelings of the brute—men, in whose uncivilized minds, nought but self enjoyment stands prominently forward; and men from whom the nobler sentiments of their fellow men in another happier clime are as far as the poles asunder! Such men as King Boy, and his hopeful sons, King Friday and King Jacket. These are the “authorities” with whom Lord Brougham says our cruizers are to take measures. Was there no one to have instructed his Lordship before he advanced so empty, so fallacious

an argument? Was there no one to have whispered to him who these authorities were? That these authorities, call them kings if you please, for they call themselves so, that they are parties concerned in the traffic,—that they derive profit by it, and receive the price of blood! Mr. Laird himself, quoted by Lord Brougham, says, of the European slave dealer, “he stimulates the *ignorant savage* to steal and sell his brethren.” Truly these would be authorities indeed to apply to on such a purpose, and to induce them to forego those profits, profits too, which to them are greater than those of the palm oil or any other trade of the coast. Could they justly estimate the high powers of his Lordship—could they comprehend his arguments, and appreciate the force of his well pointed sallies, it would require more than his persuasive eloquence to induce them to forego such profits. Does not his Lordship know that the whole coast, from the mouth of the Benin to the Congo, is leagued in carrying on this detestable traffic,—that the natives, aye authorities! and all consider it a common cause, and keep such a look out in their furtherance of it, that no man of war can approach the coast without the intelligence of her arrival being quickly spread far into the interior, and by such timely notice, the slave proceedings suspended where she may be.

But suppose that the *authorities* agree with our officers in opinion that their object is very proper, which, if applied to, no doubt they would do, and a cruizer enters a river where she knows a slaver to be lying, and finds her there; she sends her boats on board of her, and they find appearances are quite confirmatory of suspicions, but still something will be wanting to enable the cruizer to touch her: and many a cruizer has thus been disappointed in a prize; and just as long as the cruizer remains, and by her presence overawes the proceedings of the slave dealers, just so long and no longer would they be prevented from going forward; just so long would the *authorities* accede to the expostulations of the officer, because they well know that their attempts to get the slaves clear off the coast in his presence would be unavailing. But what would be passing in another place while this treaty is going forward with the authorities, and where the cruizer is not present? Why the very slaves which are prevented from being embarked by the cruizer's presence, would in the mean time, be hurried off to another part of the coast, probably not many miles distant, and there embarked in a trice and perhaps half way on their voyage while the cruizer is resolutely guarding the port in which the suspected vessel is lying; the vessel that was to have carried them to their destination. And what would be said of other ports, places which, in the interval of remonstrance with the authorities, would send forth their slaves by hundreds, the vessels slipping out and pursuing their voyage cheerily, their heartless captains, as well they might, laughing and enjoying the idea, that a British officer could be so new as to think of treating with the authorities, the very parties concerned to put down their law-

less trade, to arrest them in their guilty career—no! there is little hope from the authorities on the slave coast, and no occasion to refer to them on such subjects; the presence of a British cruiser before their eyes is quite sufficient to check for the time, all their proceedings.

But is this the mode adopted by the officers of the navy in putting it down; is this the kind of system pursued throughout a coast which Mr. Laird says is some 3,000 miles in extent, in which are to be found the harbours of these slave dealers, amounting to some dozens, and which, if it were pursued, would be little short of burlesque? Is this the kind of system adopted? Most certainly not:—no, that method has been adopted which experience has shown to be most effective; that which Lord Brougham has described, not with the motive of obtaining more head-money, which Mr. Laird does not attribute to them, but with the certainty of capturing the vessel, with proofs on board, with which there can be no mistake, no denying what is her real occupation. Had not Lord Brougham been reported to have said distinctly that the object of the cruiser was, that “such a number should be shipped as to entitle the captain to his head-money,” words which are not to be mistaken, these observations would not have been called for: not that they are intended in vindication of a class of officers of an honourable profession, who need no such fortuitous aid, whose reputation is above such feeble charges; but rather to show how absurd, how futile is the assertion made by Lord Brougham. Mr. Laird, deprecates the system of head-money, and says, blockade every port, give the officers promotion, and the men double pay for the monotonous duty they perform, and “it would save British officers from the disgrace of receiving prize money for saving their fellow-creatures from bondage.” But Lord Brougham goes a step further, he infers at once that the officer permits the embarkation, does not interfere, so that he may be entitled to his head-money, making himself what in forensic language would, perhaps, be *particeps criminis*, aiding and abetting the fact. Doubtless, there are bad as well as good, cruel as well as humane in all ranks of society, and the navy may be no exception to the rule. But does any one really suppose that a single slave more or less is embarked on these occasions in consequence of this course; that the vessel does not come out to encounter her voyage with as many as she can stow, as many as the slave dealer has the means of purchasing, or as many as are to be had? Most assuredly so; he knows too well the futility of his remonstrances with interested authorities to prevent their embarking, while the vessel is yet lying empty in the harbour; he knows too well the absolute absurdity of the attempt to blockade so great an extent of coast as that on which the slave trade flourishes, the number of harbours polluted by this traffic, to think of suppressing it effectually with some ten or a dozen vessels; and he adopts as a certain, a sure mode of settling the business, the plan of keeping out of the way

when proceedings are going on, and to be in the way just when he ought to be if circumstances of wind and weather permit, and he captures his vessel under circumstances that set aside all difficulty of condemning her as a prize.

In doing this, however, it cannot be denied that there is much risk, and cases are known besides those cited by Lord Brougham, of many poor wretches being thrown overboard to perish in the sea. But the number saved should appear as a set off to these; the annals of Sierra Leone speak to that, and we have Mr. Laird's own testimony of the good effected, and which might be extended at that place. "The schools," he says, "at Sierra Leone and Cape Coast, have done most, if not all the good that has been done. I know an instance of a captured slave, resident at Fernando Po, who has sent his son to England for his education! All the chiefs upon the coast would gladly pay for the board and education of their children." They escape then, from their merciless tyrants if they have the good fortune to be captured by a cruiser, and a far different life awaits them at Sierra Leone; but if they are prevented from embarking by the presence of a man-of-war, what awaits them then from the hands of their fellow men? Why to remain in duress while they cannot be embarked, and if the place is closely beset to be driven to another part of the coast for the same purpose, if they do not sink by the way-side before they get there. On this ground, then, it is clear that persecution awaits the unhappy slave from the hands of his countrymen on shore, and from the hands of his masters on board, if he escape from the cruiser. It is evident then, that on the vigilance of the cruiser alone, in surprising the slaver suddenly, depends the last forlorn hope of the unhappy slave to be rescued from the doom to which he is condemned. The system, therefore, pursued by our naval officers on the coast, is to be encouraged, as most effectually carrying forward, as far as lies in their power, the suppression of the slave trade, and humanity urges its continuance,—not the hope of head-money.

That the state of the interior of the country in point of slavery is as bad as it well can be—that the unhappy slave is doomed to slavery if he remain or is carried off, we have tolerable proof of from Mr. Laird's own account, which derives importance from its recent date. Speaking of Fundah, a place visited by his party for the first time, the population of which he estimates at about 15,000, the proportion of the slave population to the free is nearly as five to six, or nearly one half. "At present," he says, "the whole country is in a complete state of disorganisation, the inhabitants of each village warring with their neighbours. The consequence is, that except in the immediate vicinity of the towns, the land lies waste and uncultivated, as the natives are afraid of being carried into slavery." Lander, found the sandy islands in the Niger covered with their huts, whither they had sought a retreat from their pursuers, the torrent by sudden freshes, to

which the river is subject, having risen, had, in his presence, washed many away which were unable to escape. Thus, the unhappy weak class of negroes on whom all this vengeance descends, become a prey to their oppressors, or fall in their attempts to escape their iron grasp.

Speaking of the labour of making palm oil in comparison to slave-hunting, he says, "the capture of a man partakes of the exhilarating nature of a hunt, while the collection of palm oil is devoid of excitement, and becomes the sober tedium of business: this affords nothing to satiate the appetite for cruelty common to man in his natural uncivilised state,—that affords him ample gratification, for slave-hunting is pre-eminently cruel." "So I feel convinced," says Mr. Laird, "that if an African were offered double the reward for the same amount of labour that he employs in kidnapping a man, for any honest employment, he would prefer that of catching the slave." Surely, then, is it not better while things are in such a state to let them rush to the vessels on the coast, to let them forsake the land which has no joys for them, whereon they can find no rest. Should not the negro be enticed from such a land, enticed even to risk the chance through capture of being placed at liberty rather than remain, when once snatched from his abode, to perish amidst the swamps of the coast and his heartless masters? Under such circumstances, persecuted both within and without his native country, humanity prompts relief to the slave through any means. England has begun to extend it, and begun it only, and the system pursued by her navy in following up her intention is deprecated, although with the best of motives by the mistaken, senatorial wisdom of Lord Brougham.

Mr. Laird, in applying the term of "the only legitimate slave-dealers" to our officers, has dropped an expression which will fall harmless at his feet. True, he has expressed a proper feeling for the honour of naval officers on the coast, and with a due regard to their feelings fully acquits them of all interested motives. But the epithet is inapplicable, entirely absurd. As well might he say that the British government are slave-dealers because they liberate the slave and reward the captors with 5*l.* for each. A slave-dealer can do as he pleases with his slaves, but what do British officers know of such feelings? Their government gives them a reward for each slave delivered, call it head-money or what you will, it has nothing virtually to do with slave-dealing. And why should not British officers reap some reward for the exposure, the privation, the risk of life they undergo? Put it in whatever form you please, call it what you like but head-money, some reward they well deserve, and it may be more difficult than he at first imagines, although Lord Brougham may say it was done "in an ill-fated moment," to find a wholesome substitute for it. But if they receive reward under any form, let it even be in promotion, (which is nought else but honour) in Mr. Laird's acceptance of the term they are yet only "legalized slave-dealers."

Fig. 1

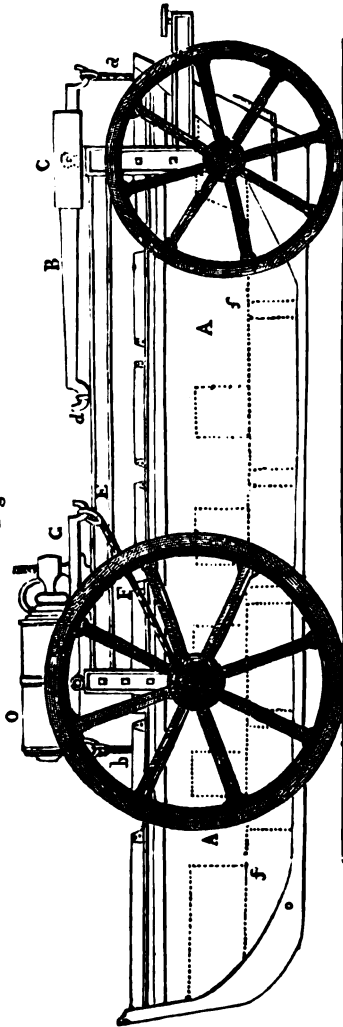
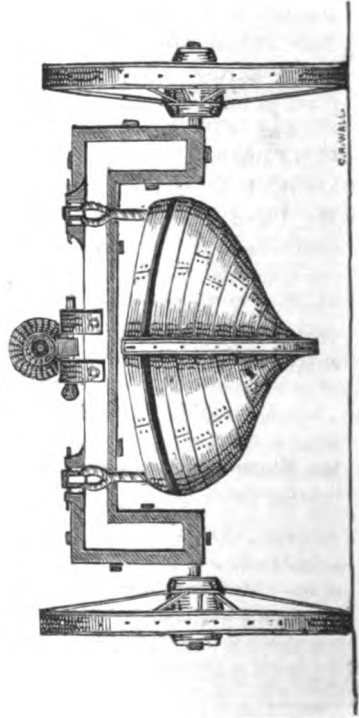


Fig. 2.



CUNNINGHAM'S TRAVELLING LIFE-BOAT AND APPARATUS.

But the attempt which has been made in an irascible moment, both by Lord Brougham and his hitherto "uncontradicted" authority, Mr. Laird, to impute dishonourable motives to the officers of the navy, weak and harmless as it is, will be well atoned for if his Lordship succeeds in lessening the evils of the slave trade, in reducing even the miseries of the poor, unhappy, wretched negro. It is a noble cause, one well worthy of a great and civilized country which has already exhausted millions of money in its behalf, and one, in which all the graces of the most brilliant talents were never more worthily employed. But it is a cause which if taken up must be dealt with in earnest; it allows of no half measures, no temporizing, and declaring it once for all, piracy, will be the first effectual step towards its extinction; the next, to arm our cruisers with the general consent of all nations to consider those vessels slavers which have on board any one of the usual indications of such pursuit, and last, though not the least, to throw into Africa, by the Niger, that channel which Mr. Laird has pointed out, such a stream of commercial enterprise, countenanced and encouraged by government protection, as shall convince the hordes of negroes on its banks that the labour of their hands, the produce of their soil, is wanted of them and can be converted to their benefit. Then, and not till then, will the slave trade cease.

CUNNINGHAM'S LIFE BOAT.

Gosport.

MR. EDITOR,—Having noticed in a prior number of your magazine, a communication, descriptive of a Life Raft, by Captain Cookesly; and presuming you will agree with me in the propriety of giving the utmost publicity to any invention on so philanthropic a subject, I forward you the accompanying plans and drawings, which I must of course state, have already appeared in the beginning of the present volume of the "Mechanic's Magazine;" but, which circumstance I trust will not deter you from honouring them with a place in your valuable pages. As the invention may be considered from its peculiar relationship, more adapted for a nautical publication, and being in the same, there is a greater chance of its being interesting, and noticed by those who can appreciate the dangers which it is intended to mitigate.

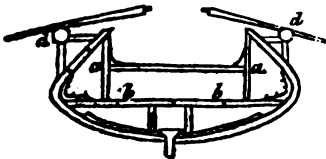
The intention is, to combine in one expeditious travelling carriage, every means which can contribute toward the salvation of lives of shipwrecked mariners; and it thus consists of a Life Boat; a gun for heaving lines; a catamaran for clearing surfs; and a carriage for the conveyance thereof; which last can be used for the transportation of anchors and cables, scaling-ladders for cliffs: and in war, for the defence of the coast. The whole might also be employed for the purpose of accompanying armies; and by enabling them to cross rivers, uniting, in one machine, the baggage-wagon, pontoon, and gun carriage.

The models (of which the accompanying are the drawings) have been laid before several of the public boards; and I have been earnestly endeavouring for nearly three years, to get it tried or adopted, but as yet I am sorry to say without success. Again, then, do I request your friendly aid towards giving it additional publicity, and I have the honour to be,

SIR, your obedient servant,

HENRY DUNCAN CUNNINGHAM.

Fig. 1, is the life-carriage, with its appendages, ready for travelling. The construction of the interior of the boat *A A*, may be understood by the dotted sectional view, *f f* is a platform parallel with the line of flotation, which is taken when the boat is fully manned and equipped. From this platform are tubes which communicate with the water, through the bottom. There are two of these tubes between each thwart; one upon each side, and close to the keel, and through them is conveyed, whatever water the boat ships; for it will be perceived that the inside openings of these tubes being on a level with the line of flotation. The water (except in extraordinary cases) will not rise upwards through them into the boat; and, consequently the water that is received must seek its own level. And to effect this, as soon as possible, increased buoyancy is given, by all the parts not occupied by the rowers and sitters, being filled in flush with the thwarts, by a casing of wood, covered with fine painted or oil duck, to guard against the seams working, and a hollow copper gunwhale streak, covered with wood, to protect it from injury is carried round the outside. By these precautions, the danger of swamping is entirely removed, as the boat keeps herself dry, and the difficulty of capsizing so great, as to permit her to right when the keel is nearly parallel with the surface of the water. These results have been proved by actual experiment; but, before closing this part of the description, I would add, that since the publication of my former plans, I have proposed another, which I think, deserves mention. The accompanying figure is a sectional view:



I propose the sides falling in as in the annexed manner, and the chord of the circle (if it may so be called) to be filled in, as at *a a*, meeting the platform *b b*. And in order to give a spread for the oars a hollow copper tube, supported by stanchions, to extend the length of the rowing part of the boat, and not quite plumbing the projection of the sides; the oars to work thereon in grummits.* The resistance such a cylinder would give, when the boat had a great inclination, would, in conjunction with her peculiar formation, I humbly think, entirely prevent capsizing, and make her, if thus fitted, on the whole, positively a "life-boat." But, to proceed. On the hind axletree of the carriage are two levers, of which *G*. is one. The head of the bolt or lynch-pin is so constructed as to form the fulcrum to another large lever *B*, which is equal to the two smaller ones *G G*. It is represented by the dotted figure at *C*; the parallelogram, which hides it from the view, is the end of one of the magazines for carrying surgical instruments, restoratives, &c., and supplying ammunition to the car-

* I once saw a gig, at Plymouth, fitted with appendages similar to that which I propose. It belonged, I believe, to Lord Valletort.

ronade *O*, which is intended to heave lines to ships in distress. By means of the levers, the boat is attached to the carriage, and they are so proportioned as to allow one man at each small lever, and two men at the large one, to heave the boat up; the ends are secured by the rope *F*, and the ring-bolt *d*; *h* and *a* are slings attached to the boat. A better idea of the formation of the carriage, &c., may be conceived by fig. 2.

The process of working the apparatus is this:—In attaching the boat to the carriage, the latter is wheeled over the former, and the slings in the sides, and stern hooked to the levers, which are then hove down and secured. The whole operation might be done in a few minutes, and in a reversed manner, with the same speed. The gun is worked by withdrawing the linch-pin *C*, thus detaching the shaft *E* from the fore-axle-tree, the end of which, being allowed to go upon the ground, prevents recoil and brings the gun to the required angle. A line is then fired and a communication established between the ship and the shore—if the distance is great, by means of the life-boat, but if through much surf, the catamaran would be the safest mode of conveyance.

There are many parts of the coasts of England which consist of long flat bays, in every part of which, ships are liable to go on shore, or be in distress; for instance, White-Sand Bay, near Plymouth, the extent of which is ten or twelve miles. Now a life apparatus cannot be stationed at every part of this distance, consequently, the only way which such a place can be supplied *effectively*, is to have a machine which can be transported to any part and any distance, with facility and speed. Suppose a life machine, on this plan, were stationed at Looe, and a vessel is observed to be in distress in the middle of the bay, the carriage would be dispatched with all expedition, and in a short time arrive at the required spot. But, in the interim, the ship has gone on shore, and in such a situation, that the only way of communicating is by means of a rope. In a few minutes the boat is detached from the carriage, the gun brought into operation, and, a line having been fired, the people are taken out by means of the catamaran, before the vessel goes to pieces. Suppose again, a ship is in such a position, with the life-station: that by conveying the boat some distance along the shore; a slant of wind might be obtained off, when, otherwise it were impossible to effect it. Here then again the advantage of this expeditious conveyance will appear; and many other examples might be adduced, which will be evident to those who are acquainted with the dangers of a sea coast.

Finally, for war and defence of the coast, this apparatus would be eminently useful. Suppose each intermediate coast-guard station were furnished with a life carriage, and that an attack from boats were anticipated at any point; by means of signals, a brigade of guns, served by the station men, might be formed, sufficiently strong to

repulse a very serious attack. Again, in the event of an army campaigning in a country intersected by rivers, and of their requiring not only artillery, but means to pass the aforesaid rivers, a brigade of these machines, with flat bottomed boats, would answer the purposes of both. The guns could heave lines across, and a floating bridge might in a short time be constructed, thus superceding the use of pontoons.

VOYAGE OF L'ASTROLABE AND LA ZELEE.

[THE following is the plan and itinerary of the expedition to the Antarctic Pole and round the world, under the orders of M. Dumont d'Urville, capitaine de vaisseau; approved by the King of France on the 28th of March, 1837.]

Two vessels are to be employed in this expedition, l'Astrolabe, commanded by M. Dumont d'Urville, and la Zelee, commanded by M. Jaquinot, capitaine de corvette.

They are to depart from Toulon in the beginning of September, after quitting the Strait of Gibraltar, and anchoring for a short time at the Cape de Verd Isles, they are to proceed to the South-polar seas, passing between Sandwich-land, and New Shetland, in order to explore those latitudes, which till now have been so little frequented by navigators, and where Weddel appears to have been able to reach only to the 74th degree. The expedition will then extend its researches towards the Antarctic pole, as far as the ice will permit. Returning afterwards towards the north, M. d'Urville will cross the Strait of Magellan, where, notwithstanding Captain King's labours, an ample harvest of discoveries is still promised to those navigators who will explore it.

The Island of Chiloe, to the West of Patagonia, should be carefully visited for the benefit of hydrography, science and commerce; and the expedition should then proceed to Valparaiso for the necessary rest for the crews after the rough navigation of the icy seas, to repair all damages, and to prepare for a continuance of operations.

On leaving that port about the beginning of April 1838, the Astrolabe and the Zelee, will steer towards the 22nd degree of latitude, and will run along the chain of islands Ducie, Pitcairn, Gambier, Rapa, Bouronton, Mangia, Rarotonga, so as to arrive in the course of the month of May at Vavas, the best station in this part of Oceania, and the most important for the whalers. The two vessels will remain in this place for ten days, and M. d'Urville will employ the first days of June in completing by fresh observations at the Viti Islands, the great work undertaken in 1827, by the officers of the Astrolabe.(1)

(1) See the Annales Maritimes for the years 1826, 1827, and 1828, in which are all the details of M. d'Urville's first voyage round the world.

The two vessels will afterwards visit Banks' Island, to the north of the New Hebrides, which are little known; they will pass near Vanikoro without anchoring, but their boats should land, in order to visit the cenotaph raised to the memory of la Perouse during the preceding expedition of the *Astrolabe*, and to collect fresh information respecting the natives.

If the state of the vessels will allow of it, M. d'Urville will, in the month of September pass through Torres Strait, and visit the new Dutch colony on the River Dourga, with the Arru and Ki Islands, and then anchor at Amboina; but if not, they will repair to that port towards the group of the Solomon Isles, where he will probably arrive about the middle of July. This group so interesting to science, presents another object which the expedition will not neglect; we allude to Indian Bay, where it seems probable that the French who escaped from the Vanikoro disaster, terminated their lives.

From thence M. d'Urville will proceed by Santa Cruz and Nitendi by the north of New Guinea, touching only at the spacious and beautiful bay of Humboldt, which was discovered by the *Astrolabe* in 1827, though she could not then anchor there. Ten days will be passed at Amboina, and it is from thence, that the *Zelee* is to be despatched for France, if circumstances should have enabled M. d'Urville to keep her with him till then. Thus that corvette will return one year before the *Astrolabe*, and she will bring home the collections which have been made, and the general result of all that has been effected.

The *Astrolabe* then in rounding New Holland, in order to re-enter the Pacific Ocean, will employ November and December, as well as January, 1839, in touching at the new colony formed by the English at Swan River, in visiting Hobart Town, where she will remain a week, and in shaping her course to New Zealand.

The months of February and March, 1839, will be devoted to important works on those great islands, and especially to exploring with care those parts of Cook's Strait, which may offer useful resources to our whalers.

The Chatham Islands, of which we have learned nothing since their discovery by Broughton, in 1791, will be visited in April.

Steering afterwards to the northward, M. d'Urville, will visit in May, June, and July, the Islands of Mouka, Mitchell, Peyster, Niouka, St. Augustin, Gilbert, Marshall, and several of the Carolines, which though recently examined, by Captain Lutke, will be interesting to see, not only in a physical and ethnographic view, but to display there the French flag. In August, the *Astrolabe* will reach Mindanao, where no French ship has yet touched; she should remain there several days, and afterwards visit some places in the island of Borneo, such as Balembangen, Pontianak or Banyer Massin. The corvette will arrive at Batavia, about October, where she will remain but a very short

time, and then proceed to Sumatra, where she will at least shew herself in one of the ports. M. d'Urville will return by the Cape of Good Hope, and will reach France about March or April, 1840, after an absence of thirty or thirty-two months.

We need not dwell on the high interest which must be excited by an expedition so extensively planned, and so well combined as to lead to immense results. But we may remark, that the examination of the Austral Polar Sea stands at the very outset of this great scheme, which is fraught with so many other interesting objects; none of his Majesty's vessels have hitherto penetrated far into those regions; and yet it is of great importance that the real difficulties of the navigation of those seas should be duly stated; that the lands which may perhaps be found there should be described; that the state of the ice, and the system of its movements should be studied, in order to estimate the success which may attend the whale fishing in those latitudes; and finally, that many questions of natural philosophy and hydrography should be now solved which were left undetermined in former voyages. For such a mission, two vessels well fitted out, and commanded by officers accustomed to surmount the difficulties of voyages of discovery, give every security to our hopes of success. The best wishes of the friends either of science or of national glory, will attend M. d'Urville and his companions. French commerce will see in this new expedition, combined with the missions intrusted to the *Venus* and to the *Artemise* frigates, a new proof of the care that government has of its interests; and the proprietors of the whaling vessels will conceive increased hopes of success, from the investigations of M. d'Urville.

The French flag again exhibited to the inhabitants of Oceania, as well as to those distant regions which are visited by our shipping, will shew that the royal navy everywhere watches over the interests of our merchants, and all will feel the confidence which such protection must inspire. This new expedition will likewise furnish M. d'Urville with an opportunity of completing those interesting hydrographic and scientific enquiries which he so skilfully commenced in his former voyages, and the account of which is now in the hands of the philosophers and navigators of all countries.

A singular emulation now exists between the three great maritime powers. While our expedition is preparing at Toulon to depart in September for the South Pole and Oceania, a squadron of one frigate and three schooners is getting ready at Philadelphia to pursue nearly the same course. The government, the members of congress, and all well informed Americans, share the enthusiasm of its commander, who after a long enumeration of the researches and discoveries made in the far north by the English, thus concludes his statement; "Let us then leave the North Pole to the English, but the South Pole for us Americans." In London, the principal members of the learned

societies, and especially the geographic society, during the short stay which M. d'Urville made in the English capital, expressed a strong desire, that in order to rival the French and the Americans, another expedition should be sent to the confines of the world; and no one there is now satisfied with the single vessel which is to leave Portsmouth in June, for the purpose of exploring the Strait of Torres, between New Guinea and New Holland. And a paper which having been translated and read by M. d'Urville, was received by the geographical society of Paris with the greatest pleasure, and which we shall forthwith publish, shews the importance of voyages of discovery towards the South Pole, as well for the benefit of commerce as of science.

It is Captain Cook, that we are in fact to thank for the annual million of otter skins, and for the three millions of sea elephants which we bring home. The imprudent destruction of those animals has indeed exterminated them from their usual abodes, but there is no doubt that in penetrating farther to the southward, we shall obtain equally advantageous supplies.

The King received M. Dumont d'Urville on Friday, May 29th. At this audience, which lasted more than half an hour, he repeated his expectation that the expedition of the *Astrolabe* and the *Zelee* would realize his ardent hopes, that to France and to his reign would belong the glory of approaching nearest to the South Pole.

A reward* has been promised to the crews if this expedition reaches the 75th degree, and a proportionate increase for every further degree. "If indeed it should reach the Pole" said the King, "Oh! then they shall have every thing they can ask."

LIGHTNING CONDUCTORS IN SHIPS.

Boyn y caeran Llanelly Caermarthenshire, 15th January, 1837.

MR. EDITOR,—Your valuable periodical, which may be looked upon as a national benefit, cannot be occupied with a subject of much greater importance than one that has lately engrossed a considerable portion of its pages; I allude to the series of papers by the talented Mr. Snow Harris, on the Protection of Ships from Lightning. It is well known you seek not the maintenance of any particular party, or theory, or the benefit of any individual, but the welfare of the naval and mercantile community. With such commendable views, I may be certain, you will, through the medium of your pages, allow a fair and candid discussion upon so important a subject as the preservation of the lives of our brave seamen, and the property of our enterprising merchants.

* To each petty officer 150 francs, to each seaman 100, and to each boy 50, if they reach 75° S. And for every additional degree of South latitude 30, 20, and 10 francs to each individual of those three classes.

Mr. Harris, has very ably shown, that both lives and property are in danger from a neglect of the use, or an inefficient construction of apparatus intended to ward off the disastrous effects of the electric fluid; and he has given to the public a plan he considers sufficiently efficacious for the protection of ships. In his concluding paper he has noticed some objections that have been raised to the use of his apparatus. As these adduced objections are nearly in the words, and precisely in the order, that appear in a paper submitted by me to the London Electric Society, I cannot but suppose that my objections are those to which he alludes; but, if I am not the author referred to yet as these have been stated by me, I feel called upon to reply to his defence of his system, and his attempt to render nugatory my opinions.

For the better understanding of my position, I give an extract from my paper, read before the Electric Society of London, on the 24th June 1837:—"As accidents, attended with loss of lives and property, are constantly occurring, in our royal navy and mercantile service, from the effects of lightning, notwithstanding the provision often made for their defence, I have been induced to turn my attention to the subject, as well in a philosophical, as in a nautical point of view, and, I trust, by an examination of the causes, and a citation of a few effects consequent upon them, to solve the embarrassment under which we now lie, and to point out a means, whereby such disastrous consequences may be in future prevented. The causes may be traced to two principal heads;—namely, the form, and the position of the conductor used at sea. The conductor most in use is a chain, each link of which, becomes by the action of the saline moisture of the atmosphere highly oxidated, and as oxide of metal is a non-conductor of electricity, we have at every junction of one link with another, a solution of continuity in the chain regarded as a conductor of electricity, and therefore, when the vessel is struck by lightning, every joint of this conductor becomes a point at which an explosion may take place, and where, consequently, the electric fluid may strike off in any direction whatever. Its position, when the royal and topgallant masts are struck, is often productive of danger and inconvenience, for the portion of the chain then stretched (the spare part) is allowed to remain on deck; or towed overboard, either position being one of danger to the ship. The other form of conductor used is that invented by Mr. Snow Harris, with considerable ingenuity; but, in my humble opinion, by no means tending to diminish the danger.

"Mr. Snow Harris's plan is to let into the after-part of the masts, a strip of copper, of considerable surface, but of little thickness, (under the conviction that superficies, not content, conducts electricity,) from which opinion I must beg to differ, as it is decidedly contrary to experiment; and, if he made his strips thick enough to be efficient, they would materially injure that essential quality in masts, viz., pliability.

While differing so widely from a gentleman, for whose talents I have the greatest respect, I feel myself called upon to lay before the society, a few of the effects likely to result from an adoption of the system he advocates. As I before mentioned, he proposes that a strip of copper be let into the after-part of each portion of the mast, namely, the royal topgallant, top, and lower masts, through the keel into the water. Now, in the first place, as at every joint of the mast there must be a separation* in the copper, to allow the masts to be lowered; the same effects must be expected as have been condemned in the chain; and, even supposing the lightning to pursue its course downward, over the copper strip, it appears to me highly dangerous to conduct such an immense accumulation of electric fluid as that in a lightning cloud, into the body of the vessel, close, generally speaking, to the powder magazine; or, at all events, among many substances that would produce awful effects from its action on them. The lateral explosion of which I here speak, can easily be proved by experiment, to take place, even in the transmission of the feeble quantity of electricity generated by our machines. What great reason, then, have we to dread the enormous quantity of the fluid which will be conveyed into the hull of the ship. Indeed, Mr. Harris himself, gives an instance of most serious injury arising to a sailor leaning against a mast through which the lightning was transmitted. From what has been instanced, I feel confident that few will dissent from the position I wish to defend, that a perfect metallic continuity of conduction from the mast-head to the water, and also a transmission of the fluid through a channel far removed from the interior of the ship, is absolutely necessary for the protection of vessels from thunder storms.

“To attain this desideratum, under all circumstances, I beg to propose the following plan:—Let conductors be made of a metallic rope, consisting of some hundreds of fine annealed copper wires, laid up as a common rope; it will be pliable, may be rove through blocks, and traverse as well as any other rope. Let this rope be fixed to a copper point at the highest mast-head, led down the after-part of the mast, until it arrives at the lower mast-head, and from thence, led as a backstay to the outside of the ship, and there fastened to her copper sheathing. By this means, a perfect metallic conducting channel is maintained for the lightning, from the highest point to the water, without interruption or contact with anything that can possibly produce ill effects. When the masts are struck, or half struck, the spare part of the conductor can be stopped up and down its standing part by a very simple means; thus, let the part that leads from the lower mast-head to the water, be rove through two blocks, and let the lower block have

[*A careful consideration of the arrangement of the conductor adopted by Mr. Harris, shows that a continuity in contact, is always preserved. Our correspondent, has probably overlooked this important fact—Ed. N.M.]

a lanyard attached, on hauling which, the conductor will, in a manner, be sheepshanked, and the lanyard can be belayed to the conductor itself."

A diagram accompanied this paper.

In confirmation of my views, especially on the danger of the lateral explosion, I am happy to be able to lay before you the substance of a discussion on the subject that took place at the last meeting of the British Association of Science at Liverpool, in September, 1837.

Professor Henry made a communication respecting the lateral discharge in common electricity. He stated, "that a metallic conductor, intimately connected with the earth at one end, does not silently conduct the electricity thrown in sparks at the other end. In one experiment, a copper rod, one-eighth of an inch in diameter, was plunged at its lower end, into the water of a deep well, so as to form as perfect a connection with the earth as possible; a small ball being attached to the upper end, and sparks passed on to this from the conductor of a common electric machine. A lateral spark could be drawn from any part of the wire, and a pistol of Volta fired even near the surface of the water. This effect was rendered more striking, by attaching a ball to the middle of the perpendicular part of a lightning conductor, put up according to the direction given by Gay Lussac. When sparks of about an inch and a half in length, were thrown on the ball, corresponding lateral sparks could be drawn not only from the parts of the rod between the ground and the ball, but from the part above, even to the top of the rod. Mr. Stevelly said, it seemed to furnish a clue to the explanation of accidents, which had been known to occur to buildings protected by lightning rods on the most approved construction, since we know that the lateral discharge frequently takes place in thunder storms; and, if it were, in any case, to be thrown upon the conductor, the effects described by Professor Henry must follow."

The situation proposed by Mr. Harris, for ship conductors, is therefore palpably dangerous; the lateral explosion of which, your readers can now have no doubt, would be a formidable enemy in the hold of a ship, and I cannot perceive that Mr. Harris, in attempting to rebut my arguments, has, for one moment, considered this phenomenon. But I will take his arguments in the order they occur, in his concluding paper, in your number for December, 1837, prevising that my objections are classed by him under the head of "Practical Objections to the Application of Lightning Conductors to the Masts of Ships." I perfectly agree with him that the theoretical objections, including those which discourage the use of lightning conductors generally, under whatever form applied, and economical objections to the expense incurred by the employment of such conductors, which have been advanced by some persons, are perfectly untenable.

My first objection to Mr. Harris's invention is, that as a mass of metal,

not its mere superficies, conducts electricity, it will be necessary to have a considerable mass, either as a rod, or extended plate, or bundle of wires, to form an efficient conductor. I insisted more on this, as Mr. Harris, in a work on conductors, and also in a conversation I once had the honour of holding with him on this subject, maintained that surface, not content, conducts electricity; and, he observes, in his concluding paper in your magazine, that the cooling power of the air will be greater on an extended surface than on a solid rod. I grant it will, if the heat has time to radiate from the metal; but, if he imagines that the almost evanescent instant of time required for the transmission of electricity, will admit of the smallest perceptible radiation of heat during that passage, much less to the degree he anticipates—namely, sufficient to assist in preventing the fusion of the conductor, he must certainly be in error, and I still maintain that an equal quantity of metal is essential to perfect conductivity, whether in the form of plate, rod, or otherwise; and, that if a mass of metal is fixed to masts or spars, they will have their pliability injured, and I need not enforce on your nautical readers, how essential elasticity of spars is to the fast sailing of a ship.

Mr. Harris's experiments, paragraphs 78, 79, assist me much in showing the pliability of a spar was injured by the application of metallic strips.*

I now come to the most important objection raised by me:—namely, the danger of carrying the conductors through the hull of the ship, and which Mr. Harris takes into consideration, paragraph 75; but I find he does not even allude to the lateral explosion. In a former part of this paper I have shown the probability of the occurrence of this phenomenon and its danger. Mr. Harris says, "That the conductors pass near the magazines is allowed, but such is the case in all magazines on shore, defended by lightning rods; they are purposely placed near the magazines, in order to afford the requisite protection, for it is well known that the electric matter will not leave a good and efficient conductor in the line of its action to pass upon detached or less perfect conductors." Granted.—For the electric fluid will pass by the shortest and least opposing channel, but Mr. Harris omits to state the fact, that this current, while travelling in its proper course, induces a state of electric excitement in neighbouring conductors, in a word, produces a latent explosion sufficient to ignite inflammable substances. It must also be borne in mind that magazine conductors on shore, are detached from the building, and not in juxta position with any conductors of electricity, upon which, the passing current might throw its lateral spark to the ignition of the powder. But on board ship the case is different, for the magazine is surrounded by bolts and

[* It did not appear by the experiments in Plymouth Dock Yard, see p. 829, of our last vol., that they injured the strength of the spars, but rather increased it.—Ed. N. M.]

other metallic substances, which catching the lateral explosion from the conductor affixed to the mast, may convey it to the magazine, producing the most terrific effects.

Far be it from me, to detract from the merits of a gentleman of such talents as Mr. Harris; but it must be presumed the phenomenon of the lateral explosion has escaped his observation, otherwise the genius he has displayed in other inventions, would have guarded him from the error he has unconsciously committed. I trust he will pardon these observations, and as we are both labouring, not for personal aggrandisement, but for the public good, I hope he will take what I have said, not as a disrespect for his undoubted talent, but in the spirit they have been written, a hearty desire to elicit truth, and benefit our naval and mercantile service. With these feelings, I do not doubt, that on consideration, he will admit, that a perfect metallic continuity of conduction from the mast-head to the water; and also a transmission of the electric fluid through a channel, far removed from the interior of the ship, is absolutely necessary for the protection of vessels from thunder storms, and which desideratum will be obtained by the adoption of my metallic rope conductor.

I have the honour, &c.

MARTYN J. ROBERTS.

STEAMERS AS SAILING VESSELS.—*Unshipping, v. Disconnecting.*

January, 1838.

MR. EDITOR,—Some observations, by Commander Ramsay, of her Majesty's ship, *Dee*, appearing under the above head in your number for this month, induces me also to offer you a few remarks on the same subject.

The advantages, on long voyages, of using sails, are unquestionable, and Commander Ramsay points out those of cleaning the flues and boilers, and effecting also casual repairs; and expresses a very natural surprise at the statements which have been made, expressing the fallacy of supposing that a steamer can be converted into a sailing vessel. Why cannot she be so? I have, in your pages, Mr. Editor, stated that I consider sails of very little use in aid of steam, but never doubted their value when the fires were put out

I have made a few short trips in steamers; have once or twice seen bad weather in them, and been in situations where I have considered that if any thing went wrong with their machinery, their total incapacity of being put under immediate command, by using their sails, (through the wheels counteracting their effects) was certain destruction. Seeing this, it has been matter of no small degree of surprise, when I have been told that there was no speedy way of "disconnecting the wheels, or, of unshipping the paddle-boards." And, although I learn that it

was the constant practice in H.M.S. *Medea*, to "disconnect," and in the *Dee*, to "unship," we are left completely in the dark, as to how these operations were effected. Commander Ramsay tells us, that in moderate weather, it requires about half an hour to unship, and about double that time to ship the paddle-boards; but he does not say whether, in all weathers, these operations can be performed at all; but he observes, that the management of a steamer under sail, is a ticklish affair, and that a bright look-out must be kept for a gale, that the steam may be got up in time. *Query*. How does he contrive to ship the paddle-boards, on threatening weather increasing to a gale? The opinion I have been able to form of this operation, leads me to imagine the thing impossible; and I venture to say it is so; and that the commander cannot shew, that in anything even approaching to bad weather, he ever accomplished it on board H.M. ship, *Dee*. Another objection to this unshipping of paddle-boards is, the great difficulty in keeping them fast in their places, when fitted under the most favourable circumstances; that is to say, the vessel in a state of quiet, and the work deliberately done by engineers—the same security could not be attained, by a hasty replacing of them at sea. I have heard from an officer who has seen all this tried, the means adopted for unshipping, &c., it appears that tackles are clapped on the paddle-wheels, one leading forward, the other aft; that they are braced tort to steady the wheel, while the boards are taken off, the same method for replacing them. This operation I hesitate not to say is wholly impracticable in bad weather.

I would, however, be understood to say, that the unshipping of paddle-boards, is never to be adopted. On long voyages this measure may be very desirable, and may be accomplished under circumstances where no difficulty can take place—for instance, on an India voyage, they may be taken away at *Madeira*; they may be re-shipped on losing the N.E. trade; removed again when through the variables, and on losing the S.E. trade, there is always a tract of fine weather, to replace them, &c. &c. But the end I want to see attained is, the converting a steamer into a sailing vessel, and the contrary—instantly—and why means have not been adopted to attain this end, in all sea-going steamers, is truly astonishing; seeing that all steamers which go to sea, on short voyages, (which includes ninety-nine out of a 100) must be continually in situations where a sudden break down would inevitably cause the immediate loss of the ship, unless she could anchor; and, when such accidents occur in the open sea, if in bad weather, the situation is not much better: as I can conceive no position a ship can be placed in, so trying, as a steamer becoming suddenly disabled in her machinery, in a heavy gale, "unshipping or disconnecting," (according to present fitting) being nearly out of the question—the speedy washing away of the paddle-boards being then the only thing to hope for, to accomplish command for the vessel by sail.

I will further remark upon a statement of Commander Ramsay, in respect to the sailing properties of H.M. steamers, *Dee* and *Medea*, which appears interesting to naval architects. He states, that the *Dee's* best performances under canvas, are in light winds; and that of the *Medea's*, the worst; and as the latter vessel could not unship her paddle-boards, (they were Morgan's) he very naturally argues against the use of them, as being a drawback to that ship's performances in light winds; (so he imagines them to have been) and approves of the common floats, because, in his own ship, they could be removed at a time when her greatest advantages in sailing were most apparent. On this I will observe, first—that the commander is in error in supposing any great effort necessary to turn round the wheels, when “disconnected;”—any one at all conversant with mechanics, would, I think, tell him, that if he had practised this mode (“disconnecting”) (which he acknowledges he has not done;) that he would have found, the least imaginable effort applied to propel the ship, would move them round, however large, (perhaps the larger the easier moved,) and less, even next to nothing, would serve to keep them in motion: secondly, that, however desirable it may be that nothing should interfere with a steamer sailing under any circumstances; yet, that it is certainly of less importance, that she be impeded, only in light winds; seeing that it is just the most likely time she would be using the steam—and I cannot but further observe, that the performance of the *Dee* under canvas, as compared with other vessels, having been but in light winds, is a circumstance well worthy the consideration of our excellent surveyor, Sir W. Symonds, as an anomaly, viz. :—that a vessel which can shew the least possible quantity of canvas, (which steamers do in comparison with their size) should have a greater advantage over sailing vessels, in light winds; than when, by a sailing vessel, being obliged to reduce canvas, the steamer becomes more upon a par with her: and it is further worthy of the surveyor's serious consideration, in what consists the difference of form, dimensions, lines, &c., between the two fine steamers, *Dee* and *Medea*; to cause such very different results as are said to be found in their sailing properties.

Having admitted the advantage of unshipping paddle-boards in certain cases, I now proceed to contend for the propriety and practicability of a sea-going steamer's machinery being so constructed as to be able to disconnect the wheels, and allow them to revolve instantly. There is in the Naval Code of Signals, I believe, one “disconnect paddle-wheels.” I would have a man-of-war steamer be able to show sail, and answer this signal by “disconnected,” in one minute, at the very most. I know not how this operation has hitherto been effected in the *Medea*, but I suppose the wheels have been steadied by tackles, as before alluded to, and the crank-pins then withdrawn. Now this operation could be effected in the least imagi-

nable time, supposing the wheels perfectly immoveable, and what I would suggest is, that some of our ingenious engineers, would plan an efficient mode of accomplishing this, and which I should think might be done, by good sized wheels being fitted upon the shafts, or both sides, just outside the crank; and that some effectual means be adopted of pawling these wheels both ways, and, that the crank-pin being knocked out, the pawls could be withdrawn, throwing the wheels out of gear instantly. The advantages here gained, are time, and a method always practicable. There is no doubt that "unshipping" the boards is the most effective,—show a mode of doing it quickly, and then the "disconnecting" may be dispensed with, provided they can also be as readily re-shipped.

The pawl-wheel would be equally useful in steadying the wheels and retaining them steady when unshipping is adopted.

MERCATOR.

EXAMINATION OF THE CAPTAINS AND OFFICERS OF PRUSSIAN MERCHANT SHIPS.

Berlin, 24th May, 1837.

[The following regulations of the Prussian Government on this important subject, and for which we are indebted to the attention of Hebelers Esq., His Majesty's Consul in London, form a valuable addenda to some preceding communications.]

EXTRACT of a letter to Baron D'Ohssen, Swedish Ambassador Extraordinary, dated 24th May, 1837.

To the questions concerning the regulations of the Prussian Naval School, I beg leave to reply as follows:—

Questions *a*, *b*, and *c*.—Schools of that description exist, at present at Stettin, Stralsund, Danzig, Pillau, and Memel, the object of which is,

To give to steersmen, and captains of ships, an opportunity of attaining those acquirements which they must be found to possess on examination, as directed by law, in order to be admitted to carry on their profession on their own account.

The particulars of this examination, are contained in the annexed instruction of the year 1824, and I have only to add, that it was afterwards agreed, not only to grant certificates of examination for commanding ships, in every sea, but also for a separate qualification for the Baltic only.

No separate regulation was made to be applicable to all navigation schools. The copy of the annexed extract, however, explains the rudiments of the plan of education in those schools, as they were originally prescribed in the year 1810, and in the main point are still followed, in which it is endeavoured to improve the regulations of the schools of navigation; namely, to obtain a qualified teacher, and

if necessary, farther to instruct the junior teachers by visiting the royal observatory at Berlin.

Question *d*.—No regular inventory as to books, charts, and nautical instruments, furnished to the schools by the government has been ordered; but they have endeavoured to increase and complete their supply. Besides expensive astronomical instruments, which the central government of the observatories will, as soon as their further progress shall require it, provide gratis; every school of navigation is allowed a fixed sum per year at their disposal, for that purpose. In Danzig, for example, 200 *mf* is appointed. Should you wish it, I shall be glad to obtain a copy of the inventory of this school, and communicate it to your excellency.

Question *e*.—The money paid for instruction at the navigation schools of Stralsund, Stettin, Danzig, Pillau and Memel is not the same. The highest rate amounts to,

For the Captains class.....	10 <i>mf</i> .
Shipbuilding ditto.....	6 <i>mf</i> .

Questions *f*.—Private instruction forms no part of the plan of the Prussian Navigation Schools.

Question *g*.—The salaries of the masters at the navigation schools differ.

In Danzig, Commodore Von Belle as Director	1200
as Master	400 <i>mf</i> .1600
The teacher of Shipbuilding.....	150
Ditto of Drawing.....	100
An assistant teacher.....	180
In Stettin the head master receives.....	600
The second assistant.....	300

Instruction in shipbuilding is given there by the master of the shipbuilding school.

Question *h*.—The navigation schools are under the especial superintendance of government, and the management of those ministers, to whom the affairs of trade and professions are entrusted.

(Signed) Count Von Alrenleben.

INSTRUCTION.—According to which the examination is to be conducted of such persons as wish to establish themselves on their own accounts as shipbuilders, or boatbuilders, as sea captains, or steersmen to undertake the management of a ship, or who seek appointments as pilots.

As prescribed by law, (by statute of police regulations, for trade of 7th Sept. 1811, § 97, and 107,) all shipbuilders, captains of ships, steersmen, and pilots, shall only be admitted to carry on business on their own account after having passed an examination; and commissions shall be appointed in the principal maritime cities for that purpose, and it is ordered as follows:—

§ 1.—The examining commission consists of one director and

assessors, who should be partly shipowners and captains, and partly shipbuilders nominated by the government, and published in the official papers.

Should any scientific persons, such as mathematicians and astronomers be inclined to take part in the examination of captains and steersmen, so as patriotically to forward the measure, they may be elected as honorary members of the commission; as such, they will in general, not themselves examine, but judge as to the suitable mode of examination in the mathematical and astronomical parts as far as come within the limits of this instruction.

§ 2.—Application for examination must be made to the Directors of the examining commission, who will take care that the individuals applying, state their former occupations and good conduct by creditable testimonials. With regard to attainments, the commission is neither authorized, nor bound to inquire in what way they may have been obtained.

§ 3.—In general the commission when assembled and having examined the testimonials, and found no objection, will then ascertain whether the person to be examined, possess sufficient knowledge in writing correctly, and knows how properly to express his ideas. This is to be inquired into by a few themes in writing in the presence of the commission.

§ 4.—A EXAMINATION OF SHIPBUILDERS. As soon as this is done, the commission appoints the work which the future shipbuilder is to perform as a proof of his abilities, and makes him acquainted with it at the same sitting. To this work belongs,—

1. A small sharp formed row-boat, built by his own hands. The future ship builder must manufacture this according to a drawing which he has before presented to the commission, and, with only the assistance of a person unskilled in shipbuilding, and under the inspection of a member of the commission, that they may be convinced he has built the boat without any assistance.

2. Drawings and estimate of expences of timber and building of a merchant ship, to be newly built, of a fixed size and plan of building. The estimates must, as far as possible, be specially made out and written in his own hand. In the requisite drawings are included a lateral sketch, horizontal sketch, a water level sketch.

3. A calculation, in which is stated how much corn, and how much wood the ship could load, and what water she would draw with each cargo. The usual modes of admeasurement, founded on experience, to be followed.

4. An accurate calculation and estimate of expence for the fitting up of this ship, with requisite masts, spars and timber; as also sails, anchors, and tackle, with a statement of the description and proper size of the principal parts, as to whether the ship be intended for burthen or fast sailing.

§ 5.—As soon as the person to be examined has completed these

works, entirely by himself, and without any assistance, he must give notice to the commission and present the performances 2, 3, and 4.

The members of the commission are to look over each of these works separately, to examine the boat, (which, during its being built, should be examined at least once by each member,) and then meet a second time. At this second meeting the members will communicate to each other their opinion of the separate works, and decide by a majority, whether the individual to be examined has shown sufficient ability. Should the decision, the grounds of which are to be recorded, turn out negatively, the same is to be immediately verbally communicated to the person under examination, and it is left to him, whether, at the expiration of a year, he will again apply for an examination, which, in case he should, will be proceeded with in the same way, but a reference will be required as to where, and, in what manner he may have spent the year.

§ 6.—Should the above decision be affirmative, they will proceed to the verbal examination. Then the person to be examined, must affirm in lieu of an oath, before the assembled commission, that he performed the work appointed by § 4, quite alone, and without assistance. He is then asked by the members of the commission concerning various matters referring to the work, and must give farther explanations of the same, in order to confirm the proof that he has done the work himself. After which, he is to be examined in arithmetic, in the solving of the principal propositions in statics, hydrostatics, and mechanics; he must be able to work the four rules of arithmetic and rule of three, in whole numbers and fractions, and must have some knowledge of simple machines, and of the properties of the swimming and sinking of bodies.

After this verbal examination, the commission will finally decide by a majority of votes, as to the admissibility of the candidate as a shipbuilder, and furnish him with the certificate founded on the protocol of examination, in which, must be briefly stated, in what points he evinced more or less knowledge, from all the members of the commission, including those in the minority.

§ 7.—With this certificate, the person examined applies to the Royal Government, for the drawing up of the qualifications attest according to § 94, of the law of 7th Sept. 1811.

§ 8.—For the examination and making out of certificate. the person examined, pays the commission twelve dollars, but if he has been dismissed without verbal examination, eight dollars which are to be equally divided amongst the members.

§ 9.—Those who do not lay claim to the complete qualifications of a shipbuilder, but confine themselves to constructing smaller vessels, built on a keel, but not intended for going to sea, must produce their qualification for it, as directed in § 4. at 1, and it shall only depend, on the approbation of the examining commission, to appoint a sailing

boat, instead of row-boat, as human life is not unfrequently endangered, by want of proper rigging to such craft.

The privilege of these boat-builders, however, is limited only to such keeled vessels as contain three Prussian normal lasts, and under, and are even precluded from the repairing of larger sea-going ships.

The drawing up of the qualification certificate, is to be done in the mode directed, in § 7, but the above mentioned limitation as to the privileges of the boat-builder, to be definitely stated therein.

The examination dues are fixed, at half the amount of § 8.

§ 10.—B. EXAMINATION OF CAPTAINS OF SHIPS AND STEERSMEN.—

With regard to the examination of steersmen and captains, the same regulations are prescribed as to the application made, mode of examination, in issuing the certificates signed also by the honorary members, and referring to § 106, of the decree of the 7th September, 1811, as above directed. The subjects of examination however differ.

§ 11.—In general, in the examination of steersmen and captains, according to § 1,446, part II. Tit. 8, of the common law, a reference will be required, that the applicant for examination has been voyages as a seaman; that he be well acquainted with navigation, and keeping a ship's reckoning, and can order common repairs of ships; is capable of judging of materials, and their use for ship building; also, that he must be sufficiently acquainted with the laws and customs of navigation. The shortest term of service as a seaman, is hereby fixed at two years.

§ 12.—In the examination of a steersman the following subjects are to be particularly attended to:—

1. The elements of arithmetic and geometry.
2. The division and use of the log line and glass.
3. Certainty and readiness in the use of instruments for taking observations as octant, amplitude, and steering compass, and a knowledge of visible stars of the first, and some of the second magnitude.
4. The observing and calculating the Sun's altitude, off, and on the meridian, and the observation and calculation of latitude by fixed stars on the meridian
5. Calculation and application of the Sun's amplitude.
6. In what way maritime surveying can be correctly made.
7. Calculations of high water, ebbing and flowing of tides.
8. To find the difference of latitude, and departure by course and distance, and to find the difference of longitude by the departure and middle latitude.
9. To be able to change courses steered for leeway and variation into real courses, and the reverse.
10. To bring several traversed courses into one mean course, and to apply the known currents.
11. To prick off the ship's place in the plane, as well as Mercator's chart.
12. The correct keeping of a sea journal.

13. To manœuvre the ship in all winds and weather.
14. To be able to rig and unrig a ship.
15. To keep an accurate account of goods loaded and discharged, and properly to stow the same when shipped.
16. Azimuth observation and calculation.
17. Observation and calculation of latitude by the Polar Star, at all times when visible above the horizon.
18. Knowledge of the arrangement and use of the Nautical Almanack, and the New Copenhagen Supplement to the same.
19. Knowledge of the four brightest planets, latitude, observation, and calculations by the same on the meridian, as also lunars.
20. Skill and certainty in the use of the sextant.
21. Observation and calculation of the ship's time.
22. Observation and calculation of longitude by the Moon's distance.
23. Calculation of longitude by chronometer, with knowledge of the necessary observations on land, so as to determine the error and rate of the chronometer.

Should the person under examination not sufficiently answer the last eight questions, a certificate may be granted him; but, it must be expressly stated therein, that he is not sufficiently acquainted with these points of seamanship, and therefore better qualified for short sea voyages. Should he, on the contrary, answer these eight questions to the satisfaction of the examining commission, it shall be particularly stated in the certificate, that he is qualified for the command of all descriptions of ships to any part of the world.

§ 13. Of a captain will be required, besides perfect certainty and skill in what is known by a steersman, which he must have practically exercised as such, for at least a year:—

1. To rig a new ship, and be able to determine the length and thickness of the rigging, &c.
2. Accurate knowledge how he is to conduct himself from the moment that he takes his freight, until he reaches his destination, and has discharged his cargo.
3. Knowledge of so much as is most essential to a captain of maritime law, particularly that of Prussia.
4. Proper experience in keeping the ship's account.
5. A knowledge of maritime geography.

§ 14.—C. EXAMINATION OF PILOTS.—Nautical and astronomical science, or mathematical, is not required from a pilot, but the examination is principally to apply to the following:—

1. The most accurate knowledge of the harbour at which the pilot seeks to be appointed.
2. A knowledge of manœuvring ships of various descriptions, in any wind or weather, and to be capable of taking charge of ships.
4. A complete knowledge of the most desirable expedients in case of danger.

§ 15. The expenses of examination are fixed for captains, at ten dollars; for steersmen or pilots at five dollars, which the same as directed in § 8 are to be divided. However, in case of the want of means, on the part of the candidate, it rests with the authorities to reduce the amount of these dues.

Signed, BARON BULOW, Minister of Commerce.

Berlin, 26th Feb. 1824.

MEAN LEVEL OF THE SEA.

Dec. 1, 1837.

WE were in hopes, Mr. Editor, of seeing some account of Captain Denham's discovery of a "Constant Sea Level," in the pages of the *Nautical*, as independent of its value to the engineer, &c., the subject is one of great interest to the seaman; and, I can assure you that some are on the *qui vive* for a plain intelligible account of the matter. For the slight notice of it during the late proceedings of the British Association, as given in the *Athenæum*, affords no clear idea of what is really meant. I allude to the following extracts:—

"Captain Denham gave an explanation (which was not inserted) of his principle of a constant sea-level, which he had ascertained to be at three hours before, and three hours after high water."* Again "This gentleman has recorded his most important general inference, drawn from a connected series of observations made on the tides; that *there is one invariable mean height, common to neap and spring tides*—the half-tide mark. A point from which engineers, geologists, and navigators, will henceforward commence their calculations, and adjust their standard of comparison."

If this law turns out to be general, the discovery will indeed be of vast importance; but whilst it continues an inference only, from local observations, there will probably be some reasonable hesitation in adopting the line. At present we require some light upon this very interesting subject; for many, even among seamen, who have not studied the tidal theory, may be puzzled to understand how a *constant sea level* can exist where tides vary in height, and are often irregular in time.

It appears, that at Liverpool, the equinoxial spring tides rise 33 feet, ordinary springs 30, and neaps 23, influenced by northerly and southerly winds. The argument would be this: if the "half-tide mark" be the line admitted, and we are to regulate this by *depth* (as the term implies,) it seems evident that the half amount of the three tides would vary; the second with the first, one-foot and a half; the third with the first five feet; and again, the third with the second, three feet and a half from a uniform level. And the half-flood, in some places, if

* *Athenæum*, No. 516, p. 679. † p. 679.

we denominate from time, would be one hour, and that of the ebb from three to four and upwards. For myself, I take the words attributed to the discoverer; and, if we therefore consider that, at "three hours before high water, and three hours after high water," every day in the year, the rise and depression follow a fixed law of nature, by which the surface attains a uniform corresponding level, we arrive at what is meant, and at a very wonderful and important phenomenon.

If such should prove to be *universal*, it would of course answer the purpose for which it is stated to be applicable; but, although it should so answer, could it have reference to the true level of the ocean, properly so considered? The resolution of this question appears to be, independent of science, a matter of common sense, and can have no reference to the true sea level.

In conclusion, I may express a hope that he will favour the readers of the *Nautical* with an account of the discovery.

AN OLD FISH.

MR. EDITOR.—If Captain Denham's recent discovery of the surface of tidal waters presenting a line of coequal elevation, at two intervals of time from high water—preceding and succeeding—during the day, be found hereafter to be universal, it will set at rest the long disputed question of a superior permanency of level in any one part of the ocean over another, as far as the effects of the tides are concerned: for it is obvious, if a certain level be reached during the operation of the tides, which shall be co-equal in all parts of the ocean subject to the reciprocation, that, four times within the period of the diurnal and nocturnal floods and ebbs, this line of equal elevation will be attained, and consequently permanency of superior level be disproved.

ARGONAUT.

AUSTRALIAN SURVEYS.—*Torres Strait.*

SIR.—The detailed account of the voyage in search of the survivors of the ship *Charles Eaton*, contained in the pages of the *Nautical*, has been perused with deep interest. The deplorable fate which attended the majority of those persons who had embarked in the unlucky vessel, has called forth feelings of commiseration, both in the colony and at home; but, do not the repeated calamitous occurrences which have overtaken ships in, and near Torres Straits, demand something more than the expressions of compassionate sentiments? some practical plan from which would result the discontinuance, or, at all events, the lessening of the murderous actions of the native islanders of the Strait, on Europeans, who may be so unfortunate as to fall into their hands.

Humanity and policy dictate that some mode for restraining those roving and ferocious savages from their barbarous practices, with refer-

ence to the white people, by the calamity of shipwreck thrown in their way, should forthwith be adopted; and, that either the authorities in the mother country, or the colonial government in Australia should derive some means for accomplishing so desirable an end.

It is evident, since the opening of the East India trade, and the progressive increase of exportable articles in Australia, that the number of vessels which frequent the route through Torres Strait, has been very much augmented; and as it is not equally obvious that it is the interest of both England and her Australian Colonies, to foster and protect this growing prosperity with all imaginable care. As the above named strait appears to be the readiest channel of communication from the south, to India, a good chart, upon a large scale, is of the very first importance; and as it seems pretty clear that, however useful those extant are, they do not embrace many spots of danger which lie scattered in and near to this corally branch of the ocean, would not a surveying vessel or two be most profitably employed there for a few years?

With respect to the former consideration, it would, probably, be only necessary at first to enclose a piece of land (purchased of course if there should be any owners) for growing provisions and rearing stock, and therein erecting a fort for defence, and barracks, &c. for the accommodation of a certain number of soldiers, who may be relieved annually. A light-house would in due time follow as not the least useful of the buildings.

A small schooner with an experienced commander, would be absolutely necessary, not only to look out for wrecks, but to attend to the wants of the military and also be the means of communication with Sydney. No doubt a slight tonnage charge on all vessels taking this route, collected in the different ports, would be cheerfully paid, and would assist if it did not cover the extra expences of such an establishment. The schooner's crew might be also employed in the purchase of turtle shell, &c.

The good "Shepherds" would be auxiliary, if their aid could be obtained, in softening down the ferocity of the savages: such a station as we are contemplating might serve as a resting place for those undaunted and zealous members of Christianity, the missionaries, whence they might gradually extend the benefits of their peaceable and truly laudable avocation, from the smaller islands to the great Papua itself, the sable inhabitants of which seem especially to have full claim to the appellation of "savage;" and thus, whilst occupied in the pursuit of their divine mission, they would, without being diverted from their object by any worldly consideration, be rendering a most essential service to their country, by incidentally becoming the means of opening new sources of traffic to their secular brethren.

The natives of Murray Island are represented as being less ferocious than those of Darnley, or others nearer New Guinea, if, there-

fore, its situation to the eastward be not an objection this favourable character of its inhabitants would point it out as a desirable spot for the establishment. To the westward are the York isles, and on the main of New Holland, the prominent Cape York, and indeed a multitude of other sites for selection; however, that excellent, useful officer, and worthy man Captain Parker King, R. N., is the best authority to be consulted upon this head, and no doubt from his high and well established character. the benefit of his advice would be cheerfully given upon so interesting an occasion.

As my object, Mr. Editor, is merely to draw attention to the subject, I will close these cursory remarks with a sincere hope and expectation that, the appeal will not be in vain-

HUMANITAS.

Naval Chronicle.

HER MAJESTY'S PACKET, RANGER, broke from her moorings at Falmouth, on the 15th Feb. The sea drove her broadside on the shore, under Trefusis Hill; the packet force, under Captain Plumridge, had succeeded in saving her stores, and hopes are entertained that the vessel will be got off next spring tides.

THE FRENCH FRIGATE, LA TERPSICHOE, 60 guns, Captain Letourneur.—Twenty-eight days from Martinique, with loss of sails, spars, &c; leaky, having been on her beam-ends, obliged to throw fifteen of her guns overboard, and cut both anchors from her bows; was towed into the Cove of Cork on the 10th Feb, by the Ayr and Lee Steamers.

THE following gentlemen passed their examination in navigation on the 13th of February, at the Royal Naval College:—Messrs. Alexander Charles Gordon, Robert Macure Sandom, Hon. Spencer Lyttleton, Wm. Pensonby Johnson, Robert Hamilton Dundas, George Marriott, James Ptolemy Thurburn, Alexander Mc Naghten, Wm. Lumsden Mc Kenzie.

THE COLUMBUS STEAM-SHIP.—A spirited aqua-tint engraving, by Huggins, has just been published of this vessel, which our readers will remember as having Mr. Howard's patent vapour engines. The drawing is well executed and the vessel represented in a gale of wind at sea, has all that ease and business-like appearance for which Huggins's pictures are celebrated. It is a good picture, and well worth the notice of collectors.

H.M.S. ADELAIDE, 104 GUNS.—Mr.

Oswald Walters Brierly is, we perceive, a candidate for the fame of an artist, in the difficult school of marine painting, and has commenced a series of views of our most celebrated men-of-war, of which the present, a lithograph by Haghe, is the second, and the Inconstant, noticed in a previous number, the first of the series. The bare masts and rigging of a three-decker, occupying a whole picture, are certainly but little calculated to gain favour for the artist; and we can only excuse such a choice on the score of faithful representation. But Mr. Brierly commands encouragement, he has the tact of making a good picture, and his efforts have been well seconded by Haghe. The present is a good promise of his future productions, and he bids fair to secure for them the good opinion of naval judges.

FIRST LORD OF THE ADMIRALTY.—The chief of the naval administration of the United Kingdom undertakes one of the most important and responsible offices of the state. To him and to his coadjutors, are intrusted the proper management and direction of the great arm of our strength, and, with it, the highest interests of the community. Without a well-appointed and commanding naval force, the British army, and the lofty spirit of Britons would be confined to their own shores at home, and become powerless and unknown abroad; their commerce would fall into decay, and pass into other hands, and we should once more be reproached as the *Britanni toto ab orbe exclusi*, instead as now known, and feared, and respected in every part of the globe.

In the selection therefore, of the minis-

ter who is to give to this powerful machine life and vigour and its proper direction, it must be of the first importance that his qualifications to fill this office with credit to himself and benefit to the country should be well considered. He should possess a general knowledge of naval history and jurisprudence; good sense and unblemished integrity; a sound judgment, and great discretion; a patient and placid temper; a courteous deportment, and civil demeanour to all; an easy access to officers of every rank, and a ready and obliging acknowledgment of all applications addressed to him in writing; he should make himself well acquainted with the services and the claims of individuals of the several ranks of officers; and although in the present overgrown state of the lists, it is not possible to comply with the multitude of claims preferred more or less strong, yet a kind manner of receiving, or replying to them, personally or by letter, goes a great way to soften the bitter pangs of disappointment, the unavoidable result of a non-compliance with what is requested.

The two principal and most painful source of vexation and annoyance which a first lord of the admiralty must lay his

account of being doomed to undergo, and they are brought perpetually before him, and if he be endued with the proper feelings of humanity, must perpetually distress him, are the pressing solicitations for promotion and for employment. The scenes of disappointed expectations, of enduring poverty and hopeless misery that are constantly forcing themselves upon him, and which he has not the means of relieving, none but himself can form any idea of; and in portioning out the small pittance of patronage left at his disposal, and in weighing the respective claims of the numerous candidates, it is needless to say what conflicting opinions and sentiments, regarding the superiority of such claims; what doubts and hesitations must pass through his mind, in endeavouring to make a just and proper decision in the selection of the fortunate individual. He has also to bear in mind that, while the claims of the officer are under consideration, the claims of the service are not to be lost sight of; and whenever the one, however strong and cogent, may be in opposition to the other, there is but one course left to arrive at that decision.—*Sir John Barrow's Life of Lord Howe.*

THE MARINER'S COMPASS.

These remarks are offered to show that electricity, either alone, or combined with galvanism or caloric, or like agents, is the cause of the mariner's compass pointing north and south, and not the poles of the earth, or their neighbourhood—which is the received opinion.—*Shipping Gazette.*

Electricity, galvanism, and magnetism, possess many similar features, having separate poles, decomposing water, and each having the powers of repulsion and attraction. The voltaic action converts a piece of iron into a powerful magnet, capable of sustaining the greatest weights. A great wheel has lately been made to rotate, with velocity, by the application of the galvanic wires. We can magnetise a bar of steel or iron at pleasure, by various methods—by a smart blow with a hammer, and other means. If we suspend a delicate bar of iron on its centre, so soon as it is magnetised, it tops up the south end, in this latitude, and the lower or north end is depressed, although continued on the same centre. Now, this operation being performed on the equator, the needle, although magnetised, still keeps parallel with the earth's surface at that part; but as it approaches northwards, the south end continues to increase its elevation, and the depression of its north end. The dipping needle it may be presumed, receives its influence in this way. In thunder storms, the compass is thrown across the disturbed elec-

tric varying stream; on such occasions, masses of stone have been thrown to the earth, the hardest metals melted by the electric fluid, and the bones of the body crushed to atoms, the skin remaining whole. Most probably the electric fluid, or fire, passing through proportionate volumes of oxygen and hydrogen gasses, formed in storms, may be the cause of the descent of showers.

I consider that these varieties of kindred phenomena, which might be made interesting by experiment, bear on the question; but I cannot at all conceive what the north pole or poles of the earth, have to do with such operations. If the earth's north pole is the cause of the magnetic influence, from whence do the sister sciences, galvanism and electricity, receive their impulses? Surely not from the north pole, or magnetic pole, as now imagined. It is also admitted, that a constant stream of electricity is passing round the earth from west and east, being deflected, or turned off, on meeting the ice. Now, admitting that this is passing with force enough to keep the compass across in its stream, would be

in itself sufficient evidence that electricity is the cause of the compass pointing north and south. Well, then, we know we can at any time keep a magnet across an artificial stream, from the machine, or galvanic apparatus, so that allowing the natural stream to be perpetually flowing round the earth from west to east, is the question not decided; and that this agent, either alone or under corresponding influences, causes the compass to point north and south across its stream. I have not heard how it can be proved that this stream is always passing round the earth, by any means equal to the proof that the magnet itself offers.

I believe it is supposed that electricity is limited to the earth's atmosphere; if that be the case, it would be difficult to understand how a sufficiently rapid stream by the earth's rotary motion only of about 1,000 miles per hour, could guide the magnet across its stream. If it is not unreasonable, why should not such agents extend through space; then the earth's motion in its orbit would give speed enough. and being an irresistible medium (unless called into action by genial combination) would form no impediment to the earth's motion. Instead then of the ice throwing off the electric stream, it would naturally diminish towards the poles, and be thrown up at the equator, or, like a wheel, the velocity or action would diminish as it approaches the axle, and hence the derangement of the compasses in the high northern latitudes, the electric stream not being powerful enough to keep the magnet across its course.

The magnetised bar, described as lopping up the south end, in this latitude, is caused by the electric force being so much higher at the equator putting the south end up. And as this bar approaches the equator, the electric stream pressing equally on both ends keeps it parallel with the earth. It is not easy of course to determine what may be the force or rapidity of this electric fluid round the globe; it is, however, quite certain, that an artificial stream will keep a magnet across it, and that in any direction we please. For instance, it will keep the north and south points of the compass east and west as long as the stream is applied; its action being the same round the two poles of the compass as when in its natural position.

It occurred to me when looking at the late comet, that its tail might be produced by friction in passing through the electric fluid with such inconceivable swiftness. That the comet should have a tail

at all, seems to imply that it must be passing through some medium; if passing through a perfect void, and meeting no sort of resistance, how could it leave a tail behind? That appendage would as readily go before it as sideways. The earth and planets leave no mark of their course; but if they whirled with equal speed they might leave the same sort of electric light behind, as that seen from the comet.

Having endeavoured to show that electricity is the cause of the magnet pointing north and south, I will now endeavour to point out, as well as I can, why the poles of the earth have no connexion with this phenomenon. The magnetic and similar forces decrease as the squares of the distance increase. Then, if the north pole of the earth were also the magnetic pole, the concentrated force of magnetic influence, to which the mariner's compass is directed, how does it happen that the nearer you approach this sole director the less affinity it has for the magnet, and at length leaves it unaffected and useless as a guide? This I deem conclusive evidence against the north magnetic pole having any influence on the compass, and quite in favour of electricity. Other situations have been assigned to the magnetic pole, and at length a flag is erected on the identical spot itself, I have not read the description of the discovery of this point. However, I am unable to conceive how it can have any sort of foundation. Two ships steer from different parts of the globe, say one from Hull the other from Quebec, and both steer direct north, we know the compass would so guide them that they would converge or draw together (sailing on their respective meridians) as they proceed north, and if the compass continued true they would meet at the north pole. But taking the new discovered magnetic pole as the attractive point, and both ships to steer again from Hull and Quebec as before, and steer for this new pole, what sort of course would be required for the Hull ship to steer? The fact is, with such a magnetic pole, our ship must steer nearly west for the north pole. It appears to me a point with neither end, side, nor middle. I sincerely hope that no more of our enterprising and valuable men will be induced to practise such experiments, either in magnetism or by vessels, to find a north west passage. The variation of the compass may be partly ascribed to local causes. The greatest I know is on the west coast of Norway, about three and a half points, the electric stream may be easily supposed to be diverted from its

course by that iron bound coast and country. The periodical changes of baritote from east to west and west to east, may arise from the oscillation of the poles of the earth, or at any rate, it would appear more reasonable to conclude that they arise from some such cause, than that the fixed magnetic pole of the earth should change places.

I believe that it has been only lately discovered that the compound steel magnet decomposes water. The application of the galvanic poles to keep a heavy wheel in motion is no light matter to reflect on; if the decrease of power by increase of distance in these agencies is

once conquered, I imagine that we may obtain any power we please. I beg to offer these remarks as my own opinions and convictions as far as I am able to form a judgment. Should any credit be attached to them, I shall be glad to obtain that portion which may be fairly due to me. If, on the other hand, my theory is put down at once by some person who has the subject at his fingers' end, let it go, I don't care two straws about it if fairly disposed of. I am ready to bend to its adoption or rejection, so soon as any person will take the trouble to decide it.

Iull, December, 1837.

B.

TRIAL OF SAILING—DIDO AND CLIO.—Sir, having read in the Hampshire Telegraph, as well as in one of the morning papers, a statement regarding the sailing qualities of H.M. Ship, Dido, which I think of a nature to mislead the public; I beg to bring to your notice the enclosed copy of a diagram of that ship's trial, with H.M. sloop, Clio, in August last, from observations made and projected at that time: and, as in your valued pages, room may not be conveniently spared for the plan itself, the results obtained from it, are also stated for the information of your reader.

First day's Trial, 16th August, 1837.—Dido hauled out of Malaga Mole in the morning; Clio weighed from the Roadsstead and with Childers, (which vessel had called off the port, being bound to the westward) joined company; stood out by the wind on the larboard (or as we say in the Dido) port tack, from 10h. 30m. until noon, light breezes at S.E. with smooth water; maximum rate 3 knots. In this hour and a half, Dido's course, S. 11° 30' W. 3 miles, 630 fathoms; Clio's. S. 18° W., 4 miles; Childer's telegraphed at 11—"you are going bodily to windward of us both," and parted company at noon.

Had Clio been ordered to tack at any time between 11 and noon, her weathering us, would have been doubtful, most of our officers were of opinion she could not have done so, and it would have shown to the world, that which is borne out by the diagram, namely, a dead loss of three cables from the wind's eye, she having started that distance from before our weather beam; from noon till 1 P.M., nearly a calm, when a light variable air sprung up from the westward; going large with all plain sail and starboard stud-sails; maximum rate, 1k. 4f.—Dido on her course, ran 3ms. 60fms.—Clio, 2ms. 52fms.; this in three hours, when

at 4 P.M. it fell calm: thus ends the first day's trial.

Second day's Trial on the 17th.—From noon until 4 P.M., light airs at E.S.E. with an increasing swell from S.S.E.; all plain sail by the wind, maximum rate, 1. 6., calm after 4 o'clock: on the larboard tack bowing the swell. The Clio on her course, S. 10° E., accomplished 2 miles. 760 fms., whilst Dido lying 5½° nearer the wind, only 1m. 760fms.; both vessels tacking a few minutes after 1 P.M. brought the swell abaft the beam, when the Dido lying 6° nearer the wind, ran exactly the same distance as Clio till 4 o'clock, when the wind left us, as stated above.

Third day's Trial on the 18th.—From 1, until 2 P.M., a light air from the S.E., all plain sail by the wind, maximum rate, 1k. 4f., 2h. 15m., wind drew round to the N.W. with swell from the S.E., going large, all sail, maximum rate, 2k. 4f.; one hour by the wind, Dido, lying as usual, half a point higher, rather exceeded Clio's distance run, when the wind becoming fair for our destination, we sailed two hours in company against a head swell with a light variable breeze, when Clio spared us her stud-sails, and even then rather gained on us: at 4h. 15m. Clio parted company, by signal: and telegraphed, "Regret we have not more wind after three day's trial":—

Now, with respect to the latter part of the paragraph alluded to; that, "the Dido has been beaten by many merchant brigs and schooners on this coast," I have to observe, that after making every inquiry of the officers, I find that no such circumstance has occurred at any time whatever. They have, however, remarked that in working to windward, she had weathered in a wonderful manner on some very fast looking schooners, and going large, outsailed all merchant craft, as much as fast-sailing ships of war usually do:

By the wind in a fresh breeze we have also chased and in three hours come up with a sixty gun French frigate, she carried double-reefed topsails, top-gallant sails, &c., and no jib, whilst we bore with ease single-reefed topsails, jib, top-gallant sails, &c.; she was about $3\frac{1}{2}$ miles a little before our weather beam, when we tacked for her. On another occasion with a small frigate of the same nation off Almeida, in moderate breezes, we tacked in chase, when she was about four miles in the wind's eye of us, and in two hours and twenty minutes, we were a quarter of a mile on her weather beam, never having changed our tack.

Had the sailing with H.M. brig, *Clio*, been considered a conclusive trial, you should have had the result at an earlier period, but such could scarcely be inferred, when after the attempts of three suc-

I am, Mr. Editor, your obedient servant,

Dido, 30th December, 1837.

AIM.

FUNCHALL ROADS, MADEIRA.—*Query for Seamen.*—Horsburgh recommends that a ship should never await a S.W. gale in Funchall roads, but get under way with the first indication of one coming on from that quarter, which, as he says is commonly preceded by a heavy swell tumbling into the roads, accompanied by gloomy weather. At Funchal lately, an old experienced trader stated, that during the last twelve years he had ridden out many gales in the roads; at first from necessity, by not having time to get away, and latterly from choice. He added, that by anchoring close in with the Loo rock, bearing about N.N.E., less than half a mile distant, the set off shore was so great that he had little or no strain on his cable. We leave this with the opinion which precedes, for the consideration or discussion of any of our readers.

PORTRAIT OF HER MAJESTY.—A full length oil-painting of the Queen has just been completed by George Hayter, Esq., and is now exhibiting for a few days (gratis) at Colnaghi's, in Pall Mall East, previous to a mezzo tinto engraving being made of it by a celebrated artist. Her Majesty is represented as seated on the throne in the House of Lords at the opening of Parliament, contemplating on what is passing immediately before her, by which a front view of her face is presented to the spectator; a rather more difficult task for the artist than any other view, but which has been most happily performed by Mr. Hayter, who has blended the thoughtful dignity of majesty with the cheerful expression of youth. The arms rest gracefully on each elbow of the

chessive days, we did not in all the trial-hours, run twenty miles; and in the *Dido* never exceeded three, and were more generally going less than two knots.

On the 14th of this month we had a short trial with H.M. sloop, *Orestes*, in light breezes before the wind, we had the advantage; in moderate breezes, wind abeam, we ran 8ms. 340 fms.; whilst *Orestes* ran 6ms. 800fms.; thus gaining rather more than one mile and a half in one hour and twenty-six minutes; in the latter case the rate gradually increased from 3k. 4f. to 6k. 4f.; the utmost was done by both as the object was, to be the first on board a water-logged timber brig; *Dido* is considered by those who have examined her to be all but jury rigged; say as an instance.—*Orestes* of 460 tons spread within a trifle, the same quantity of canvas, as the *Dido* of 738 tons.

chair, and the whole posture rather an unfavourable one for a picture, is that of unstudied ease and elegance. Her dress which consists of a rose coloured silk, embroidered with gold, is left discovered by a crimson velvet mantle, the folds of which well display its richness and are gracefully disposed throughout. Her head is surmounted by an elegant light coronet of diamonds, a profusion of which ornament the dress. Were we disposed to be fastidious, we might complain of the very minute mouth, but it is on the whole a splendid picture, and may be considered one of Mr. Hayter's happiest efforts.

We understand that the whole was planned by Her Majesty to be presented to the city of London.

NOTICE TO WHALERS.—As whale ships are beginning to cruise in great numbers between the 16th and 18th degrees of south latitude, and west of the 165th of west longitude, it is highly important to those who are interested in this branch of trade, and indeed to commerce in general, to know that ships are exposed to dreadful gales from November to April inclusive, from the 12th to the 24th degrees of south latitude, and west of 160 degrees of west longitude, as far as near the coast of New Holland; and that every year there is at least one heavy gale, or rather hurricane, the violence of which is so overpowering as to render the return of ships very doubtful. These gales generally begin from the south-east, passing gradually to the north-east, from which they suddenly fly to the west or south-west. The most violent of these hurricanes never extend to the Society Islands,

and become less severe as they approach farther east; these dangerous regions have, nevertheless, proved very abundant in whales, and may be visited in all safety from April or May to October, during the prevalence of the east winds; but no ship ought to cruise in these latitudes after October, when the winds be-

come uncertain, and the storms prevail most.—*New York Daily Express.*

THE SHORTEST PASSAGE ON RECORD.—The *Mary Queen of Scots*, Kelley, hence to Pernambuco on the 14th Nov., in 30 days, having made her passage from land to land in 23 days.—*Gore's Liverpool Advertiser.*

LIGHTS AT THE MOUTH OF THE THAMES.

The following communication has been addressed to the Trinity House, by Lieutenant Amsinck, R.N., on the important subject of lighting the entrance of the river for the steam vessels from the southward and westward—we shall be thankful for the opinion of any of our readers on it.

J. HERBERT, Esq.;

34, Abchurch-lane, December 4th, 1837.

Sir,—In laying before the public the advantages likely to arise from the construction of a tide-dock at Thames Haven, on the north shore of the river, in sea reach, (for which an act was granted in 1836,) the difficulties in navigating the entrance of the river from the North Foreland to the Nore Light, have not escaped me and particularly the detention arising from the channels being impassable at night. I have now, therefore, to propose to the honourable the Master and Elder Brethren of the Trinity House, the advantages of placing two light vessels in the southern passage; one on the north side of the East Spaniard, the other at the west end of the Queen's Channel, off the Pan Sand beacon buoy. These two lights in addition to the North Foreland and Nore Lights, will enable steam and small vessels to make their voyages by night, as well as by day, and thereby greatly facilitate the transmission of mails to and from the continent, as well as the benefit which will be derived by passengers, merchandize, and the fisheries. I have the honour to be Sir,

Your obedient Servant,
HENRY AMSINCK,
Lieutenant Royal Navy.

The Thames Haven Company will very shortly commence their works, having purchased the ground for the site of the dock, and when the railway is carried into London, which it will be contemporaneously, mails and passengers for the continent may leave London at eight o'clock in the evening, be at the entrance of the river and on their passage by nine o'clock, in Calais by 3 A.M., and in all the other parts of the continent with an equivalent saving in time, with no more addition in expense than if the vessels went direct from the custom house down the river. The saving in the river navigation is thirty-six miles, which distance is made one third longer by the delays and difficulties (omitting the dangers) of the river. The line of the Thames Haven Railway is nearly level, unexpensive, and facile of construction. The docks will be always open, and possess never less than twenty feet water; and as the company are determined to make the works of the most extensive public benefit, the carriage will be sufficiently moderate to compete with water carriage, I have the honour to be Sir,

Your obedient Servant,
HENRY AMSINCK,
Lieut. R.N.

NEW PATENTS.—William Henry Pitcher, of the West India Dock-house, Billiter-square, Middlesex, merchant for "Improvements in the Construction of Docks and Apparatus for repairing ships and vessels." John Elvey, of the city of Canterbury, Kent, millwright, for "Improvement in Paddle Wheels." John Grey, of Liverpool, engineer, for "Certain Improvements in Steam-engines, and Apparatus connected therewith," which improvements are particularly applicable to marine engines for propelling boats or vessels, and part or parts of which improvements are also applicable to locomotive and stationary steam-engines and other purposes. William Wilkinson, of

Lucas-street, St. George's-in-the-East, Middlesex, engineer, for a "Certain Improvement or Certain Improvements in the Mechanism or Machinery, by which Steam Power is applied to ships or other floating vessels in or through water." William Sandford Hall, of Stratheary-cottage, Chelsea, Lieutenant in the Army, for "Improvements in Paddle Wheels." William Fothergill Cook, of Breed's-place, Hastings, Sussex, Esq., and Charles Wheatstone, of Conduit-street, Hanover-square, Middlesex, Esq., for "Improvements in giving Signals and Sounding Alarums at distant places by means of electric currents transmitted, through metallic circuits."

ROYAL GEOGRAPHICAL SOCIETY.—12th February, W. H. Hamilton, Esq., President, in the Chair. Viscount Adair, Sir John Hanmer, Captain W. Smyth, and J. H. Hamilton.—Admitted—Extracts from a journal of the route of the French from Bona to Constantine.—Account of a visit of Sir John Franklin to Port Philip,* in which an English soldier was found who had resided there above thirty years.—A letter from Sir J. Jeffcott giving an account of the city (proposed) of Adelaide.—Sir John Barrow announced that the government had resolved on forming an establishment on the northern coast of Australia, for the purpose of protecting the increasing trade of that country with India, by Torres Strait.—

Sir J. Bremer in H.M.S. Alligator sailed lately from Plymouth for this purpose (see our movements of H.M.S.) Mr. Wheelwright alluded to his plan for steam navigation in the Pacific Ocean, for which see page 255 of our last volume.

METEOROLOGICAL SOCIETY.—13th Feb. Dr. Lee, F.R.S. &c. in the Chair. A report of the society's proceedings during the last season was read.—A new Magnet Electrometer invented by Lieut. Morrison, R.N., was exhibited, and an account of experiments with it read.—An improved Thermometer was also exhibited and a paper by Lieut. Gray, (charged with the expedition to Australia) on the meteorology of Teneriffe was also read.

THE ORIGIN OF HALF-PAY TO SEA OFFICERS; AND LORD ANSON, MASTER *v.* MARINE OFFICERS.—*From the Times.*

HALF-PAY to sea officers was first introduced in the reign of Charles II., and was originally granted to flag officers only, but some years after it was extended to the commanders of first and second-rate ships; and in 1693 it was resolved by King William in council, that the pay or flag officers, commanders, lieutenants, masters, and surgeons of the navy should be increased to twice the amount they then received, in consequence of their gallant conduct at the battle of La Hogue; and that the entire old pay (which was consequently half the increased pay) should in time of peace be continued to such of those officers as were within the description of that order of council, upon this express condition, "That they should be ready at all times to obey such orders as they should receive from the Lord High Admiral, or Commissioners for the time being." Upon this the opinion has been entertained that half-pay is a retainer, and not a reward for past services, which latter many judges have declared to be the case.

This was considered a high stroke of policy, or rather state intrigue, as it was evidently aimed at the unemployed officers, in order to prevent them engaging in the service of the expatriated James. By one of those ministerial manœuvres so prevalent in that day, it was discovered that this order being made during a war, it could not take "till a time of peace." And thus it was suffered to become a dead letter, (but it had answered the desired

purpose) until 1698,† when it became necessary to reconsider it; for, from the reported state of the health of James, it was apprehended that on the proclamation of the "young pretender," those who had been so basely deceived might feel disposed to view his pretensions in a very different light than "the revolutionary government of 1688." The Lords Commissioners of the Admiralty, therefore, presented to the Lords Justices in council a draught of a new establishment both for full and half-pay, which draught being laid before the house of commons, an address was voted to the king, "That he would be graciously pleased to take into consideration and settle the said establishment." And it was accordingly confirmed by his Majesty in council, April 18th, 1700.

By an order in council in the year 1715, this establishment of half-pay of the year 1700, was extended to all captains and lieutenants who were then unprovided for, but still under the former injunctions. The navy were indebted to the Earl of Orford, the gallant Admiral Russell, who fought the successful battle of La Hogue, for this act of justice; but, strange as it may appear, the masters were entirely overlooked (which was the more surprising, as the order of 1700 particularly mentioned them,) and this valuable body of men, so justly proportioned in William's reign, were in consequence totally neglected.

In the year 1749, which was the first

* See page 786 of our last volume, for full directions for this port.

† By this order, only nine flag officers, fifty captains, 100 lieutenants, and thirty masters were to be supported ashore, "who were to be within reach to answer any sudden or emergent occasion, and they were from time to time to transmit to the secretary of the Admiralty, the place of their respective residence, so that when his Majesty's service required it they might be called thereto." This order has ever since been in full force, and only contravened by special permission.

year after the peace of Aix la Chapelle, the masters in the navy (who had been so long neglected) by the advice and approbation of the Admiralty, petitioned the King and Council for the whole or the greater number of them to be put on the half pay list; and Lord Anson, who was then first Lord, with the other Lords, pledged them their assistance. The petition was well received by His Majesty in Council, and they would certainly have carried their point had Lord Anson not betrayed them in not acting up to the measure which he himself had advised and encouraged. The King and Council declared entirely in favour of the masters, but when the matter was referred to Lord Anson (who was in Council), as First Lord, "whether the whole or how many more masters should be put upon half-pay?" to the utter astonishment of the whole Council (for it was well known the active part he and his coadjutors had taken in the measure,) his Lordship replied, "The national debt was so great! the expence of the navy so enormous!! yet he was willing to admit the masters were a very useful and deserving class of officers—that they were entitled and ought to have half-pay; but the state of the country induced him oppose the prayer of the petition. Yet, as the Council seemed inclined to do something for them, he thought an augmentation of about twenty would be of benefit to His Majesty's service; and as for the remainder, why, as they were all good seamen, there would be no difficulty in their procuring employment in the merchant service." However chagrined many of the members felt (which was subsequently pretty freely expressed,) the order came out for the proposed addition of twenty, making in the whole fifty masters on half-pay, the first twenty-five to have 2s. 6d., and the remainder 2s. per diem. Thus terminated the year 1749 with this glorious act of faith of my Lord Anson.

The few who were fortunate enough to be selected waited on his Lordship (and it was so managed that they were collected into a body) to thank him for the extension of their number; when his Lordship, with a felicity peculiar to himself, told them, "they had applied in a wrong time; in the beginning of a peace would not do; the commencement of a war would suit, and carry some weight, which, if not attended to, why then, when they were called upon to serve, they should refuse, unless the government would allow them half-pay, and then, in all likelihood, they would obtain it."

When his Lordship gave this advice,

he little contemplated he would live to see it acted upon; for in the short space of seven years, (1748 to 1755, the commencement of the new war,) the masters of the navy were so dispersed—many of them having given up all thoughts of ever serving in the navy again, on account of not having half-pay, others fixing themselves in the merchant service, were determined to remain in it, and not quit the substance for the shadow, perhaps for a mere spirit in the navy, and then cast adrift, as formerly. Some had entered foreign service, and acted upon the same principle. All this contributed to cripple most seriously the intentions of ministers at this memorable era. Lord Anson now found his words actually verified, for, when the masters were called upon, they positively refused to serve; adding, they were not compelled, as they did not receive half-pay. They were then informed they would be "scratched off the list" for employ, if they persevered, but their determination remained unalterable; and although many were absolutely so punished, it was found unavailing, This caused a sensation at "the Board," which is seldom excited, and his Majesty's service suffered most severely. As the *dernier ressort*, Lord Anson, "the master's friend," sent for some of them, and used every means of argument, bolstering it up with large promises! but one sentiment seemed to prevail—resolution not to serve, unless an order in council was obtained for all the masters to be entitled to half-pay, when their services were not any longer required. Our ships were lying in every port, ready for sea, without masters, and not one could be obtained. Thus matters continued until 1758, during which the Lords of the Admiralty found their measures frustrated, our right arm falling into disuse and decay, and the British flag insulted under their very nostrils. Lord Anson now saw the fatal effects of his advice, the fallacious encouragement held out, and his parsimonious economy towards these essentials of the navy of England.

Affairs had now risen to that desperate state, their Lordships, with Anson still at their head, found it absolutely necessary to devise some expedient to remedy such an alarming evil. They accordingly presented a memorial to the King in Council, setting forth "how much his Majesty's service had suffered during the war for want of masters in the navy; that their lordships were of opinion that the only expedient that could be adopted to encourage proper men to be made masters, would be to raise the master's pay

in all the rates, and at the same time give them other considerable perquisites in regard to pilotage, &c." This was granted, but it had not the desired effect, as the main point—half-pay—was carefully avoided, and the ships of war continued in want of their sheet-anchor, notwithstanding the raising the pay and the encouragement of whole pilotage where they could act as pilots. But recent orders in council, the glorious events which followed each successive war, and the value of this "useful class" of officers properly appreciated, has set the matter at rest, and their merit has placed them on a footing which their country is proud to acknowledge they are fully entitled to.

It had been well if Lord Anson's other acts had borne out the "frugality" he wished the country to be impressed with as his grand object in all his pursuits relative to the service, for it must be admitted his economy at one instant vanished at some shrine or other, as appears by the following tract, which speaks for itself. In the year 1761 he added a lieutenant to each company of marines, thus saddling the nation with 135 officers, who sprang up in one night like mushrooms, and what they

were was too well known at the period in question; some sprang over counters, some jumped off the shop-board, some came from the plough tail, and others even from behind their masters' chairs,* where they held the honourable post of handing a clean plate or glass of wine to their lord's guests; and, indeed, his Lordship himself conceived it necessary to issue his orders to the several captains of the men-of-war, "That they were to be looked upon and treated as gentlemen!"

Shortly after the mystery became explained, for it was found that most of these commissions were sold at the highest price that could be obtained, by which the country was entailed with the additional expense of 9,033*l.* 15*s.* per annum during the war and a further sum of 4,516*l.* 17*s.* 6*d.* at the peace (which actually took place within two years by the treaty of Paris in 1763,) which caused the most bitter feelings in the public mind, and were vented forth in no measured terms, carrying such conviction of the justice of the accusations, as to cause nearly all the marine officers so appointed to be placed on the half-pay list, there to remain in their then existing ranks.

Law Proceedings.

YEATES v. WHYTE.—*Marine Insurance.*—To recover damages for loss occasioned by plaintiff's vessel having been run down by defendant's. Referred to arbitration.—Now before court on a special case.—Question to be decided, whether or not plaintiff, having been paid loss by underwriters, could also recover against defendant. Court decided.—Plaintiff entitled to sue on his own account, until compensated by underwriters; and afterwards might sue as trustee on their behalf.—Verdict entered accordingly.—(*Common Pleas.*)

WHIGHTSON v. BYWATER.—*A ship or no ship.*—Before Mr. Justice Patteson at Liverpool. Brought on bond entered into by defendant to sell to plaintiff a certain ship. Verdict for plaintiff for £4,200. Rule of new trial, subsequently obtained by defendant—case argued last Trinity term—point raised on construction to be put on words of contract, coupled with facts of case. Court took time to consider judgment. Question for consideration, whether ship having been stranded about

time of bargain and sale by defendant could be sued for breach of contract to sell "a ship" to plaintiff; it being alleged, a vessel so situated was "no ship" at all. Opinion of court was, that, though contract was to sell a ship—as it did not specify ship to be in a good and serviceable condition, defendant had committed his share of bargain and sale. If parties were desirous of providing for such a posture of affairs, ought to have inserted it in the deed. Though ship was on rocks, she was still a ship;—defendant to have new trial on payment of costs.—(*Buchequer.*)

THE RAPID.—*Salvage.*—Claim on part of Captain Rowley, of H.M.S. *Sapphire* for services rendered to brig *Rapid*, which got upon English Island "Gulf of Smyrna," on 4th of May, 1836. Frigate coming in sight, a signal was displayed by *Rapid*, (termed by one party a signal of distress, by others a signal for assistance.) A lieutenant sent on board to ascertain what was wanted. Water at this time shallow all round—part of cargo landed. *Sapphire* brought near as possible to *Rapid*—unsuccessful attempt made

* A remonstrance was made by a member of that honourable and distinguished corps to his Lordship, who threatened to give a company to his "Sambo" (a black!) This is the origin of Lord Camelford's parliamentary threat.

to leave her off. Next morning, high tide; brig came off herself—damage trifling. Captain Rowley obtained certificate from master of *Rapid*, left before cargo was re shipped. No steps taken to obtain salvage compensation—Captain Rowley's impression, naval officers precluded from such claim; yields to the suggestions of his officers; authorizes his agent to claim salvage. At this time, however, part of goods disposed of—proceeds remitted. Underwriters resist claim, on grounds that assistance rendered was not salvage service was void by delay and tactics.

Sir J. Nicholl held naval officers could only obtain salvage for important services, public officers differing from private services; former bound to render assistance. In this case, service most trifling, and claim delayed: was said this arose from mistaken notion; if erroneous view taken, must abide the consequences.—Court could not sustain claim upon property already disposed of, unless under peculiar circumstances.

In this case, had claim been made in time, court would not have held more remuneration necessary than something in the way of compliment to Captain Rowley and crew.—Suit dismissed.—(*Admiralty Court, Feb. 8th.*)

COURT MARTIAL.—On the 22nd Feb. a court martial assembled on board her Majesty's ship *Howe*, at Sheerness, for the trial of Lieut. J. M. Mottley, the pilot, and crew of her Majesty's cutter *Speedy*; which vessel ran on shore during the morning of the 18th ult., at Harborough. The court found Lieutenant

Mottley guilty of neglect in not having caused the lead to be kept going when near the land, he having depended on a standing order to that effect promulgated by him, without visiting the deck during the approach of the *Speedy* to the shore on which she was ultimately wrecked, to ascertain that his order was in that instance obeyed; but, in consideration of his zeal and activity in getting off the cutter, and saving a large proportion of the stores, the court sentenced him to be reprimanded, and further admonished never again to put implicit confidence in a pilot. Mr Hart, the second master, was honourably acquitted. To the neglect of the pilot, an aged and infirm man, is attributed the loss of the vessel. The pilot was sentenced to be incapacitated from acting as pilot to any of her Majesty's ships or vessels in future.

He is nearly seventy years of age, was obliged to be assisted in and out of court, where he was permitted a seat during the proceedings, which did not terminate until eight o'clock P.M.

THE TRANSIT.—*Collision.*—Question as to construction of the Pilot Act. The smack *Duke of York*, whilst at anchor in the Downs on night of 9th of January, 1837, was run foul of by *Transit*, steamer, belonging to British and Foreign Steam Navigation Company; licensed pilot on board.—Question—Whether the liability of vessel occasioning the damage was not limited under Pilot Act, 6, George IV. to amount of pilot's bond.

Sir J. Nicholl said, case of considerable importance, should take time to consider, and to look into cases.

(*Admiralty Court, Feb. 1st.*)

Records of Wrecks.

[The numbers refer to the names in the tables.]

THISTLE, Brig. No. 98—Newcastle to Dundee with coals—Lost sight of the lights in consequence of haze—struck on Elbow Sand—brought up—darkness—signal with tar barrel for assistance—slipped chain and tried to wear—struck again on Coal Bank—took to boat—swamped—regained brig—boats went keel up—six and a half hours in the rigging—fishing boat from North Ferry arrived—saved three seamen—brave attempts to save others, on the part of Alexander Gall, in particular, and the rest in the boat.

MEDORA, No. 80.—Lost about 40 leagues N.E. of Bahia—crew and passengers said to be saved—wreck stated to have been plundered by natives—heavy insurances at Lloyd's.

SIR ROBERT H. DICK Ship. No. 93—Left London 9th October.—Lost on Half Moon Rocks, Cape Sable, in the night of the 22nd November—five drowned having taken to boats against orders of the master—captain and crew thirty hours on the wreck.

KILLARNEY, Steamer of City of Bristol Company.—19th Jan. left Cork for Bristol—weather bad—returned about 8 P.M.—Mr. R. Callaghan remained on shore—about eight P.M. started again—surprise among passengers—weather still bad—gale increasing—small progress—at midnight vessel lurching fearfully—great counteraction—shipping seas, and water rushing in through a dead light astern, floated cabin deck—attempts to secure it ineffec-

tual—great exertion at the pumps to keep water under in the hold, as it was shipped—continued till four on Saturday morning, when pumps were choked by coal—water rose rapidly and extinguished the engine fires—vessel lying in trough of sea—captain throughout encouraging the men—blowing hard—weather misty—a terrific sea running—vessel's situation and position of land uncertain—150 pigs washed overboard (said to have 650 on board at starting). In the cabin silence and despair—heroic and praiseworthy conduct of Mrs. Lawe—her cool and christian-like resignation—surrounded by passengers—crew employed in lightening the vessel of water with buckets—by noon on Saturday succeeded in enabling fires to be relighted—fog dense—the vessel driving no one knew where—sail set to steady her—determined to run for land at all risk—great anxiety and distress occasioned by pigs pressing the vessel to leeward, and disgust at their not being thrown overboard—It is stated, "But for the pigs we should have all escaped." At 3 P.M. on Saturday, fog cleared away—land discovered—supposed Kingsale Head to leeward about four miles—steam ineffectual and vessel on beam ends—unable to carry sail to weather it. Robert's cove discovered determined to make for it—blowing a hurricane—vessel got before the wind—sea ran over her causing much havoc—washed away some passengers and all the pigs on deck—vessel on beam ends—a second sea hurried away Mr. Lawe, and Lieutenant Nicolay—hurling the vessel round, when a third sea dashed her on the rocks—repeated seas carried victims to their graves—seamen landed on the rock, and by a rope some of the passengers were also landed—others lost in endeavouring to land, the vessel in the course of an hour (about five P.M.) dashed to

pieces, no vestige of her left—those remaining on board perished. The rock a considerable height above the level of the sea—200 yards from the perpendicular cliff which is 300 yards above the sea—no beach—twenty-one persons gained the rock out of thirty-seven, the number on board—Saturday night passed on the rock in extreme suffering, occasioned by the extreme cold (see our nautical register for 20th January) the wind and sea, and want of clothing. On Sunday, the utmost exertions made to communicate with rock by the gentry of neighbourhood—various contrivances, all ineffectual—Sunday night passed—on Monday a communication effected by a rope, and some sustenance conveyed to the perishing individuals—a cradle formed and the sufferers hauled up the precipice one at a time in it—one died soon after—total perished, twenty-four. The greatest attention shown by the gentry, and as usual, robbery and plunder on the part of the peasantry. The following verdict was declared by the coroner's inquest which sat on one of the bodies:—

"That the deceased, Morrison, was drowned in the Killarney wreck, on Saturday, the 20th ult. They also found 'that George Bailey, the master, did his utmost to save the lives of the passengers and the vessel, except inasmuch as he did not go below to the engine-room to see what stopped the engines; The jury also found 'that the great number of pigs in the vessel accelerated her destruction.' They recommended that an application should be made to the proper authorities for some salutary regulations in the future navigation of steamers on that part of the coast, and that life-boats and other means should be provided for the preservation of life in cases of shipwreck."

NEW BOOKS.

NARRATIVE of an Expedition into the interior of Africa by the river Niger, in the steam-vessels, Quorra and Alburkah, 1832—4. By Macgregor Laird, and R. A. K. Oldfield, surviving officers of the expedition. Bentley, London.

The extent of Mr. Laird's travel into the interior of Africa, was to Fundah, on the river Tchadda, a place mentioned, but never seen by Lander; and that of Mr. Oldfield's, was Rabbah, which was well known to that unfortunate traveller. The position of Fundah and the portion of the Tchadda between it, its confluence with the Niger may be considered the only addition to geography obtained by the expedition. It is not, however, to the geographer, but to the mer-

chant, that Mr. Laird's book is valuable. This gentleman has considered the country and its resources in a business-like manner, and has recorded the result of his observations which are just those that were required. As usual in works about Africa, tales of sickness and death abound in its pages, and besides the foregoing recommendations, it has all the interest which belongs to adventurous travellers.

WRECKS OF BRITISH SHIPPING—CONTINUED FROM THE SHIPPING GAZETTE.

(Continued from page 68.)

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
Almwell		Glasgow	Limehack	Black Sod	13 Jan.	
Amelia		Cardiff	Bristol	Hook Sand	21 Dec.	All lost
45 Belleisle	Of Carlisle			In weather		
Betsy	Stevens	St. Johns		Nova Scotia	2 Oct.	
Boyne	Crawshaw	Ipswich		Szegness	24 Jan.	Three drowned.
Bradywine	Packet	Charotto	London	Corwall	26 Jan.	Seven drowned.
Bride of Abydos	Carpenter	Liverpool	Ancona	Areiro	17 Dec.	Crew saved
60 Briton		Whaler		Christmas I.	1 Oct.	Crew saved
Cansen	Garbutt	Gaape	London	Bryan I.	10 Oct.	
Charles	Meslina	Meslina	Jersey	Scilly	10 Oct.	Crew saved
Comet	Smith	Sunderland		C. Norfolk	13 Jan.	Crew saved
Commerce	Mc. Grath	Swansea	Youghall	Swanhall	29 Dec.	
56 Defiance	Ramm	Alexandria	Odessa	Kill	Jan.	All lost.
Delight	Jefferson	Penang	London	Madras	31 Oct.	
Dove schooner	Gandall	Newcastle	Jersey	Braye R.	2 Jan.	
Duke of York	Whaler			Australia	14 Aug.	
Edward		Quebec	Sunderland	Ireland	14 Aug.	8th Oct.
68 Edward		Cork	Waterford	Not heard of	19 Dec.	
Klisa		Halifax	Miramichi	Nova Scotia	3 Nov.	
Faithful	Davison	Newcastle		Hambro' H.	20 Dec.	Captain lost.
Fame	Moorson	Whitby		Robin Hood B.	21 Dec.	Two saved.
65 Gem	Mollard	Portreath	Swansea	Off Padeton	3 Dec.	Contact.
Hope				Madras	31 Oct.	
Jane	Cables	Riga	Belfast	Domeness Rf.	27 Nov.	
Killarney (3)	Portaferry			Dundrum B.	7 Dec.	Two lost
London (sch)	Bailey	Cork		Off Flat Head	20 Jan.	
70 Lord Selkirk		Plymouth	Glasgow	Dundrum C.		
Lord Wellington		Richbitto	Wreck	Dundrum	Nov.	
Lynn		Portsmouth	Sunderland	Ambleteuse	25 Dec.	
Maid of Butc st.	Higgias	Boephoras	Odessa	Black Sea	7 Jan.	
Martha	Vincer	Liverpool	China	Rothsay	8 Jan.	By fire.
73 Martin	Addison	Shields	Liverpool	China I.	9 Sept.	Crew saved.
Mary	Turner	Shields		Goodwin	4 Feb.	Three drowned.
Mary Ann	Wilson	Liverpool	Fugwash	C. Norfolk	13 Jan.	Crew saved.
Mary and Littlejohn	Reed			Table I.	28 Oct.	
Mary and Richardson						
80 Medora		London	Genoa	At Sea	9 Jan.	Abandoned.
Mercury		Sydney	London	Rio Real	Oct	
Midas		Passed in	Cattagat	Capized	5 Nov.	
Middleborough		Odesas	Falmouth	Boephoras	1 Jan.	One lost.
Neptune	Morgan	Carmarthen	Bristol	Whitby	21 Dec.	Crew saved.
85 Neptune	Bodasan	Halifax	Chalmac	At Sea	Dec.	
Olive branch	Adams	St. Laccar	Bristol	Nova Scotia	22 Nov.	
Pandora	Inglis	Newcastle	Bordeaux	Bungarvon	20 Jan.	Crew saved.
Pence	Of Scarbrough			I. Arvent	16 Jan.	Some lost.
Rebecca		London	Sunderland	Bridlington	21 Dec.	
90 Reform	Fobey	St. Vincents	Digby	Newbigin R.	20 Dec.	
St. Johnston	Perth			Bier I.	30 Nov.	Crew saved.
Sothea	Hicks	Newfoundnd.		Warkworth	14 Dec.	
Sir R. H. Dick		London	Oporto B.	C. Sable	10 Dec.	
Sophia	Eastern	Montreal	Greenock	Port. Neuf R.	22 Nov.	Five drowned.
95 Spiritly			Lost on	Black Middens	22 Nov.	Fourteen lost.
Swallow	Potter	Neath	Telgnmouth	Off Padston	Dec.	Wreck sold for £25.
Sussey Packet				New Zealand		
Tastic	Keddie	Of Dundee		Tay	30 Dec.	Crew saved.
Treasend	Albitt	Kilbrusk	London	Neath	20 Dec.	Master lost.
100 Tyle	Kemp	Danson	Whitehaven	Black Sea	7 Jan.	Crew saved.
Union			Shields	Dundrum Bay	21 Jan.	Crew saved.
Venus			Shields	Dumdee	16 Dec.	
Victoria sch.	Dunn	Halifax	Liverpool	Dominica	21 Aug.	Crew saved.
Water-witch	Newby	Liverpool	London	Barbadoes	28 Dec.	Crew saved.
105 William	Evans	Whaler		Black-water B.	8 Aug.	
Wolf				Howes I.	8 Aug.	

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

CAPTAINS, J. F. Appleby, E. H. Scott. NANTS, J. Fitzjames E. P. Charlwood
 COMMANDERS, S. Umfreville, R. Wadham, R. F. Lewis, W. H. Dobbie.
 returned, C. Festing, G. Elliott. LIEUTE-

APPOINTMENTS.

APOLLO, *troop-ship*.—Mr. Alexander Karbey, (to command) Mr. C. P. Bellamy, *Master*, to command (pro tem) for Mr. Karbey; *Second Master and Pilot*, James G. H. Thain. ANDROMACHE, 28,—*Capt.* R. L. Baynes, C.B.; *Assistant-Surgeon*, Mr. David Boothe. BRISK, 3.—*Clerk in charge*, Kenneth L. Sutherland; *Pursuer*, Jas. Moonstevan; *Mast.-Assist.*, Mr. G. H. Harper. BRITANNIA, 120.—*Surgeon*, C. A. Browning, M.D., Mr. Martin; *Sup.*, Dr. Thomas Stratton; *Assist.-Surgeon*, Thomas H. Reown; *Mate*, Mr. Justus R. Roogotia. CALLIOPE, 28,—*Mate*, H. Le Viscoute. CANADA,—*Capt.*, W. Sandom, for particular service on lakes. CHARYBDIS.—*Clerk in charge*, Mr. Geo. B. Fuller. CRACKER, *Cutter*.—*Mate*, J. Hogg. COCKATRICE, 6.—*Assist.-Surg.*, T. J. H. Thompson. CRUIZER, 16.—*Lieut.* Montague Hayes. DONEGAL, 74.—*Mate*, J. Stoddard. ELECTRA, 18.—*Master*, W. D. Browne. EXCELLENT.—*Lieuts.*, E. P. Charlewood, J. Fitzjames; *Mate*, E. P. Chamberlain. FEARLESS, St. V.—*Engincer*, W. Furnell. HASLAR HOSPITAL.—*Surgeon*, J. Richardson, M.D. *Assist. Surg.*, Mr. Rean; *Hospital Mate*, Thomas H. Reown. HASTINGS, 74.—*Capt.*, F. E. Loch; *Com.*, H. J. Worth;

Assist.-Surg., T. Stratton, M.D. HERCULES, 74.—*Co.n.*, C. Festing; *Lieuts.*, G. Welsh; *Surgeon*, C. A. Browning. HAZARD, 18.—*Mate*, H. Temple. INCONSISTANT, 36.—*Mate*, L. Bainard. LILLY, 16.—*Mate*, J. Miller. LYNX, 3.—*Mate*, D. H. Mc Neil. MALABAR, 74.—*Capt.*, Edward Harvey; *Assist.-Surgeon*, Mr. William Lambert. MELVILLE, 74.—*Lieut.*, M. A. Little. MODESTE, 18.—*Lieut.*, Hon. H. A. Murray. NAUTILUS, 10.—*Mate*, H. Mottley; *Second Master*, H. Brehant; *Clerk in charge*, D. T. Clow. NORTH STAR, 28.—*Clerk add.*—J. Joiner. PARTRIDGE, 10.—*Mate*, C. Nelson, W. S. Wiseman; *Mast.-Assist.*, W. H. Dix. PINCHER, 5.—*Sec. Mast.*, Mr. W. Yeames. PLYMOUTH HOSPITAL.—*Surgeon*, G. Johnson. PRINCESS CHARLOTTE, 120.—*Clerk*, G. P. Rickard. ROYAL ADELAIDE, 104.—*Clerk add.*, Mr. Heamer. SCYLLA, 16.—*Lieut.*, O. H. Dyke. TARTARUS, St. V.—*Lieut.-Com.*, G. W. Smith. VICTORY, 104.—*Lieut. add.*, W. Roberts; *Second Master*, W. Forbes, for packet service; *Master add.*, Mr. James Fring; *Mast. Assist.*, Thomas J. Whillin. VESTAL, 26.—*Mate*, H. Baillie, W. P. Johnston, W. F. Warren. VOLAGE, 28.—*Coll-mate*, Mr. R. H. Dalton.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

AFRICAN, St. V. Sur., Captain F. W. Betchey, 16th Jan. arrived at Holyhead, in tow of a steamer; left Holyhead for Dublin. ALLIGATOR, 28, Captain Sir J. G. Bremer, C.B., 12th Feb. left Plymouth for Australia. ANDROMACHE, 28, commissioned at Sheerness, by Capt. Baynes, C.B. fitting. APOLLO, 46, Portsmouth, fitting as troop ship. BRITOMART, 10, *Lieut.-Com.*, O. Stanley, 12th Feb. sailed for Australia. CALLIOPE, 28, Captain T. Herbert, fitting at Sheerness. GANNET, 16, *Com.* G. Whisk, arrived at Spithead, 9th Feb.; 11th, sailed for Sheerness. HASTINGS, 74, commissioned by Captain F. E. Loch, at Sheerness, to take the east of Durham to Canada. HERCULES, 74, Captain J. T. Nicolas, C.B., 15th Jan. arrived at Plymouth, left Lisbon on the 7th; 10th Feb. left for Cork. LYNX, 3, *Lieut.-Com.* Broadhead, 14th Jan. at

Sheerness; 26th Jan. arrived at Ports mouth; 29th, arrived at Plymouth; 10th Feb. sailed for Africa. MALABAR, 74 commissioned at Plymouth by Captain E. Harvey, Feb. MODESTE, 18, *Com* G. Eyres, fitting at Woolwich. PARTRIDGE, 10, Tender, *Lieut.-Com.* W. Morris, Portsmouth, fitting. PINCHER, 5, *Lieut. Com.* T. Hope, Chatham, fitting. PIQUE, 36, Captain E. Boxer, 23rd Jan. left Cork with troops for Halifax. RACEHORSE, 18, *Com.* H. W. Crawford, Plymouth, fitting. ROYAL GEORGE Yacht, Captain Lord Adolphus Fitzclarence, taken into dock at Portsmouth, in expectation of attending Her Majesty next summer. VESTAL, 26, Captain T. W. Carter, Sheerness, fitting. VOLAGE, 28, Captain H. Smith, fitting at Chatham. WASP, 16, *Com.* Hon. D. Pelham, 26th Jan., sailed from Plymouth for Mediterranean.

ABROAD.

ATHOLL, 28, Troop Ship, *Master Com.* Alex. Karby, 2nd Nov. arrived at Simon's Bay from Cork and Ascension; 5th, sailed for Mauritius. BARRAM, 50, Captain A. L. Corry, 14th Jan. arrived at Malta from Naples. BEAGLE, 10, *Sur. Ves.*, *Com.* J. C. Wickham, 13th Oct. left the Cape for Swan River. BELLEROPHON, 80,

Captain S. Jackson, 10th Jan. 38, at Malta. BONETTA, 3, *Lieut.-Com.* H. P. Deschamps, 22nd December, left Princes Island for Ascension. BUZZARD, 3, *Lieut.-Com.* J. Stoll, Dec. 37, at Princes Island. CHAMPION, 18, *Com.* G. S. V. King, 26th Dec., 37, at Jamaica. COLUMBINE, 16, *Com.* T. Henderson, Dec., 3

off Whydah. CONWAY, 28, Captain C. R. Drinkwater, 6th Sept., 37, arrived at Sydney from Madras. CORNWALLIS, 74, Captain Sir R. Grant, 7th Dec. left Barbados for Grenada with troops; 10th Jan. arrived at Halifax. DIDO, 18, Capt. I. Davies, C.B., 25th Dec., at Gibraltar. DOLPHIN, 3, Lieut.-Com. J. Mc Dougal, Dec., off Whydah. FAIR ROSAMOND, 2, Lieut.-Com. W. B. Oliver; Dec., at Prince's Island. FIREFLY, St. V., Lieut. Com. S. Pearse, 10th Jan. at Malta. GANNET, 16, Com. W. G. H. Whish, 10th Jan. 38, left Barbados for England. GRIFFIN, 3, Lieut.-Com. J. G. D'Urban, 10th Jan., 38, at Barbados. HARPY, 10, 10th Jan., at Barbados going to Antigua, having lost her Commander, Lieut. Hon. G. R. Clements, Dr. Tennant, and 18 of her crew, at Sierra Leone, whither she had been to condemn a slaver. HARRIER, 18, Com. W. H. H. Carew, Oct. at Callao. HAZARD, 18, Com. J. Wilkinson, 5th Jan., at Corfu. HIND, Tender to Flag Ship, Mediterranean, Lieut.-Com. E. Codd, 6th Jan. left Malta for England. HYACINTH, 18, Com. Warren, 15th Dec. arrived at Teneriff. JUPITER, 38, ———— 14th Dec., arrived at Malta. LARNE, 18, Com. P. Blake, 11th Nov., arrived at Calcutta. LEVERET, 10, Lieut. Com. C. J. Bosanquet, 2nd Dec., in Simon's Bay. MADAGASCAR, 46, Captain J. S. Peyton, K.C.H., 13th Dec. arrived at Jamaica. MINDEN, 74, Captain A. R. Sharpe, to leave Gibraltar, 22nd Jan. with troops for Canada. ORESTES, 18, Com. J. F. Newell, 25th Dec. at Gibraltar. PELICAN, 16, Com. B. Popham, 30th Nov. off Bonny. PIQUE, 36, Captain E. Boxer, spoken in 46° north and 20° west. PORTLAND, 52, Captain D. Price, 10th Jan., 38, at Malta. PRESIDENT, 52, Flag of Rear Admiral Ross, arrived at Madeira, 14th Jan., 38; sailed the 17th. PRINCESS CHARLOTTE, 104, Flag Admiral Hon. Sir R. Stopford, Captain A. Fanshawe, 24th Jan. at Malta. PYLADES, 18, Com. W. L. Castle, 2nd Dec. in Simon's Bay. RACER, 16, Com. J. Hope, 10th Jan. at

Barbados. RAINBOW, 28, Captain F. Bennet, 13th Dec. at Jamaica; 14th Dec. sailed for Vera Cruz and England. RAPID, 10, Lieut.-Com. Hon. De Ros Kinnaird, 14th Dec. arrived at Malta from Mahon; 24th Jan. at Malta. RINGDOVE, 16, Com. S. Nixon, 26th Dec. at Jamaica, having captured a slaver. RODNEY, 92, Captain H. Parker, 21th Jan. at Malta. RUSSEL, 74, Captain Sir H. Dillon, K.C.H., 10th Jan. at Malta. SAMARANO, 28, Captain W. Broughton, 5th Nov., 37, arrived at Bahia, from Pernambuco. SAPHO, 16, Com. T. Frazer, 9th Dec., at Jamaica. SARACEN, 10, Lieut.-Com. H.W. Hill, Dec., off Benuin. SCORPION, 10, Lieut.-Com. C. Gayton, 24th Jan. at Malta. SCYLLA, 16, Com. Hon. J. Denman, 8th Jan., arrived at Lisbon. SERINGAPATAM, 46, Captain J. Leith, 10th Jan., at Barbados. SKIPJACK, 5, Lieut.-Com. S. Robinson, 9th Dec., at Jamaica. SNAKE, 16, Com. A. Milne, 13th Dec. off Cuba; captured two slavers; arrived at Jamaica. SPARROW, 10, Lieut.-Com. R. Lowcay, 18th Oct., arrived at Rio; 3rd Nov., sailed for Falkland Islands. SPITFIRE, 6, St. V., Lieut. Com. A. Kennedy, 10th Jan., 38, at Malta. STAG, 46, Commodore T. B. Sullivan, 24th Aug., arrived at Callao from Africa. THALIA, 46, Captain R. Wauchop, 2nd Dec., in Simon's Bay. THUNDER, Sur. Ves., Lieut.-Com. T. Smith, (protem) 14th Jan., arrived at Madeira. TRIBUNE, 24th J. Tomkinson; 4th Jan. left Malta for England; 27th, arrived at Cadiz. TYNE, 28, Captain J. Townsend, 18th Jan., arrived at Gibraltar from Portsmouth. VANGUARD, 80, Capt. Sir T. Fellows, 10th Jan. at Malta. VICTOR, 16, Com. R. Crozier, 12th Sept. left Sydney for Madras. VIPER, 6, Lieut. Com. W. Winnicott, Dec. at Fernando Po. WATERWITCH, 10, Lieut.-Com. W. Dickey, Dec. off Bonny. WOLVERINE, 16, Com. Hon. E. Howard, 15th Dec., arrived at Malta from Athens; 24th Jan. at Malta.

Marrriages.

At Fareham, by the Rev. W. D. Harrison, Vicar of South Stoneham, George Thos. Maitland Purvis, Esq. of Blackbrook Cottage, Fareham, to Esther North, daughter of the Rev. W. Harrison, Vicar of Fareham.

At Hambledon Church, on the 18th, Jan. by the Rev. Stephen Butler, Capt. Fitzgerald Gambier, R.N., second son of Sir James Gambier, to Hester, only daughter of Thomas Butler, Esq., of Berry Lodge, in this county.

At Bath, on the 4th February, John Sarsfield Macnamara Moore, Esq. R.N., son of the late Major Moore, R.M., to Charlotte Catherine, daughter of the late Charles Dumbleton, Esq. of Marlborough Buildings, Bath.

At Greenwich, John Tingcombe, jun., Esq. of Hyde Vale, to Anna, daughter of the late Capt. M'Leod, R.N.

Deaths.

At Dartmouth, suddenly, Vice-Admiral R. H. Pearson, of Richmond Walk.

At Datchet, in her 18th year, Caroline Ellen, youngest daughter of the late Vice-Admiral Sir John Gore, K.C.B.

In Portland-place, Gosport, in the 15th Feb., Ninian Jeffreys, Esq. Master R.N. (1780), in the 85th year of his age.

On the 20th Jan. at the house of Mrs. Goodenough, Heath, near Wakefield, William Mills, Esq., Lieutenant of the Royal Navy, of Wellington, county of Durham, aged 41.

Lately, Jas. Clyde, Esq., Purser, R.N. (792.)

Lately, on the Coast of Africa, on board her Majesty's brig Harpy, Dr. John Tennant, Assistant Surgeon of that vessel.

In London, on the 13th Feb., aged 76 Clephan Cairns, wife of Dr. Jas. Cairns R.N.

At his residence, Tavistock Place, Stoke, John Mosley Marchant, Purser, R.N. (1794) aged 70.

On the 1st Feb., as Dumfries, N.B. of intermittent fever, Charles Heaton Denham Robinson, second son of Lieut. Charles G. Robinson, R.N. employed on an Admiralty survey of the coast of Scotland.

At Halifax, N.S. on the 20th Dec., John Stirling, Esq., Surgeon, R.N. (1806) for many years a medical practitioner in that Town.

METEOROLOGICAL REGISTER,

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

JANUARY, 1838.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
22	M.	In. Dec. 29-69	In. Dec. 29-72	38	41	37	43	S.	S.E.	2	2	Bc.	B.
23	Tu.	29-70	29-64	32	36	30	37	N.E.	E.	4	5	O.	Bc.
24	W.	29-73	29-71	25	25	24	26	E.	N.E.	8	8	Oq.	Oq.
25	Th	29-53	29-43	25	27	23	28	N.E.	N.E.	6	5	Oq.	O.
26	F.	29-35	29-32	27	28	25	29	N.E.	N.E.	4	4	O.	O.
27	S.	29-26	29-24	28	29	26	29	E.	N.E.	4	3	Og.	Og.
28	Su.	29-44	29-46	28	31	27	23	N.E.	S.E.	1	1	O.	Bcm.
29	M.	29-47	29-51	36	42	29	43	S.	S.E.	2	2	Bc.	Bc.
30	T.	29-62	29-62	34	34	33	35	E.	E.	3	3	Ofd. 2)	Od. 4)
31	W.	29-76	29-82	33	33	33	34	N.E.	N.E.	4	4	O.	O.

JANUARY—Mean height of the Barometer=29-865 inches; Mean Temperature=28-5 degrees
Depth of Rain and Snow (melted) fallen=0-80 inches.

FEBRUARY, 1838.

1	Th	30-05	30-07	31	31	30	32	N.E.	N.E.	3	4	O.	O.
2	F.	30-30	30-33	30	32	29	33	N.	N.	5	6	O.	Bcm.
3	S.	30-34	30-35	29	32	24	34	N.	N.	2	3	Bcm.	Bcm.
4	Su.	30-36	30-32	25	30	23	31	N.E.	N.E.	5	4	Bc.	Bc.
5	M.	30-25	30-21	25	34	21	35	N.E.	N.E.	4	4	B.	Bca. (3)
6	Tu.	29-99	29-85	26	32	23	33	E.	S.E.	3	4	B.	Bch. 4)
7	W.	29-52	29-41	37	44	29	45	S.	S.	4	5	Bc.	Od. 4)
8	Th.	29-13	29-01	43	47	41	49	S.W.	S.W.	5	6	Qb.	Qor. (3)
9	F.	28-70	28-60	42	42	40	45	S.W.	S.W.	7	7	Qor. (2)	Qor. (3)
10	S.	29-16	29-10	31	34	30	35	N.E.	N.E.	3	3	O.	O.
11	Su.	29-35	29-42	26	33	24	34	N.	N.	4	3	Bc.	Bc.
12	M.	29-56	29-52	25	30	22	32	S.W.	N.E.	1	1	Hm.	Bcm.
13	Tu.	29-51	29-53	31	34	17	34	N.E.	N.E.	2	2	B.	Bc
14	W.	29-73	29-74	23	34	19	35	N.E.	N.E.	1	2	B.	B.
15	Th.	29-60	29-57	26	30	24	31	E.	E.	5	6	Qo.	Qo.
16	F.	29-51	29-57	28	32	26	32	E.	E.	6	6	Qbcm.	Qo.
17	S.	29-64	29-66	28	34	26	34	E.	W.	4	2	Os. (1) r. 2)	Os. (3)
18	Su.	30-05	30-15	33	34	31	35	N.	N.E.	2	2	O.	O.
19	M.	30-16	30-07	33	37	31	37	E.	S.E.	2	2	O.	O.
20	Tu.	29-67	29-63	27	40	24	41	E.	S.E.	2	2	Bc.	O.

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Communications with the Kaffirs

ORIGINAL PAPERS.

APRIL, 1838.

THE AGGER CHANNEL,—*Coast of Jutland.*

In the "*Nautical Magazine*" for the month of April, 1836, the following notice* appeared respecting the Agger Channel. "A few years ago, the sea made an irruption on the west coast of Jutland, through a narrow tract of land, which formed a barrier between the sea and Limfiord, a large inland lake which communicates on the east with the Cattedag. The aperture thus formed, called the Agger Channel, (from its immediate proximity to the fishing village of Agger,) is situated in latitude $56^{\circ} 40' 42''$ and establishes a junction with the Limfiord and the North Sea, by which the northern part of the peninsula is perfectly isolated." The account then stated the kind of vessels that might use it, and the number which had used it in the course of the preceding year, and alluded to the advantages derived to navigation by adopting this passage into the Cattedag, instead of the circuitous route by the Scaw.

In the summer of 1836, the British Consul at Elsinore, reported to Government on the state of the channel, and the measures adopted by the Danish Admiralty, to facilitate its navigation, which report† was also published in this work. And last year a similar report, accompanied by a chart of the channel from a survey, made by order of the Danish Government, was transmitted by our Consul. By this latter it appeared that little or no alteration had taken place since the former, which we shall insert here to accompany the chart now laid before our readers.

Extract of a Letter from Consul M'Gregor, dated Elsinore, 14th May, 1836.

"With the view of facilitating the navigation through this channel, the Danish Admiralty, by an order dated 7th April, have sanctioned the erection of a Pilot Establishment at its entrance from the North Sea. In consequence, to the south of that entrance, on a sandy eminence, and near a temporary watchhouse, has been placed a signal post, the flag of which, hoisted at the top, signifies that the vessel has been observed, and that the assistance of a pilot is offered. The said flag being lowered—

* Page 242.—Vol. 1836.

† Page 375.

Once, denotes 1 foot of water ;
 Twice, — 2 feet of water ;
 Three times,— 3 ditto ;
 Four times,— 4 ditto ;
 Five times, — 5 ditto ;
 Six times, — 6 ditto ; and so forth.

“ After this, the pilots go out to the vessel that makes the customary signals.

“ The rate of pilotage, according to a tariff exhibited in the pilot-office, has been fixed for the present at two rix bank dollars, silver, (equal to 4*s.* 6*d.* sterling,) per foot of the ship's draught of water ; and in the winter season at one-third more ; which rate will eventually be reduced, should the navigation of the channel increase.

“ Ships entering from the North Sea may obtain pilots for the several ports and places in the Limfiord.

“ According to the soundings which have been taken at different periods, the depth of the western entrance varies from five to seven feet, and at the eastern entrance from five and a half to six feet. In the channel itself, which affords good anchorage, the depth, both from the frith and the sea, increases to eighteen feet ; which depth, however, is subject to continual changes. The mouth of the channel towards the sea is about half a Danish mile wide ; but further up towards the frith, it declines from 250 to 50 fathoms. Its length from the sea to the commencement of the frith is supposed to be three-quarters of a Danish mile.

“ Any alterations in the course of the depth of this channel, as well as the names of the vessels frequenting it, will from time to time be communicated in the Danish papers.”

THE STRAIT OF ALLAS.

[The following observations on the Strait of Allas, by Captain Gabriel La Fond, will be found useful to vessels following that much frequented navigation. They appeared in the “ *Annales Maritimes*,” with a handsome tribute from the French officer, to the memory of our departed countryman Capt. Horsburgh.—ED. N. M.]

THE Strait of Allas is formed by the Island of Sumbawa on the east, and by that of Lombock on the west. To pass through it either from the northward or southward, a vessel should always keep on the Lombock shore, on which anchorage may be found when the wind and tide are unfavourable. This is not the case on the coast of Sumbawa, which is steep and without any convenient place of landing to procure water and provisions. Another reason which ought to induce captains of vessels when passing through the strait, to keep the Lombock shore, is, that this island has a considerable bend in the southern part of the stait ; and, consequently the currents run with much less force

there than on the coast of Sumbawa, which is straight, and near which is the deep channel connecting the two seas. If then a vessel, however good a sailer she may be, working through this strait, either to the northward or southward with the tide favourable, should, instead of keeping on the Lombock shore, where she may always anchor and await a tide, find herself near the coast of Sumbawa, or in the middle of the strait,—when the tide changes she will be carried away by the rapidity of the current, and will lose in a few hours all that she may have gained for several days.

In entering the strait from the southward, and when approaching it from the west, it is necessary, in order to avoid being drifted from it to sea, to endeavour as much as possible to make the Peaks of Bally and Lombock before sun-rise, because the sun's rays generally impede the view of very distant high land. The peak of Bally has the form of a sugar-loaf; that of Lombock is terminated by a crater now extinguished, which, seen from the south, appears divided in two. This peak, which is of considerable height, is situated on the northern side of the island, and the ridge of it may be traced gradually to the coast, which at that part is level and low. Attention ought also to be paid to the fact, that during the night, calms or slight land breezes generally prevail; and if a vessel be off the entrance of the strait, the current running out will set her far out to sea. The southerly wind being established about noon, a vessel will gain the entrance of the harbour about sunset, when stormy weather often gathers over the mountains of Sumbawa, and the wind becomes foul. But, in adopting precautions against it she should not tack, but on the contrary, should endeavour to profit by it to enter, keeping as close to the wind as possible, and even making some boards if necessary; the entrance being *very safe*. The rock, Horsburgh speaks of, situated at the southern entrance of the strait, upon the coast of Lombock, is only visible when you are in the entrance of the harbour, and cannot be seen at a distance from the shore.

The Island of Sumbawa, although woody, appears to be of volcanic formation, and is exceedingly rugged. The sea, at the entrance of the strait, is sometimes rough and violent, particularly when the current is contrary to the wind.

The most convenient places for taking in water and procuring provisions, in the Strait of Allas, are Peejow or Loboagee. This village is situated in the bay formed by the island of Lombock in the southern part of the strait, and in which the anchorage* is in twenty fathoms, sandy bottom. Water is not easily obtained there, and wood is rare. Rice, fowls, ducks, dried goats' flesh, oxen and horses, are to be had there. A little farther north is a river which empties itself into a small creek, in which boats can only enter at high tide. Water is

* Horsburgh says about 1 or 1½ mile from the shore; and he particularly cautions ships against the Malay Proas.

easily obtained there, but there are no houses. Still farther north is the town of Bally, situated almost in the centre of the island, and a river where small craft can enter. At Bally, every kind of provision is to be had in great abundance. Seegar, a village at a short distance, bearing the same name, at the northern entrance of the strait, is a place where water and fresh provisions are to be procured. But the landing at all these places, is difficult during the eastern monsoon; for the wind blowing on shore, renders it very troublesome to effect a landing through the surf which it raises. Lombock is a village, situated to the north of the mountain of Seegar and at the extremity of a tolerably spacious creek where the Malay Proas take in their cargoes of rice; but vessels are obliged to anchor outside the sandy island, to the northward of the mountain of Seegar, or between the sandy island and the shore. To reach it, you pass south of the rocky islands and north of this little island, and anchor in fourteen fathoms, on a sandy bottom, between the island and the shore, distant about two cables length from each. The village of Lombock is not perceptible from the anchorage. Vessels only requiring water and wood, will find these articles on the coast in abundance; water may be obtained from streams which descend from a spring, a little farther inland. The village is distant two miles south of the anchorage, in a bay two or three miles in circumference, with a very narrow entrance. Rice, dried goats' flesh, horned cattle, wild boars, ducks, cocoa-nuts and fruits, black sugar and cocoa-nut oil, are to be obtained there very easily.

The current coin of the country, is the Spanish dollar, the Java and Sicca rupee, and the Chinese sapecas or caousins, a copper money with holes in it; 600 of which are equal to one Spanish dollar; 300 are worth one Sicca rupæ; and 250, one Java rupee. Their measures of weight are the the cati and the picle; 100 catis make one picle, or 133lbs. English, (125½ kilogrammes.) The measure of capacity is the gantang, twenty-five of which make one raga; and one raga of rice weighs nearly one picle.

The winds in the strait are as follow: in November, at the northern entrance, they vary from N.E. to N.W.; and S.W. to W.S.W. at the southern entrance. In December, January, February, and March, at the northern entrance they are from N.W. to S.W.; at the southern entrance they are from S. to S.W. and W., and sometimes W.N.W. In April and May, they are variable from N.W. to N.E., at the northern entrance; and S.W. to S.E. at the southern entrance. In June, July August, and September, they are N.E. and E. at the northern entrance; and S.E. at the southern entrance.

The flood tide is from the northward, and the ebb from the south, the ebb commencing two hours sooner on the Lombock shore than in the middle of the strait. The current in the channel generally follows the wind; and if it blows hard, a contrary tide is not felt.

It is for this reason that a vessel should always keep on the Lombock shore, in order to profit by the tide, which is felt there, and with which she may work against a foul wind, and anchor when the tide is against her. It is always more difficult to pass through to the southward than the northward, because the currents from the southward, accompanied by strong southerly winds, are formed by the vast body of water from the ocean rushing through the strait: whereas, those from the north are interrupted by the islands of the Archipelago, and impeded in their progress by obstacles from which those from the southward are entirely free.

BANK OFF THE NORTH COAST OF BRAZIL.—*Vessel struck.*

WE perceive by a notice in the "Annales Maritimes," that a French ship has grounded on a bank off the coast of Para, the position of which, according to the account given, we can only suppose to be in latitude $2^{\circ} 18'$ S., and longitude $43^{\circ} 7'$ W. of Greenwich, nearly where $4\frac{1}{2}$ fathoms are marked in the charts constructed from Rousin's survey. The following is the notice alluded to, which is an extract from a letter of Mr. Charles Leraistre, commander of the ship *Emily*, of Nantes.

When passing the Lançoes Grandes, and N. by E. of the most remarkable sand-hill, seven or eight miles from the land, in seven to nine fathoms, at half-past twelve P.M., the *Emily* got into shoal water, upon a bank of $2\frac{1}{2}$ fathoms, which appeared to be of small extent, around which I found seven fathoms. The vessel was going two knots at the time, and at noon was in $2^{\circ} 20' 2''$ south latitude.

The bank is situated within a very little of the track of the sloop, *La Bayadere*, and where five between seven and nine fathoms are found. It is probable that this sounding was obtained on the edge of the shoal water, for, I think that a vessel running four knots would cross it sufficiently rapidly, so as to get only one shoal sounding.

This bank is very dangerous, because it is situated in the route that a large vessel would take, and at a distance from the land that would remove all apprehension of danger. It was low water when I touched, or thereabouts, and from aloft only one green patch of trifling extent was to be seen resembling others on these shores.

Two of the shocks were rather violent but not sufficiently so, to produce great damage. The vessel made no water, nor do I consider the false keel was damaged. The editor of the "Annales Maritimes" adds the following note. "In giving the description of the coast of Brazil, and of the tracks which have been sounded for the benefit of navigation, the Brazil pilot has filled up an important gap; but the task is far from accomplished, and a complete knowledge of these

localities can only be acquired by time. It is, therefore, necessary that navigators should be constantly on their guard, when they are not certain of being exactly in the track of the Bayadere. Hitherto, no error has been found in these tracks; but if the limits she has prescribed are exceeded, the means of safety she has taken only should be trusted:—watch and sound!”

This is sufficient caution to all masters of vessels, and we shall be thankful to any of our readers who will give us a confirmation of the above, and the position of the most remarkable sand-hill alluded to of the Lançoes Grandes.

THE RIVER PLATE.—*Observations on the anchorage off Buenos Ayres. By Mr. R. Thompson, Master of H.M.S. Imogene.*

ON the 22nd of October, 1836, we left Monte Video for Buenos Ayres, with a pilot on board, (Mr. Allen.) At Monte Video, moorings are laid down for the pilot schooner, which lies with Point Indio, bearing S.W. by S. (compass,) ten or eleven miles; and she generally keeps a light at her mast-head. This is a good guide for vessels passing up, enabling them to shape a course between the Chico and Ortiz Banks; or in passing down the river, it enables them to shape a course clear of the east end of the Ortiz; or for clearing the English Bank. In fact, if the vessel can be made, she will always give a new departure, a most desirable object in this uncertain river. On leaving Monte Video, and bound to Buenos Ayres, if the pilot schooner be not seen where and when the pilot expects to see her, there cannot be a doubt of her having left her moorings, or that the vessel is not in a proper place. At the time we expected to see her, (which was midnight, and we burnt several blue lights as well as fired several guns in order to draw their attention) she was at Buenos Ayres.

Having missed the vessel, or being unable to find her, I would strongly recommend anchoring until daylight, and taking a departure from Point Indio, or the Embudo trees, all well described in the sailing directions of this place.

On the 23rd, we anchored off Buenos Ayres with the cathedral bearing S.W. by W. Point Guilmas, S. by E. $\frac{1}{4}$ E., about seven miles from the shore; and, on the 25th, shifted our berth nearer the shore two miles, and moored with best bower, E.S.E., small bower, W.N.W., fifty fathoms each; Buenos Ayres Mill, bearing S.W. $\frac{1}{2}$ S., this is a better anchorage than where we left, as there is generally four and sometimes six feet more water; and it is full two miles nearer the shore.

I cannot say much in favour of the anchorage here, as it is open to all points of the compass and a great distance from the shore; in

fact, the communication with the shore is at all times very uncertain, and we are frequently three days without sending a boat; even when they are sent there is a great uncertainty attending their return for a day or two. While we lay here, (eight weeks) we found the mooring-swivel of great use; it was well tried during the heavy gales we rode out. The prevailing winds were E. and N.E.. The tides are very irregular, but at times running as much as $3\frac{1}{2}$ miles an hour. We have had from nineteen to twenty-five feet water.

The following are the Port Charges, entrance at Buenos Ayres.

Foreign Vessels.	Dollars.*	National and English.	Dollars.	Rials.
Per Ton	1	Per Ton	"	6
Health Visit	12	Health Visit	6	"
Copy of Regulations of Port.	1	Copy of Regulations of Port.	1	"
Clearance.				
Per Ton	1	Per Ton	,	6
Health Visit	12	Health Visit	6	"
		Muster roll of ship's compy.	12	"

N.B.—Vessels which neither load or discharge, pay one-half the charges, besides the health visit, on arriving, and the health certificate on clearing. (Additon since August 1st, 1833.) Vessels of three masts pay ninety dollars, and those of two masts, fifty dollars pilotage, on entering and clearing from the inner roads, although they may not demand a pilot.

PILOT CHARGES.

For vessels drawing Burgos feet.	From C. S. Mary to Monte Ve o.	From Monte Video to Ensenada and Buenos Ayres.	From C. S. Mary and C. S. Antonio, to Buenos Ayres.
20	720	900	1140
19	600	780	1050
18	540	660	960
17	480	570	840
16	420	480	750
15	360	420	660
14	300	360	570
13	240	270	480
12	210	240	420
11	180	210	360
10	150	180	300

All vessels drawing more than ten feet, must take a pilot on clearing, and in case of refusing so to do, the captain will be obliged to pay

* The dollar here mentioned is paper, value about $7\frac{1}{2}$ d.

one half of the pilot charges, to which he is liable. He also will pay the same who on entrance, shall have refused to take a pilot, the same having been offered to him, with a list of pilot charges above stated.

The outer and inner roads are, in fact, open roadsteads, neither of them possessing good anchorage. A strong wind from E. or S.E., blowing almost direct on land, is dangerous to those in the inner roads, and they frequently drive.

It is said that the winter season is much better for shipping than the summer, as in the latter the winds are more from the eastward, Good anchors and cables are very necessary in the River Plate; chain cables particularly.

In addition to the difficulty of large vessels getting up the river, an adequate freight cannot be procured for them; but vessels of 150 to 200 tons are the most likely to get employed.

Vessels discharge and take in their cargoes by means of lighters, called Balandras. Should there be the least swell upon the water these lighters cannot lie alongside. Boat-hire is dear: to the outer roads 25 shillings (English.)

The climate, considered generally, is decidedly good. The spring months of September, October, November, and those of autumn, April and May, are the most agreeable parts of the year. December and January are said to be the hottest months in the year. During the former we have had some days of oppressive heat, the thermometer ranging from 69° to 85° in the shade. When the heat is at the greatest, a pampero frequently follows, with its accompaniments of rain, thunder, and lightning. These winds from W. to S.W. blow with great violence; being off the land, they are not very dangerous to shipping; but the thunder and lightning by which they are accompanied is terrific. A north wind in summer is very unpleasant, the heated atmosphere relaxing both mind and body; added to this, ships are swarmed with musquitoes and numerous other insects.

The beach of Buenos Ayres well deserves its nickname of Wapping, being crowded with sailors of all nations, grog-shops, stores, &c. In no part of the world are masters of merchant vessels subject to such annoyance from the desertion of their crews. There are crimps here who conceal them in the town, or send them to the country, and afterwards exact their own price from those who are in want of sailors.

The necessaries of life are abundant, and reasonable in price. The beef is good, but much inferior to English. Vegetables are at all times dear: potatoes imported pay a duty of 50 per cent., and the growth of this invaluable vegetable is not in any way encouraged. I have known them sell at 8*d.* per lb. In summer, meat will not keep beyond a day. We have been obliged to throw overboard some hundred pounds of beef, slaughtered not more than twelve hours. The poultry is not of the best description. Fish is very inferior; but plenty

may be caught alongside. We had no opportunity of trying the seine.

Fuel is scarce at Buenos Ayres, as it is not a woody country. Coals are imported from England.

The exports consist of ox hides of all descriptions; horse hides, horse hair, wool, tallow, nutkia skins, horns, chinchilla skins, and salted beef, (the latter sent chiefly to the Havana and Brazils,) and a small quantity of silver in bars. Of late years the wool trade has greatly increased. The quantity of European goods annually imported is very great. The cargoes brought from Liverpool of manufactured goods of Manchester, Glasgow, &c., are of considerable value, often amounting to 100,000*l*.

The state of the tides sometimes causes great delay to vessels leaving the inner roads; days, and even a week, being lost at some periods.

Landing at Buenos Ayres is very bad; heavy boats cannot get near. Carts are used to embark and disembark, there seldom being water sufficient for boats to go close in, and they are at all times liable to serious damage from the pieces of rock, wrecks, &c., near the shore. The cartmen charge one dollar * each trip.

DIRECTIONS for Sailing from the Coast of Chili or Peru, to the South Sea Islands, Sandwich, Society, Marquesas, and Pitcairn, by MR. G. BIDDLECOMBE, Master of H. M. S. Actæon.

ON leaving the coast, run into the south-east trade wind, or in latitude 20° S. as soon as possible, where you will generally have strong easterly winds and fine weather; you may then stand to the westward in that latitude till you bring Pitcairn Island to bear about S.W., when you should steer for it, taking care not to get to the westward of the island, as the current runs strongly to the westward, owing to the prevailing easterly wind, except about December and January, when a northerly or N.W. gale sometimes sets in.

From Pitcairn Island you will be enabled to shape a course for the Marquesas, taking care then to the eastward as the S.E. or S.S.E. trade blows through the islands.

On leaving the Marquesas, cross the equator if possible to the eastward of 145° W. as you will then be enabled to steer for Owhyhee, or a degree to the eastward of it, should you fall in with the N.E. trade early, although you seldom meet it till you are in latitude 10° N. The variable winds are generally westerly, and the current runs with the wind, but if you get easterly variables you may expect to be set a long way to the westward as the currents run more strongly in that direction than any other. You should, therefore, cross the line well to the eastward, to insure your fetching to windward of

* Paper money equal to 7½*d*.

Owhyhee. In passing Owhyhee, do not go nearer than forty miles to it, as vessels often get becalmed for many days together under the land.

On leaving the Sandwich Islands, you should stand south till in the latitude of the southern part of Owhyhee, when you should haul your wind to cross the line if possible in the longitude of Tahiti, as the S.E. trade breaks you off when you first make it, and then you do not fetch it within several degrees. It is tedious to get to the eastward in the latitude of Tahiti, owing to the strong westerly current; therefore, you should lose no chance of preserving your easting.

After leaving the Society islands for Peru or Chili, you should stand to the southward into the latitude of 34° or 35° S. where you will in general find westerly winds which will take you to the coast.

A good passage may be made from Tahiti to Pitcairn, by running through the southern part of the dangerous Archipelago; but great care should be taken at night, there being so many dangers yet unknown, and not laid down on the charts.

LATITUDES AND LONGITUDES IN THE GULF AND RIVER ST. LAWRENCE—
By Capt. H. W. Bayfield, R.N.

[Concluded from page 150.]

GREEN ISLAND TO QUEBEC.

Names of Places.	Point where observed.	Latitude North.			Longitude W. of Greenwich.			Variation W. year observed.		Apparent time of high water.	Rise and fall at Springs and Neaps.	
		°	'	"	°	'	"	°	'		h. m.	feet.
Green Island*	Lighthouse	48	3	25	69	27	57			2	45	16 S.T. 9½ N.T.
Chicoutimy (Saguenay R.)	Trading Port.	48	26	13	71	7	44			4	11	12 S.T. 8 N.T.
Tadoussac, (Saguenay R. Entr.)	Store on Beach.	48	8	40	69	45	44	17	35	2	45	16 S.T. 9½ N.T.
Riviere du Loup	S.W. Pt. Entrance	47	51	5	69	36	32					17 S.T.
South Brandy Pot	S. Pt. of I.	47	52	36	69	43	30	17	15	3	0	10 N.T.
Crow I. Kamouraska, La Prairie Bay, (I. Aux Coudres)	East extreme. W. Point.	47	35	17	69	55	31			4	0	17 S.T. 12 N.T.
Stone Pillar, Crane Island	Summit, ¼ m. S.W. of Mc Pherson.	47	4	30	70	34	5	14	49	5	0	17 S.T. 13 N.T.
R. Dauphine†	I. Orleans, Ent. S.	46	58	12	70	53	37			5	40	17 S.T. 13 N.T.
Quebec‡	Obs. Bastion,	46	49	8	71	15	43	14	15	6	18	18 S.T. 13 N.T.

* Off Green Island the duration and strength of the tidal streams change much with the winds. Also, according to the moon's age; for in neap tides the stream of flood is weak and of short duration increasing in both respects towards the springs.

† Between the River Dauphine and Crane Island, the time of high water was observed at Cape Tormenti 5h. 30m., and at the S.W. extreme of Gross Isle, 5h. 32m.

‡ The duration of the streams of flood and ebb at Quebec, is influenced by strong winds; so also is the rise of the tide, but not the time of high water.

NOTE.—The N.E. corner of the sarcophagus of Wolf's monument is 216 feet; the top of the monument is 208 feet 9 inches, and the N.E. corner of the King's bastion of the citadel is 308 feet 10 inches, above high water of ordinary spring tides.

WATERLOGGED SHIPS AND BRITISH GRATITUDE.

THE sufferings of the crew of the waterlogged ship, *Caledonian*, returning from Quebec, with a cargo of timber; and the intrepidity of the mate of the Russian ship, *Dygden*, who, at the risk of his own life, succeeded in saving the survivors of the crew, have been lately brought before the public. Poor fellows, after being on the wreck thirteen days, sustaining life, by feeding on the dead bodies of their comrades, they were rescued from their dreadful situation by the gallant Russian, and exertions have been made at various ports to raise subscriptions for him. These exertions have been crowned with success, as will be seen by a reference to the proceedings of the meeting on board the *Floating Chapel*, at Bristol, on which occasion, he received the acknowledgments of the public bodies, with various presents. At the same time, the master and crew of the Russian ship were not forgotten for the humanity they displayed towards the sufferers; while the sufferers themselves, received proof of the liberality of their countrymen, to the amount of upwards of 80*l.* for their relief.

It will be seen by the copy of letters addressed to an officer in London, from the Treasurer of the Fund, Stephen Prust, Esq., of Bristol, (which we annex) that it has been resolved, that the money raised with the view of rewarding the mate, shall be applied to the purpose of building a ship, of which he is to have the command, to be named the "**BRITISH GRATITUDE.**" Thus, at once establishing the fact, that an appeal to Englishmen, either for rewarding merit, or relieving suffering, is not made in vain. This single act will live in the memory of thousands of Russians and Finlanders for ages to come, by whom it will be handed down to future generations; more particularly, as it is determined that the ship is to be built at Abo, the port to which the *Dygden* belongs, and of which, the mate is a native.

It appears, that the *Caledonian*, having sailed from Quebec, for Greenock, was overtaken by a gale; during the continuance of which, she sprung a leak, and the crew, unable by their exertions, to keep her free, she became waterlogged. When the Russian ship fell in with her, the crew had been thirteen days in that situation; during which period, six out of twelve, of which they consisted, when she sailed, had perished; the remainder, as may be supposed, were completely exhausted; and, but for the timely assistance rendered by the officers and crew of the Russian ship, could not have survived more than a few hours longer, and that only by satisfying the cravings of thirst with the blood of the cabin-boy, whose lot it was to be the next victim! The manner in which this assistance was given, was well described by Lieutenant Claxton, R.N., at the meeting, on the 5th January last, at Bristol, at which the mate was present by invitation. He said:—

“When the *Dygden* first saw the wreck, she bore down towards it

from to windward, passed close under the stern, and hove to, as it were, to consider in what way she could relieve the objects of distress that were seen half in and half out of the water. It was then found, as all seamen know would be the case, that their ship drifted twice as fast to leeward as the waterlogged object of their philanthropy; and that to gain anything like a position from which they could hope to be of the slightest service, it was necessary to get again to windward of her. To accomplish this, a reef was shaken out, and what sail she could bear was put upon the ship; she then stood away on the larboard tack a-head. Now, then, he must pause to ask them, what must have been the feelings of the wretched sufferers, whose feelings had been alternating between hope, doubt, and fear: to all appearance to them, at the very moment that hope was in the ascendant, the vessel abandoned them. Not so in reality, for as soon as the gallant captain, who had determined to risk his own life rather than not make an attempt at rescuing theirs, had made his dispositions, he wore his ship, and passed the wreck on the starboard tack, to windward, with his boat in tow, and that gallant spirit, the mate, at the helm. The Dygden, passing under the stern of the wreck, put off her boat with the intention to board her under the lee; for to have attempted such a thing to windward appeared courting destruction; but either by the jerk of the tow-rope, or the heave of the sea, the boat broke her sheer, and shot to windward of the wreck. Here the mate describes himself as expecting that the boat would be dashed by the breakers in an instant to atoms; but, by the blessing of Providence, she was thrown with her broadside against the main shrouds, and by the force of the wind she was there kept, riding and chafing up and down the rigging as either the vessel rolled or the sea lifted her. If she had gone but a little before the rigging, or a little abaft it, she must have been stove to pieces on the deck of the wreck, as the sea was making a clean breach over her. In this position the exhausted crew watched an opportunity to get from the forecabin to the side of the boat, where, unable to assist themselves, through the almost supernatural exertions of that gallant fellow they were half lifted and half rolled into the bottom of the boat. Here a new difficulty occurred, the Dygden had shot a-head and widened her space to leeward withal, and, awful to relate, the tow-rope was actually found to be under the bottom of the wreck—the wreck being between the boat and the ship. This was the moment when the master displayed that scientific skill, which was above all praise. By rapidly paying out the rope, and throwing his topsails aback, he got so far astern that the rope cleared itself of the wreck, but the danger was not over; for the sea so rushed into the cabin, the whole stern-frame being gone, and disembogued itself so furiously with the sending of the wreck, that if the wreck had not had some way through the water (the wind being on the quarter) regaining the ship would have been impossible. There was one other circum-

stance attending this transaction which would show in strong relief the conduct of the mate. When the boat was fairly launched on the water, one other gallant spirit of the crew jumped into her with him, but who would blame him, if on reflection, and upon contemplating the dangers that surrounded him, feeling the case utterly hopeless in his opinion, he took an opportunity to get back into the ship. Where can words of admiration sufficiently strong be found to pourtray the praise due to that man who, under such circumstances, determined to persevere in his humane endeavours. In the language of Finland, the word *Dygden* means virtue, and most ably had these men proved that they understood the meaning of the word."

On this occasion, a chronometer was presented to Captain Thornberg, the master of the Russian ship, in the following appropriate terms, by Lieutenant Kemball, R.N., who had previously instructed him in the use of it.

"May every meridian you pass, and which this instrument indicates, remind you that the hand of God is ever upholding you, and the eye of God is ever watching over you. May every succeeding port you arrive at prove to you that in every captain and individual you find a brother and a friend. And, finally, when your pulse shall cease to beat in unison with the lesser hand, may this instrument be handed down as an heir-loom to your family, and prove to them that though you cease to number months and weeks and days and hours, you have entered upon an eternity of bliss, where I hope one day to meet you. In the name of the Committee, and of this audience, I now present you, dear sir, with this chronometer, and long may you be spared to prove its usefulness in your future voyaging of life."

And the mayor, J. K. Haberfield, Esq., who presided at the meeting, thus expressed himself:—

"I feel highly gratified on being called upon to preside as Chief Magistrate of the city of Bristol, on the present occasion by my invaluable friends, Mr. Harley,* and Mr. Prust, for the purpose of testifying to you, Captain C. J. Thornberg, as master, and to you, Otto Reinhold Spoo, as mate of the Russian ship *Dygden*, the British gratitude which we all feel for your Russian bravery and humanity, and also to present to you the testimonials which have been awarded to you for your gallant and humane conduct, in rescuing, and afterwards sustaining, the captain and surviving crew of the brig *Caledonian*, from their perilous, shipwrecked, and starving condition, on the 9th of November last, and conveying them in safety to this port. Posterity will learn that you have performed an heroic act, in saving from a watery grave so many of your fellow men. Tell your countrymen, my friends, that in England, noble acts like yours are sure to meet with their due reward. Gratitude belongs to the British nation, and gratitude in particular is inherent in Bristol citizens—their hearts

and their pockets are ever open and ready to reward merit and good conduct, whenever the same may be justly due, to any one from any portion of the globe, Europe, Asia, Africa, or America. Tell your countrymen that in this land of freedom there is no distinction, and in noble acts like yours, gratitude is the people's motto; and be assured that that feeling is most deeply fixed and rooted in the hearts of those whose lives were preserved by your valour and intrepidity, and also by the friends of those who, unfortunately, before you could arrive to save them, perished on the wreck."

The numerous testimonials and proofs of gratitude which were presented on this occasion to the captain and mate of the Russian ship, are perhaps better recorded elsewhere than in these pages. It will be sufficient to state here, that the noble example of Bristol, was followed by several other ports. We must, however, record the letter of the captain of the Caledonian, who suffered so severely.

" St. Peter's Hospital, Bristol, 28rd January, 1838.

" Right Worshipful Sir,—Having learned that you are to preside at a meeting to-morrow, when the Captain and Mate of the Russian ship, Dygden, are to be rewarded for their disinterested humanity in rescuing me, and the survivors of my crew, from our perilous situation on board the Caledonian, at the imminent hazard of their own lives, I am encouraged by your kind disposition, being unfit to attend the meeting, thus to state for myself and my men, that those brave Russians, to whom we are indebted for our lives, shall ever have *our* prayers, with such mark of admiration as our country may bestow on them.

For the kindness and sympathy extended to us in Bristol, and the unexampled care and attention we have received from the doctors, chaplain, and all in this hospital, I, with a heart full of gratitude, also offer a sailor's prayer, ' God bless you all.'

" I have the honour to remain, Right Worshipful Sir,

" Yours, most respectfully,

" DAVID COCK, late Master of the Caledonian."

" The Right Worshipful J. K. Haberfield, Esq.,
Mayor of Bristol."

And the observations which follow, are so excellent and appropriate, and the occasion on which they were made so rare, that they must not be omitted.

S. Prust, Esq., then said—" Captain Thornberg, a very pleasing duty devolves on me of presenting you with a certificate of merit, the reward of your skill, prudence, and humanity, signed by the chief magistrate of this city, who honours us with his presence this day; by the president of the chamber of commerce, the master of the marine school, the chairman of the Seamen's Friend Society, and by all the consuls of the nations resident here. This document will ensure you a welcome in every port, and will doubtless prove invaluable to you in your progress through life; it is the willing testimony of grateful hearts for deserved merit. To render it extensively useful to you,

Edward James, Esq., the late Swedish consul, has translated it into Swedes; Mr. Fowler, the French consul, into French; Mr. Vildosola, the Spanish consul, into Spanish; and Mr. St. George D'Arcy Irvine, into Italian. Finland claims you and Mr. Spoofo for its sons; but henceforth you are citizens of the world. All nations are interested in the brave, the intrepid, the humane. Let your future conduct evidence a life devoted to the cause of benevolence to the whole family of man, and you will secure not only the approbation of men, but of your own consciences, and of your God. Cultivate the knowledge of the English language; it will open to you its stores of arts, sciences, literature, and theology. Acknowledge God in all your ways, and he will direct your paths through this wilderness world to mansions of eternal blessedness. Study daily the bibles which have been presented to you, they will make you wise unto salvation. Let brotherly love continue between you and Mr. Spoofo; you are calculated to aid and assist each other through life; there is no foreseeing to what honour and respectability you may attain; take large and liberal views; let nothing prevent your harmony and friendship; be true to each other, and look upward for a divine blessing on your exertions for each other's welfare. The prayers and the blessings of Britons attend you."

Similar cases of extreme suffering have within the last few years occurred to a most alarming extent. Not less than fifty ships became waterlogged during the month of November, 1835, and the sufferings of their crews baffled all description. Several during the same and following month in 1836; and, although there are not so many wrecks on record during the past year, it may fairly be asked, from whence all this destruction of lives and property arises? Is it, or is it not, practicable to construct and send ships to sea in a state sufficient to contend with the weather invariably met with at such a season of the year in those latitudes? If it be not, then they ought not to be sent out at so late a season. If it be, then why is such loss both of lives and property, annually to be found on record?

The Caledonian, as stated by the master of her, was in good condition when she left Quebec, and was stated to have had no deck load, and which is no doubt correct.

It is a lamentable fact, that the greater part of losses and sufferings as those of the Caledonian, are occasioned by the defective state and worn-out condition of the vessels employed in the North American timber trade, which are in many cases over-laden, half-manned, and having all the provisions, and water stowed upon deck. The few hands they have on board, are weakened from constant inebriety and excesses while in port; for, it is well known, that ships in this trade can seldom get a man on board until the day of sailing; and then with much difficulty, and too frequently in a drunken, insensible condition. No effectual assistance can be obtained from the civil authorities. The crews of ships desert, and take up their abodes in the lowest description of liquor shops, and lodging-houses, where the nightly

scenes of drunkenness, riot, and confusion, is disgraceful to a sea-port under the government of a nation like England. They abound with dissipation in all its frightful shapes, where murders and other crimes are committed with impunity in the quarrels which nightly take place among raftmen, labourers, and deserters from the ships, all in a state of wild excitement. How many of these, it may be asked, have assisted in the present disturbance in Canada, who, leaving the sea-ports after the close of the shipping season, go into the back settlements, ready to become willing instruments in the hands of those men who have raised the standard of revolt against their legitimate government? They would think as little of doing so as of joining in riots in the sea-ports. Such characters cannot fail, from their very habits, to accelerate the many melancholy losses of timber ships, and the excessive sufferings of the crews.

The crews of waterlogged ships, of all other wrecks at sea, suffer the most. It is oftener their fate, than the crews of any others vessels, to speak

————— "Of lots for flesh and blood,
And who should die, to be his fellow's food!"

driven to the same dreadful alternative as the survivors of the Caledonian, and perishing one after the other in a manner too shocking to dwell on. It is not to be denied, that ships are employed in the timber trade, when too old and crazy for any others, under the impression, that although they may fill with water, they will not sink. Proving there are men who have the hardihood to send such ships to sea after all the sufferings which have been undergone, arising from those causes,—causes which ought no longer to exist. Men, who are the authors of this suffering, if placed in the perilous situations which their cupidity occasions, would be the first to show fear, for it is a well-known principle, that those who evince less feeling for the sufferings of others, are, in times of danger, the greatest cowards. These men, although they have the temerity to send ships to sea plastered up with lime and mortar, and who flourish, and increase their wealth, regardless of the sufferings of others, would not venture as far as the Scilly Islands in them, much less across the Atlantic in the month of November, over-laden with timber from a port in North America.

While these men, grasping at every farthing which it is possible to obtain, place others in command who are incompetent to navigate a ship; and who, to meet their avaricious views, and thus gain the favour of their employers, would stow the salt junk in the fore-top, and water in the main, and turn the crew out of their comfortless berths below, to more comfortless ones on deck, dreaming of nothing but applause for loading a ship above her rough-tree-nails, and having filled up every space below, so that a rat could scarcely find an entrance, and taking nothing to account, but what will return a profit to their masters, they make themselves quite easy on the subject, and free their own property from all risk of loss by insurance.

The existing evils are deep rooted, and made up of a combination of causes ; which, until removed, the same effects will always follow. Many a bad system has been put down, when every other means have failed, by that powerful engine, the public press ; and so must this. Public attention has been now more particularly drawn to the sufferings of the crews of waterlogged ships by the proceedings at Bristol, and this, it is hoped, will lead to enquiry : when that enquiry takes place, it will be found that the principal causes of the extensive loss, both of lives and property, in the mercantile marine of this country, and more particularly in the timber trade, may be classed under the following heads :—

First. The cheap system of ship-building, introduced at some of the out-ports, and also in the North American colonial ports.

Second. The system pursued in purchasing worn-out ships, and sending them for cargoes of timber, without the slightest repair, or examination ; some of them from 300 to 400 tons, purchased for a few hundred pounds.

Third. Inattention to the stowage of timber cargoes, by which a great part of the weight is brought to bear on the ends of the ship, or the beam fastenings loosened.

Fourth. Ships whose frames are defective, carrying heavy deck-loads.

Fifth. No protection being afforded to the commanders of vessels against the impositions practised, which prevents them from paying attention to the general arrangements necessary to insure the safety of a ship previous to her proceeding to sea.

Sixth. The existing loose manner in which both officers and crews are at present placed, in reference to each other, occasioning the entire absence of either order or discipline, as are evidenced by the daily complaints at the Thames Police office in London, and other sea-ports, on this head.

Seventh. The half-manned way in which ships leave a port ; instead of a muster being enforced, and a certificate produced to show she is properly manned on the clearing papers being signed.

Eighth. The want of placing all officers in the merchant service on a more respectable footing, and holding them more responsible for the duties they engage to perform, classing them agreeably to their character and qualification on a register at the port to which they belong, and from which they should be warranted.

Ninth. A want of proper attention to the victualling and lodgings of the crews, and their general comfort while on a voyage, now left to the caprice of a single individual, and not established by law, *as in government ships !*

Tenth. The want of a fixed establishment in the colonial ports to insure qualified and respectable men to superintend the stowage of cargoes.

Eleventh. The construction, fastening, and other necessary considerations, without which, a ship should not be considered seaworthy.

A ship may be so constructed, as to bring a cargo of timber from America, across the Atlantic, at any season of the year; and, it is no less certain, that it is the very defective state, both of framing, planking, and fastenings, bad stowage of cargoes, &c., which occasion the numerous losses of ships, and the heart-rending sufferings that annually take place in ships employed in the North American timber trade. If ships are bought for, and employed in, this trade, after running off their first letter A 1, in others, to ensure their safety, it is necessary to re-fasten them throughout; to introduce a seven-inch plank outside the framing, to secure the lower beam fastenings through; to cut down the overhanging of the stern, and build it up solid, leaving only two hanging ports; and to appropriate a portion of the ship altogether clear of the cargo for the crew to lodge in, a measure too often entirely lost sight of, as also a secure place for a proportion of the provisions and water.

Great care is necessary in stowing a timber cargo, not to let any part of the weight rest on the ends of the ship, or on the beams, neither should the wedging under the beams be too heavy, as the beam fastenings are frequently started by that means, occasioning the *first commencement of leaking* at sea.

The whole weight of a timber cargo should be brought to bear as near as possible on the centre flooring of a ship, and the heaviest woods kept in a midships, and as low as possible; that is, if the cargo is to consist of hard woods and fir, the former should be stowed between the fore and after-hatchways, and kept in the centre; while the light woods should be stowed at the ends and in the wings, care being taken to keep every tier at least three to four inches short of the skin of the vessel, both forward, and abaft; resting the ends of the timber on the skin in those parts of the ship, particularly if it comes in the way of a butt-end, may prove fatal; as timber, when a ship is labouring heavily, *will work* fore and aft. Heavy logs have been known to have shifted their position considerably during a passage. The working of the stapling of deals or timber athwart, will always take place in heavy weather, but this is not of so much importance, provided it does not rest on the beams. If it does, it will in all probability break them, or loosen the fastenings. There is no cargo that requires so much attention in stowing (with the exception of iron and other dead weights) for the safety of a ship, as a timber cargo. Many ships, returning with mahogany cargoes, have become waterlogged, occasioned by the cargo being improperly stowed; and, in the North American trade, no regulations are established; in order to ensure cargoes being properly stowed for the safety of ship and crews. That such regulations may shortly be made, and the whole system of our mercantile marine looked into, is the sincere wish of

RODMOND.

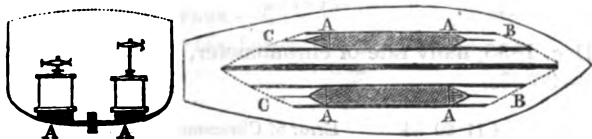
REFRIGERATING STEAM ENGINE CONDENSEMENT.

Bowlingbay, Glasgow, 17th February, 1838.

MR. EDITOR,—I observe in your number for this month, a drawing and description of a method for condensing by outward application, on board of steam vessels, called "Symington's plan for Refrigerating Steam Engine Condensation."

Without wishing in any way to detract from Mr. Symington's merits, I now beg to send you a drawing of a method for condensing on board of steam vessels, which I invented, and submitted to several engineers in this quarter, about four or five years ago, but which was never put into actual practice, although several experiments on it were made.

You will observe that it is different from Mr. Symington's method, inasmuch, that instead of taking the condensing pipes outside of the vessel, they are confined to the unoccupied space betwixt the keelsons, thereby rendering them perfectly safe from all external injury, which is not the case with Mr. Symington's plan; and, indeed, I cannot see how that gentleman can even put *his* method to effectual use, owing to their great liability to be injured, should the vessel take the ground; or otherwise come in contact with external substances.



Referring to the drawing, I will now give the following explanation of its mode of operation. The above figures are different sections of a steam vessel. A A are two long boxes, made of iron, placed between the keelsons, and passing below the engines, boilers, &c.; in these boxes are contained small copper tubes, connected with the eduction pipes, ranging fore and aft the vessel. B B, holes through the vessel's bows, into which, as the vessel moves, water will naturally rush, and make its exit at C C, holes through the runs of the vessel. The water in passing through the vessel, will effectually condense, or distil, the steam from the cylinder, and will be pumped back to the boilers, which will thus be kept free from salt and other incrustations.

Should any of your readers be induced to make trial of this method, or have any improvements to suggest, I hope they will make the same known through the medium of your journal, as I feel confident that the method of condensing by outward application, on board of steam vessels, will soon become universal.

I am, Sir, your most obedient servant,

GEORGE MILLS, Shipbuilder.

ON FINDING THE TIME AT SEA.

Leeds, 7th Feb., 1838.

MR. EDITOR,—I have reason to suppose that it is a prevailing prejudice amongst practical men,* that it is necessary to reduce all time observations to mean time, in order to procure a correct determination of the difference of longitude; and, in the opinion that such an erroneous impression exists, I am rather confirmed by the example given by Mr. Tonkin, at page 121, of your February number.

When an observation of apparent noon by chronometer, is obtained, the method of reducing the corresponding Greenwich mean time, (as found by chronometer,) to Greenwich apparent time, is much more theoretically correct, than the converse method of reducing apparent noon at ship to mean noon at ship as has been done by Mr. Tonkin.

To prove this, I shall, with your permission, repeat the example given by him at page 121; reducing the observation to apparent time, instead of to mean time, and I shall then briefly point out in what respect the former mode is more correct than the latter, leaving its superior conciseness to speak for itself.

EXAMPLE.

24th Dec. 1835, daily rate of chronometer, 2·53s. daily change of equation—30·03s.

Altitude 59 30 40	{ 11 50 34	Error of Chronometer	— 3 15 10
	{ 12 10 26	Rate for interval	— 0 0 0·35
	<hr/>		
Sum..... +	0 1 0	Chronometer on Greenwich	— 3 15 10·35
	<hr/>		
Mean..... +	0 0 30		
Comparison +	0 3 40	Greenwich, on Chronometer	+ 3 15 10·35
	<hr/>		
Appt. noon +	0 4 10	Appt. noon for Chronometer,	+ 0 4 10
			<hr/>
Greenwich mean time at ship's apparent noon			+ 3 19 20·35
Equation, at Greenwich mean noon... + 20·76s }			+ 0 0 16·81
Change in equation for interval	— 4 15s }		
			<hr/>
Greenwich apparent time at ship's apparent noon			+ 3 19 36·96
			<hr/>

This last being ship's west longitude in time.

[* Surely our correspondent is venturing on a libel on "practical men" who, if they know anything at all of the matter, must know that apparent time is obtained from the sun, and mean time from the chronometer; it is immaterial what time is used for the longitude as long as it is the same in kind, and this the equation applied to either in a different manner will effect.—ED. N. M.]

Now, it is evident, that in reducing Greenwich mean time, to Greenwich apparent time, no reference to longitude is at all necessary; but that, on the contrary, in reducing apparent noon at ship, to mean noon at ship, a longitude must be assumed for the purpose of calculating the change in equation; and, as this assumed longitude must, in the first place, be only an approximate one, (since the correct one is not known until the completion of the process,) therefore, although the difference may be inconsiderable in practice, yet, theoretically speaking, the former method is the more correct.

In the original example, before referred to, at page 121; the accumulated rate is put down (unavoidably) with the sign + (plus); although the rate is — (minus); this, of itself, causes some obscurity, although I scarcely know whether the fault be that of the method or of the arrangements; in the example given by me this apparent contradiction is avoided.

I have the honour to be, Sir,
Your obedient servant,
NAUTILUS.

**THE BLOSSOM'S VOYAGE.—CAPTAIN BEECHY'S REFUTATION OF
CAPTAIN DUPEPERRY'S REMARKS.**

Her Majesty's Surveying Vessel, African,
Beaumaris, January 15th, 1838.

DEAR SIR,—In the *Journal de la Marine* (No. 6, 1837) there is a letter from Captain Duperrey addressed to you, in which the propriety of identifying Prince William Henry Island, of Wallis, with L'Ostange, so named by Captain Duperrey, and Clermont de Tonnerre with the Island of Minerva seen by Mr. Bell, is somewhat hastily discussed, and in which my longitudes of various parts of the Pacific are questioned.

As you have honoured my geographical positions with a confidence which is very complimentary to me, I cannot do less than reply to that letter, so far at least, as to give you my reasons for classing these islands as I have done, and to offer for your information a few remarks upon my longitudes in general.

As regards the identity of the above-mentioned islands, Captain Duperrey begins his letter by declaring it wholly impossible for Wallis to have committed an error of fifteen miles in his latitude, and by maintaining that Prince William Henry Island still exists to the southward of L'Ostange, and will yet be found in the latitude assigned to it by its discoverer.

In paying this compliment to Wallis, in general so justly due to

that navigator, Captain Duperrey must surely be ignorant of the fact of my having examined the vicinity of this island in order to ascertain whether Wallis was mistaken in his latitude or not; and yet he might have concluded from what I published upon this subject in the narrative of my voyage, as well as from the nature of my instructions, that such an examination must have been made. I believe I need not state to you that this was done, and that I took the most effectual method of ascertaining that the islands I visited were really those discovered by Wallis, by first comparing my longitudes with those of Wallis at such of his discoveries, as from some peculiarity described in his voyages, admitted of no doubt of its identity.

Had I not done this, I might have fallen into the error of Bellinghausen who supposed Cumberland Island to have been Prince William Henry Island, from its true situation agreeing so nearly with the place assigned to the last mentioned island by Wallis.

Whitsunday and Queen Charlotte Islands, lying within sight of each other, are happily situated for the purpose above-mentioned, there being no other islands so circumstanced within several degrees of them. I there ascertained the amount of Wallis's error in longitude; and then ran down the parallels of his other discoveries and determined their true positions. I found them all correctly placed as to distance from each other, and, with the exception of Cumberland and Prince William Henry Islands, in latitude also, but their longitudes were all about forty miles too far east.

In searching for Prince William Henry Island, I ran down the parallel of $19^{\circ} 00'$ S. in which Wallis had placed it, for thirty miles from Cumberland Island, or until I had overrun Wallis's distance several miles, and at noon observed in $19^{\circ} 4'$ S. Having then nothing in sight from the mast-head, which commanded a view of ten miles more, I hauled to the northward, and immediately discovered an island which is the one in dispute.

This island agreed exactly as to distance from Queen Charlotte Island with that of Prince William Henry, but its latitude was $15'$ too far north, and thinking with Captain Duperrey, that this was too great an error for Wallis to have committed, I stood again to the southwest into $18^{\circ} 58'$ S. until I commanded a view of sixty miles from Cumberland Island, and had overrun Wallis's distance thirty miles. In short, until I had proved that had the island existed where Wallis placed it, either in latitude and longitude, or in distance from Queen Charlotte Island, I must have passed over it without seeing it.

In order to show you how nearly Wallis's distances agree with mine by observation, and to remove from your mind all doubt of the identity of these islands, I beg to direct your attention to the following tables.

Name of Island.	Latitude.		Long. W.		Difference.	Distances from Queen Charlotte Island.	According to	
	Wallis.	Beechey.	Wallis.	Beechey.			Wallis.	Beechey.
Queen Charlotte	19 18	19 17	138 04	138 42	38	Egmont	26	80
Egmont	19 20	19 23	138 30	139 12	42	Gloucester	120	119
Gloucester	19 11	19 08	140 04	140 41	37	Cumberland ...	154	147
Cumberland ...	19 18	19 12	140 36	141 09	33	Prince W. Henry.	182	181
Prince W. Henry.	19 00	18 14	141 06	141 43	37			

The Figures are given in round numbers.

I trust, Sir, this explanation will be satisfactory to you, and likewise to Captain Duperrey, who I hope will do me the justice to believe that I fully considered these facts, and carefully examined the vicinities of the islands as placed by Wallis, before I ventured to deprive M. Duperrey of what he imagined to be his own discovery.

In justice to Captain Wallis, who has placed Prince William Henry Island fifteen miles too far south, it should be known that he saw this island at daylight, at a distance "far to windward," and as he had no observation on that day, he of course deduced its position from his run by the log from the preceding noon, at which time he appears to have been six miles in error in his latitudes,* and this was not a direct run, as he lay to during the dark part of the night, and of course his reckoning was more liable to error.

With regard to the identity of Minerva Island and Clermont de Tonnerre, I must observe that, at the time I published my voyage, my authority for the situation of Minerva Island was contained in the foot notes (pages 287, 288) of your Hydrographical Memoir, copied, I believe, from the Asiatic Journal: in the last mentioned page that island is stated to be "45' west of Serle Island," and in the first to be "12° 44' west of Otaheite or 15 east of Serle Island."

It was evident from the tenor of this passage that, although there was some confusion between east and west, Mr. Bell had seen Serle Island on his route, or else why is his longitude in both cases reckoned from the meridian of that island, or why is that island mentioned at all? Upon the supposition, therefore, that it was seen, Minerva Island was of necessity identified with Clermont de Tonnerre, as being the only island either east or west of Serle Island, within the limits of the above mentioned distances, and the propriety of this arrangement derived additional strength from the circumstance of the first mentioned difference of meridians, forty-five minutes, agreeing so nearly with the actual distance of Clermont de Tonnerre from Serle Island.

But if we take the other difference of meridians, viz., 12° 44' east of Otaheite, which is most favourable to Captain Duperrey's case,

* See the latitude he gave to Cumberland Island on this day.

we shall find the imaginary injustice done to him is not so great ; for instance :—

Minerva Island, east of Otaheite	12	44	E.
Longitude of Otaheite (Pt. Venus)	149	27	W.
<hr style="width: 100%;"/>			
Longitude of Minerva Island	136	43	W.
Longitude of Serle Island	137	00	W.
<hr style="width: 100%;"/>			
Difference	17 miles.		
<hr style="width: 100%;"/>			
Longitude of Minerva Island	136	43	W.
Longitude of Clermont de Tonnere.....	136	30	W.
<hr style="width: 100%;"/>			
Difference	13 miles.		

So that had I taken this difference of meridians, Minerva Island would have been as near to Clermont de Tonnere as to Serle Island ; which of these data is to be preferred, I am even now at a loss to know, as I have no other means of ascertaining whether Mr. Bell saw the island in question or otherwise, upon which the whole question hinges, than by consulting what has been published on the subject ; the matter must, therefore, here rest, as far as I am concerned, and in truth, as Captain Duperrey justly remarked, it is not worth the trouble of further investigation.

I come next to the subject of my longitudes, which Captain Duperrey states to be in general 15' too far east. He here again does me an injustice, and if he examines the matter a little closer he will find that he is mistaken. If, for the sake of argument, we take the longitudes according to his own determinations and those of Bellinghausen and Kotzebue, whom he quotes as very respectable authorities, he will find that with one or two exceptions we agree as nearly as could be expected ; for instance :—

MOLLER ISLAND.

	°	'	"	
According to Captain Duperrey ..	140	42	07	North east extreme.
„ Bellinghausen.....	140	37	00	North extreme.
„ Kotzebue*	140	34	00	„ „
„ Beechey	140	35	18	North east extreme.

* Kotzebue's longitudes are, on an average, 3' east of Bellinghausen's :—

At Aratchejeff	1	10
At Palliser Island	4	5
At Greig's Island	3	10
<hr style="width: 100%;"/>		
Mean.....	2	48

SERLE ISLAND.

According to Captain Duperrey	137	02	45	West.	
" " Beechey.....	137	00	45	"	
Or if we take as a comparison, Bow Island, where my observatory was placed for a few days, we shall have the following result,—viz.,					
Duperrey N.E. point of Moller Island west of Callao	63	28	37		
" Longitude of Callao.....	77	11	30	W.	
" Longitude of the N.E. point of Moller....	140	40	07	W.	
North east point of Moller Island east of my obser- vatory, by triangulation		16	20		
<hr/>					
Longitude of my observatory at Bow Island ..	140	56	28	W.	
<hr/>					
Bellinghausen, North point of Moller Island	140	37	00	W.	
North point of Moller Island east of observatory....		15	56		
<hr/>					
Longitude of my observatory at Bow Island ..	140	52	56	W.	
<hr/>					
Beechey, Longitude of observatory by	}	140	51	45	W.
transit from identical observations		51	25		
at Greenwich.....		51	50		
<hr/>					
Longitude of my observatory	140	51	40		
<hr/>					
Longitude by ☉ (observations E. and W. on the spot	140	49	24	W.	
" ☉ (E. and W. at Byam Martin's Island referred	}	140	51	36	W.
My observatory at Bow Island was therefore according to Captain Duperrey		}	140	56	28	W.
" Captain Bellinghausen	140		52	56	W.
" Captain Beechey	140		51	40	W.
And as Captain Kotzebue agrees in his position with Captain Bellinghausen. Kotzebue ..	}	140	49	56	

This, sir, you will admit, is as near an agreement as could be expected. But if it were otherwise, I should not feel justified in altering my meridian, until I had seen observations that were more to be depended upon than those above mentioned.

All my longitudes eastward to Pitcairn Island, and westward to Otaheite, are in a great measure dependant upon the meridian of Bow Island.

From Pitcairn Island eastward, the longitudes are affected by the situation of Valparaiso, which I have recently ascertained to lie to the westward of the meridian I assigned it in 1825, of which I shall say a few words in advance.

Captain Duperrey in discussing my longitude of Serle Island, significantly observes, that "there are some navigators who do not take into account the set of the currents, and others who apply them the wrong way;" and at the conclusion of the sentence recommends me to revise my observations *as he has done*.

If Captain Duperrey imagines that I have assigned a position to any place, from such uncertain data as could possibly be affected by the set of a current, or the run of a ship, he is greatly mistaken. All my geographical positions are fixed by meridional observations on the spot, and by chronometrical observations morning and evening, tied together, and to the island off which they were made, by the triangulation which determined the figure of the island; and I have, in no one instance, deviated from this method, or allowed either the latitude or longitude of a place to depend upon a single set of observations.

Captain Duperrey still continuing to entertain the same erroneous impression, intimates that I guardedly maintained a silence upon a discrepancy in the distance, by log and by observation, which I must have observed in the run from Clermont de Tonnere, to Serle Island. I must here repeat, that I paid no attention to runs by the log, and I am quite satisfied, that if all navigators would do the same, and fix their discoveries by actual observations on the spot, they would agree better in their determinations. Between Clermont de Tonnere, and Serle Islands, I passed a whole night lying to, purposely to explore Serle Island the following morning, and therefore, if I had been inclined to go by the distance by log, I should not have been able to do so.

In determining the positions of the Pomotou Islands, I have taken as stasimetric points, if I may so say, Otaheite, Bow Island, Pitcairn Island, and Valparaiso; and have rated the chronometers between them. If they have gone amiss between these meridians, or if any of the observations are in fault, from the unavoidable errors inseparable from observations made with a sea horizon, I do not consider myself answerable for them, as it was impossible to land at many of the islands; but, as I before observed, I have as yet no reason to suppose that these errors amount to anything of consequence, and therefore I consider the longitude I have given as nearly correct, always excepting those which depend upon the meridian of Valparaiso.

I shall conclude this letter by giving you the positions of Valparaiso and Rio Janeiro, two important stations in South America, which I have recently determined by moon transit observations, and as the extremes of these do not exceed the limits of the Greenwich observations, the results are, I hope, very near the truth.

LONGITUDE OF FORT ST. ANTONIO, VALPARAISO.

Date. 1836.	Observations compared with	Longitude.					
		By corresponding observations.			By ζ AR. Alm. —Os. 42.*		
June		h.	m.	s.	h.	m.	s.
19	Cape of Good Hope.....	4	46	37.8	4	46	28.5
20	Cambridge	4	46	41	4	46	40.6
"	Edinburgh	4	46	44	"	"	"
21	Cape Good Hope.....	4	46	26	4	46	27.4
22	Nautical Almanac	"	"	"	4	46	39.6
23	Edinburgh	4	46	20	4	46	18.1
"	Paris	4	46	22	"	"	"
24	Cambridge	4	46	47	"	"	"
"	Cape Good Hope	4	46	46.6	4	46	42.1
"	Paris	4	46	41.9	"	"	"
25	Cambridge	4	46	42.8	4	46	43.2
"	Edinburgh	4	46	41.1	"	"	"
26	Cambridge	4	46	36.5	4	46	36.7
28	Cambridge	4	46	37.8	"	"	"
"	Edinburgh	4	46	43.6	4	46	42.8
"	Cape Good Hope	4	46	35.1	"	"	"
July 7	Nautical Almanac	"	"	"	4	46	43.6
8	Nautical "	"	"	"	4	46	47.4
9	Nautical "	"	"	"	4	46	39.3
	Mean	4	46	37.6	4	46	37.4
	Longitude	71° 39' 24"			71° 39' 21"		

Observatory 100 feet west of St. Antonio Fort.

* The computed ζ AR. in Nautical Almanac, was found to be 0.42 in excess, by Professor Henderson, from numerous observations.

LONGITUDE OF VILLEGANHON RIO DE JANEIRO, from observations
of transits made at ANHATOMIRIM.

Date. 1836.	Observatory, compared with	Longitude.					
		By corresponding observations.			By ζ AR. Alm. —Os. 42.		
March		h.	m.	s.	h.	m.	s.
2	Edinburgh	3	14	20.32	3	14	28.65
20	Naut. Alm.	"	"	"	3	14	21.2
21	Naut. Alm.	"	"	"	3	14	27.7
22	Edinburgh	3	14	08.9	3	14	07
24	Greenwich	3	14	10.8	3	14	20
"	Paris.....	3	14	08	"	"	"
25	Edinburgh	3	14	10.3	3	14	15.83
26	Greenwich	3	14	25.77	3	14	21.2
"	Edinburgh	3	14	20	"	"	"
"	Limerick	3	14	21	"	"	"
3	Edinburgh	3	14	26	3	14	38
"	Limerick	3	14	27	"	"	"
4	Naut. Alm.	"	"	"	3	14	30.7
7	Naut. Alm.	"	"	"	3	14	11.7
9	Naut. Alm.	"	"	"	3	14	26.4
10	Naut. Alm.	"	"	"	3	14	05
	Mean.....	3	14	17 7	3	14	21 26
	Reduction to Fort			2 1			2 1
	Long. Anhatomirim	3	14	15 6	3	14	19 1
	Fort Flag Staff	48	33	54	48	34	47
	Difference of Meridians*	5	24	40 5	5	24	40 5
	Long. Villeganhon	43	09	13 5	43	10	06 5

I shall now add the results of such of my observations made at Gloria, in 1825, as I have been able to obtain corresponding observations for, since the publication of my voyage.

* This difference of meridians of Anhatomirim and Villeganhon, is the mean of the observations by Baron Roussin, Captains Forster, King, Fitzroy, and Beechey.

LONGITUDE OF VILLEGANHON RIO DE JANEIRO, from observations of transits made at Gloria.

Date. 1825.	Observatory, compared with	Longitude West.		
		h.	m.	s.
July	Bushy Heath	2	52	22
27	Dublin	2	52	30 3
"	Bushy Heath	2	52	31 3
28	Paris	2	52	42
"	Kœnigsburgh	2	52	54
31	Bushy Heath	2	52	56
"	Mean.....	2	52	39 4
	Long. observatory	43	09	51
	Difference of Meridians ...			55
	Long. Villeganhon.....	43	08	56

The above mentioned dates are the only days on which I have been able to get identical observations at fixed observations.

The longitudes by five other transits, compared with the AR. in Con. de Tems, is 43° 5' 56" W.

NOTE.—All the above mentioned observations have been worked out by Mr. Baily's rigid formula.

RECAPITULATION.

Longitude, S. Antonio, (transits.....	71 39 24 W.
	h. m. s.
" By 60 lunars east Spica, 4 46 18 1	} 71 37 57 W.
" By 60 lunars west Sun, 4 46 45 5	
" By lunars E. & W. made in 1825 at	
Concepcion, and referred. (See	} 71 40 03 W.
my voyage).....	
Longitude, Villeganhon, by (transits, 1836.....	43 09 13 W.
" " " 1825.....	43 08 56 W.
" " (see my voyage) 1825.....	43 10 42 W.

Thus you will perceive, Sir, that my transit observations in 1835, (published in the appendix to my voyage) gave both Valparaiso and Rio Janeiro to the eastward of what now appears to be the truth. This has evidently arisen from the AR. in the ephemeris being in excess, for whenever I have been able to procure corresponding observations, the results have been very satisfactory.

With regard to the grave charge preferred against me by Captain Duperrey, of allowing my decision to be biased by the observations of my predecessors, I have only to say, that if such had been the case, I should not be in the least ashamed to acknowledge it, provided the authorities were respectable: but, I deny the charge *in toto*: the fact is, that I considered the method of moon culminations superior to that of lunar distances, and determined to give it the preference on all occasions. Had I made an exception in favour of Valparaiso or Concepcion, and the result had chanced to have been near that given by my predecessors, I might justly have been charged with leaning to their determination, but in the present instance I think I can only be accused of consistency.

I will not prolong my letter by any further remarks, but conclude by expressing my hope, that you are satisfied that the confidence you have reposed in my observations has not been misplaced; and by assuring Captain Duperrey, that I shall be ready to do justice to the merits of others by conceding any point that may be shown to me to be wrong, especially when the argument is conducted with candour and good feeling.

I am, dear Sir, yours faithfully,

F. W. BEECHY.

To Admiral Krusenstern, &c. &c. &c.

MERCHANT SEAMEN'S "DUES."

London, January, 1838.

MR. EDITOR,—The above is the term under which we are in the habit of deducting from the wages of every seaman under us, 1s. per month, and to which we contribute 2s. monthly ourselves. Your correspondent, H. Y. Z., in your number for this month, terms the guardians of this fund, "Merchant Seamen's Society;" and this appropriation of it, "charity." But I adhere to the old term, and insist, that the money thus taken forcibly from us, is strictly "due" to us again; and I have to thank H. Y. Z. for his ready answer to my enquiries concerning the extorted monthly subscription: though, at the same time am sorry to see, that he is obliged to give one so very unsatisfactory; stating that, as to its application, no knowledge whatever is suffered to transpire. I must, therefore, request, Mr. Editor, the further aid of your correspondents, your readers, and yourself, in obtaining for us, some direct account of how this enormous revenue is disposed of.

H. Y. Z. says, that the amount of receipts is about 44,000*l.* yearly! I had, however, supposed it much more; and that it amounted to 200,000*l.* Your correspondent speaks without hesitation or doubt; and, therefore, I am bound to believe him informed on the subject. I

would however ask him, whether his information refers to the receipt of any one year, since the passing of the last act on the subject—because, I know, that previous to that time, the collection of these “dues,” was effected in a very inefficient manner; but, that the act in question, regulated the payments in such a way as cannot well admit of much evasion. I am induced to ask this question; because, on reconsidering the matter, I cannot but think, even yet, that all the money stopped from seamen, on the score of “Merchant Seamen’s dues,” does not reach the “Society.” There is little doubt, I believe, that the numbers stated in my former letter, of seamen actually employed, is pretty near the truth, leaving, after an arbitrary allowance for apprentices, (say 20,000, which is, I have reason to think, too much,) 144,000 men, contributing 1*s.* per month. It is, however, I think, likely, that in this number, is included the 24,385 masters whose 1*s.* extra per month, I had therefore probably erroneously added, and which would reduce the estimate to 86,400*l.* yearly, and from which should be further deducted, a considerable sum for the time a seaman is actually employed, but does not contribute; the collection being made from the articles, which are often only signed upon a ship’s departure, though the men may have been employed a month or more, in fitting out and loading. On this account I will further reduce the estimate, and say, that 70,000*l.* ought to be collected yearly! However, for the present, let us take for granted that the sum stated is the actual amount received.—What becomes of it?

Its collection is, I believe effected, at the least possible charge, it being obliged to be paid, to some officers at the Custom-house, before a ship can enter out—query? Is its distribution effected as cheaply? I contend, that we have an actual right, to demand an account of the application of this money. I will not consent to look upon its appropriation, in the light of “charity”—it is belonging, to the “Seamen of Britain,” who have all their lives been subscribing to it, as to a benefit society, to provide them an annuity when worn out, disabled, and unfit for further duty. Before the passing of the act of parliament referred to, one half of this monthly “shilling” was appropriated to Greenwich Hospital, which was a shameful robbery upon the merchant sailor; rectified, I believe, through the exertions of Mr. Lyall, then a member for the city of London. It is much to be regretted, that he did not remain in parliament: we sadly want the aid of a “Joseph Hume,” to force some account here; as well as from that overgrown, overpaid, and “non-accountable” establishment,—the “Trinity House,” to which, although masters and seamen are not called upon for direct contributions; their employers are, and to such an extent, as cripples their means of providing for their worn-out seamen. I include the Trinity House, in this call for enquiry into funds belonging properly to seamen; because, it does in fact uphold its claim to its enormous revenue; partly, upon the plea of providing

for aged and worn-out masters, &c. I am not one, who would aid in the putting down such a venerable establishment—far from it: I would have it upheld, in all its dignity and privileges; if it were only to be looked up to, by commanders of ships, as an honour to their profession; a source of refuge to its unfortunate and destitute members; and the highest object of ambition to its most able; but, in one word, I would have the elder brethren recollect, with more consideration, what they are there for; what they have themselves been; how many of their old messmates are worn out, and in want; and to apply promptly relief to them when required—and not hoard an immense surplus revenue, as I believe they are at this moment doing—lying useless to any one.

To revert to the Merchant Seamen's "dues;" it is very much to be wished, that some one conversant with the subject; some accountant or actuary of a life insurance company, for instance, would take the trouble of favouring us with what should be the result of a seaman's subscription to this fund; if any one will do so, I will give him a case. An old sailor has lately made an application in regular form, to both Trinity House and the managers of the Merchant Seamen's "dues," and is plainly told at both, that there is little chance of his obtaining any relief. I know all the particulars of this man's case; that he is as worthy an old sailor as ever went to sea; and one, in every respect, having a claim to relief, neither extravagance, misfortune, nor any event for which he need be ashamed, reduces him to poverty; he has been, in fact, a hard-working man all his life; mostly as mate, and latterly as master, in poor ships, where honestly he could not save money. He has fairly expended himself in doing his duty to his employers. I will state his services in round numbers, for the facility of any one who will oblige us, by calculating what his actual subscription would entitle him to in a benefit society; and what from the Merchant Seamen's dues, (as now paid;) looking at the much greater proportion of deaths, who from this fund he would naturally benefit. The man is sixty years old; went to sea at twenty; served five years' apprenticeship; was then mate, (observe, men before the mast, which should claim some attention from the "Elder Brethren") he has literally been always at sea since—always belonging to some ship; and with the exception of five years, during which he has served as master, been doing duty as a mate, and is now unfit for further service. I ask some one to take in hand this case; calculate what his contribution would entitle him to; and whatever that may be, I say it is clear he would have a right to it, from the Merchant Seamen's "dues," had they been for that length of time under the present regulations.

This calculation, however, it must be admitted, is only prospective, and does not apply to the case of a man, who as a mate has only contributed 6*d.* per month; and as a master, part of the five years nothing

at all, but 2s. per month since the passing of the act referred to. His claim, under the actual circumstances of his case, it would be very desirable to have also calculated; unless results founded upon such calculations can be realized, after men become old and unfit for service, it is clear that the fund to which they have been contributing so long, is mismanaged; and I repeat, that the corporation of the Trinity House, collects rates, the payment of which can only be tolerated, because it is taken for granted they do a great deal of good in providing refuge for such characters as I have described. £44,000 is a large sum, as annual receipts; and if properly managed, would go far, in my humble opinion, to relieve the whole of the disabled and worn-out seamen, aided by the Trinity House. The portion distributed to the old man, (and a British sailor does not soon give in—he goes to sea to the last) who reaches sixty; looking at the enormous number of deaths of contributors who receive nothing, must, under good management, clearly render a very important item in the provision of a destitute man; let us therefore hope, that the members returned to the House of Commons, and who are supposed more particularly to represent our interests, will insist upon enquiry being vigorously instituted, into the application of these funds; to see which effected, I shall take the liberty of reminding them of it, if this hint be not attended to.

I am, Sir, your most obedient servant,

A MASTER OF A BRITISH MERCHANT SHIP.

REPORT ON THE RIVER DEE AND PORT OF CHESTER.—*By Sir John Rennie.*

[Concluded from page 130.]

HAVING, I trust, fully described the present defective state of the river Dee, and its navigation, and the causes of the same, I will now proceed to the third division of the subject, in order to ascertain how far the present evils are capable of being remedied, and whether it be possible to restore the trade of the city of Chester to that importance which it once held, and which its commanding situation in the midst of a populous and fertile district entitles it still to hold. The principal defects of the present navigation exist, as has already been remarked, between Chester and the town of Flint; for while vessels drawing fifteen feet can almost always reach the latter place at high water of neap tides, vessels drawing only twelve and thirteen feet, can scarcely reach Chester, even at spring tides, and then only with considerable care and attention, and at the risk of being neaped, and then delayed several weeks; in order, however, to enable them to come up to Chester at neap tides, it would be requisite that there should be an additional depth of from nine to ten feet.

There are two modes by which this might probably be effected,—either by lowering the bed of the upper part of the present river channel, so as to give a corresponding depth of water, namely thirteen feet at low water, which, together with the rise of tide, would always give sixteen feet; or else to prolong the channel direct to Flint, and to place a wear and lock of sufficient capacity at its lower end, by which means the present river would be converted into a canal. The first plan would be very expensive; all the slopes of the present banks would require to be re-formed and strengthened, in order to prevent them from being undermined; and after the necessary depth should have been once obtained, it would require considerable expense, and continual dredging to maintain it, which would be difficult and uncertain, and would occupy a long time before it could be completed, and even then the difficulties of the navigation below Flint, occasioned by the Bagillt Flats, would still have to be encountered. It may be here observed that this latter objection might be obviated by extending the new channel along the Welsh shore to the point of Ayr; this also might be accomplished at considerable cost and time; but as the natural set of the flood and ebb is upon the northern or Cheshire shore, and the mouth of the new channel being on the south shore or Welsh, there would be a continual conflict of currents at the entrance of the new channel, so that it would be difficult to enter or leave, and the tide upon the flood and ebb would be materially checked, and in the event of more land being embanked from the estuary, the lower, or sea channel, would be materially affected. Indeed, it would be extremely difficult to predict the consequences of such a measure, but which I have no doubt would be very injurious. A work of this kind, in order to prove beneficial, should be constructed on the northern, or Cheshire shore of the estuary; this, however, would render it necessary to leave the south shore entirely, and then all the establishments situated along the banks of the present river, would be abandoned, which would not probably be permitted.

The idea of converting the present tidal channel of the river into a canal, without making another channel for the tidal and fresh water, would be extremely unadvisable; for, without a tidal channel, it would be almost impracticable to provide for the drainage of the interior country; and the abstraction of so large a portion, or rather receptacle for tidal water, from the present river, without replacing it by an equivalent area, would certainly have a very prejudicial effect upon the estuary below the canal, and tend materially to reduce the depth in the various channels approaching to it. Under all these circumstances, I am clearly of opinion that it would neither be advisable to convert the present river channel into a canal, nor to attempt to increase its depth sufficiently so as to enable the desired class of vessels to approach Chester at neaps, or at high water, of all tides.

The next question to be considered is, what is the most advisable plan for obtaining this most important and desirable object: and here it may be observed, that having found that the plan of converting the present channel into a canal, or making it sufficiently deep, was not advisable, I then turned my attention towards the northern shore; and after maturely considering all the different circumstances, I am of opinion that a ship canal, commencing near Heswell, with communicating bridges, and terminating at Chester, with floating docks, near the Basin of the Ellesmere canal, will be found most eligible. The dimensions of such a canal will naturally depend on the size and class of vessels required to be transported; unless, however, it be constructed upon a sufficiently large scale, it would not be adequate to the object in view, namely, making Chester a port for large vessels. For this reason, therefore, I think it ought to have not less than eighteen or twenty feet water, so as to admit vessels of 600 to 700 tons, and to be wide enough to enable steam vessels to use their machinery without injury to the banks of the canal. The entrance lock should be near Heswell, with a tide basin, or outer harbour, in fifteen feet at low water of spring tides, which would serve to facilitate the entrance and departure of vessels from the locks. The canal should terminate in a basin of corresponding magnitude, and the same depth as the canal at Chester, and should be made to communicate with the present Ellesmere canal and the old river. It would be also highly desirable (and would probably take place as a natural consequence, in the event of the canal from Heswell being completed) to make a branch from the Ellesmere Canal, to join the Duke of Bridgewater's Canal near Preston Brook, which would complete the water communication with Manchester, and from thence all over the kingdom, and save the present inconvenient navigation of the Mersey, from Runcorn to Liverpool, by which great delay and expense are incurred. A small branch railway should be made from the proposed Chester and Crewe railway, which would at once complete the communication with Liverpool, Manchester, Birmingham and London, and the surrounding towns, which have either railways already in operation or in progress, so that by this means Chester would be enabled to derive the full advantage of all these additional improved means of conveyance. The total length of this ship canal would be about twelve miles; and the levels and line of the country are extremely favourable. The entrance lock would be founded in fine red clay, of which plenty may be obtained for puddling the canal, in the event of being found necessary. The probable estimate for completing it, including the entrance harbour at Dawpool, and basin at Chester, would amount to the sum of 560,000*l*. It would be easy to design works of less magnitude, either for a canal or the old river, if the above should be considered upon too great a scale, and for which estimates can be prepared, if desired; although, if the great undertaking can be accomplished, it would be *far prefer*

able. The above sum, although large, is moderate when compared with the great object to be obtained, and when it is considered that the railway from Chester to Birkenhead is, as I understand, estimated at 250,000*l.*, without any docks, which may probably be taken at 100,000*l.* more, and this for the object of taking the trade away from Chester, as a sea-port, and converting it into a mere inland station, it cannot for a moment be doubted but that the canal has decidedly the advantage; and it is the interest of the city of Chester and of the surrounding populous mineral and manufacturing country, to give it their most strenuous support. The railway, no doubt, as far as passengers are concerned, would be a great convenience; but for the transport of goods, including the cost of extra loading and unloading for export and import, would greatly exceed the cost by the ship canal. The advantage also over the present river navigation would be very considerable, for, instead of being $17\frac{1}{2}$ miles long, and only adapted for bringing up vessels drawing fourteen feet at springs, the distance would only be twelve miles, and there would be no difficulty at all times, after the first quarter flood to last quarter ebb, (or eight hours,) to bring up vessels drawing nineteen to twenty feet to Chester, within two hours after entering the lower lock. The present river channel should still, however, remain open for the navigation of small craft, and for the discharge of the drainage waters, and thus double advantage would be obtained. The supply of water to the canal might be obtained from the tide, or the waste lockage from the Ellesmere canal, or by a feeder from the Dee above Chester, which, in case it might at times, during dry seasons, interfere with the Dee Mills, would be made good by a steam engine. It is satisfactory to know, that the idea of forming a ship canal in this direction is not new. It was entertained by me in 1825, and, subsequently, by the late Mr. Chapman in the same year, who wrote an able report on the subject, with a view of extending it to Manchester, and making that important town a sea-port. Such an extensive undertaking, however, is unnecessary, as the country, for the most part, is already occupied by several excellent canals, such as the Duke of Bridgewater's, the Grand Trunk, the Mersey and Irwell, and others, and as the same object would be in a great measure obtained by merely extending the Duke's canal to Chester, as before-mentioned. Mr. Chapman, however, has completely proved the practicability of such an undertaking, and established the importance of making the Dee an additional outlet for the importation and exportation of the trade and manufactures of this part of the country. In carrying into effect the Chester ship canal, above recommended, it would be extremely desirable that the river Dee company and the promoters of the canal should be united together, having one common interest; and as the canal would give accommodation to the largest class of vessels, without interfering with the present river navigation, it would be unnecessary to expend more

money upon the present river channel. As a further confirmation of the superiority of the Dee, the late Messrs. Telford and Nimmo made a survey and report, in order to make a new entrance to the Mersey from Dawpool, which was very favourable. All further proceedings, however, in this undertaking were suspended; but the corporation of Liverpool purchased up all the intervening property.

With regard to the fourth. In order to ascertain how far such an undertaking would be likely to produce a profitable return for the capital required for its completion, it will be proper to institute a comparison between the two entrances of the Mersey and the Dee, as well as the population, manufactures, and trade of the surrounding districts. The Mersey is only accessible from seaward by two entrances; the outer one, called the Formby Channel, is about three miles from the Lancashire, and six and a half from the Cheshire, coasts; it is nearly half a mile wide, and has twelve feet at low water of springs, according to Captain Denham's chart. This channel, however, is surrounded on all sides by dangerous banks, and is only approachable in clear weather for large vessels at one quarter to half flood; from thence to the floating light distant about seven miles, the navigation is dangerous, and requires the greatest care and skill. The inner or rock channel is situated close to the Cheshire shore, and forms, as it were, a mere gut, and is almost dry at low water. This channel, although by no means so deep as the other, nevertheless, upon the whole, has been preferred, until lately, as being more certain and secure; although vessels are necessarily detained longer, as they cannot pass the shoals until the flood tide has considerably advanced. The course from this channel outwards to the floating light is equally difficult, and requires equal care as the former. The Mersey within these channels forms a fine capacious harbour, with plenty of water, although the great strength of the tide occasioned by the disproportionate contraction of its mouth to the extensive estuary within, combined with the immense number of vessels of all descriptions frequenting Liverpool, and continually in motion, renders it both difficult and dangerous to be in the channel, and consequently they get out of the tideway as soon as possible into the docks, which are upon a magnificent scale, provided with conveniences of every description ready to receive them.

The entrance to the Dee commences at Chester Bar or Flats, twenty-seven miles below Chester, and about twelve miles to the westward of the Black Rock Lighthouse, or entrance to the Mersey. The south channel across the bar is a mile wide, and has twelve feet at low water of spring tides; the northern entrance commences at Hilbre Gap? but between these two entrances and Dawpool, there is another bar, with only six feet at low water of spring tides, but as, when vessels have passed the lower bar and have reached the entrance to Dawpool, they can be afloat at all times and ride in security, this

inner bar, although to a certain extent inconvenient, is not of so much importance. The outer bar of the Dee is certainly much safer to approach than that of the Mersey; and when once vessels outward bound have passed it, they are clear of all sands, and can continue their voyage without danger or difficulty. Vessels coming from, or proceeding northward, have nearly similar advantages by Hilbre Gap; so that, as regards depth of water and facilities of approaching and departing, the river Dee certainly possesses equal (if not superior) advantages to the Mersey.

With regard to the maintenance and stability of the channels in their present state, I see no reason to anticipate any material alteration: for although they may vary a little, more or less, according to the prevalence of particular winds and freshes, nevertheless, the same means of preservation will continue; and as I understand they are better now than lately, it is by no means improbable but that by judicious measures they may be improved.

I now come to the last important consideration, namely, the probable return for the capital proposed to be expended in completing the works above recommended. This no doubt embraces a great variety of local points, which you are better enabled to form an opinion upon than I can possibly be; nevertheless, there can be no difficulty in coming to some general conclusions, leaving the remainder to be supplied by yourselves. Assuming Chester as a central point, it is sixteen miles nearer to London than Liverpool, and taking a radius of thirty-four miles, it will be seen that it includes Manchester and Warrington, and which are within two or three miles as near to it as Liverpool, whilst Macclesfield, Congleton, the Potteries, Northwich, Middlewich, Nantwich, Tarporley, and a number of lesser towns, are considerably nearer. The whole of the extensive mining and manufacturing districts of North Wales are in the immediate vicinity of Chester; but, from the force of circumstances, such as the superior enterprise and artificial conveniences of Liverpool, they are necessarily compelled to adopt that port instead of Chester, which is their natural outlet, and submit to all the extra expense and delay of transporting their exports and imports thither, occasioned by the additional distance. And, consequently, in this emporium of the trade of the north, all the communications by way of railways, canals, &c., have concentrated thither, leaving Chester almost wholly abandoned, although its natural advantages as a port, combined with the above improvements, and proximity to a populous and manufacturing district, would render it in many respects equal, if not superior. If, therefore, the same spirit of enterprise was exhibited in promoting accommodation for trade, there can be no reason to doubt but that it would not only again revive, but increase, and that Chester would participate in the advantages enjoyed by Liverpool.

Upon the whole, therefore, taking all these circumstances into con-

sideration, I am of opinion, that by the adoption of the measures above recommended, the trade would derive that accommodation which it requires, and for want of which it has abandoned Chester. It may, consequently, be reasonably inferred, that a profitable return would be derived from the capital expended in carrying them into effect, particularly with the examples of Liverpool, (where, I understand, only fifty years back, the income from the Docks scarcely exceeded 2,000*l.* per annum, and it is now above 200,000*l.*;) also the Gloucester and Berkeley canal, and other similar works. As soon as additional facilities for commerce shall have been provided at Chester, new establishments would arise, additional capital would be created, and Chester would regain its lost position in this part of the kingdom; whereas, if the opportunity be delayed much longer, new projects for other places will arise, and the great additional capital which will be expended on them, and in communicating with the Mersey, will create fresh and powerful interests, which it will be more difficult to overcome, and the obstacles against improving and rendering the Port of Chester what it is capable of being made, will be greatly increased.

I am, Gentlemen, your most obedient humble servant,

JOHN RENNIE.

TIMBER COMPARED WITH IRON, AS A MATERIAL FOR THE CONSTRUCTION OF STEAM VESSELS.

MR. EDITOR,—In the remarks on the comparative merits of timber and iron for the construction of steam boats in the February number of the *Nautical*, headed “Iron Steam Boats, Voyage of L’Egyp-tienne,” a preference has been given to iron as a material for the construction of such vessels, which it does not appear to deserve; and, knowing that your pages are devoted to the publication of good and useful information, without reference to the feelings or prejudices of any particular class of her Majesty’s subjects, I feel confident that you will give me a hearing on this subject, even should my remarks tend to controvert many of the positions which have been advanced.

In the observations alluded to, three positions in favour of iron vessels are adopted; all of which, I think, I shall be able to controvert. However, if I do not, to the best of my ability, I will establish their fallacy. These positions are, that iron steam vessels are stronger and faster than those of wood, and entirely free from all risk of fire.

It is now sixty years since iron has been used for the construction of vessels for carrying burthen, and about twenty-three years since they were first used as steam vessels. At Birmingham, the seat of the iron trade, they were tried thirty years ago for canal fly boats, and Mr. Manby, of the Horseley iron works, fitted iron steam boats in London, in the year 1825; so that there is no novelty in the construc-

tion of iron vessels for such purposes. And I would ask, if iron be so well adapted for the construction of vessels, how is it that at Birmingham, where iron is found in such abundance, and oak is not to be found, or scarcely so, and where upon the canals, lightness, speed, and small draught of water, are of such great importance, that they have not followed up the building of iron boats; but, on the contrary, at the present day use wood, even with the most expensive tractive power, viz., horses? It is, most assuredly, not that the people of Birmingham are not as well acquainted with the value of iron as those of Liverpool, but they know that a wooden fly boat, properly built, tows easier, is stronger, and much more serviceable than one of iron.

Now, as to the strength of iron steam vessels, as compared with those built of wood—I mean strength, as compared with weight—we shall find the advantage greatly in favour of wood; so much so, that even the construction of iron roofs, once so much the rage, is now nearly abandoned. In the experiments of Rennie, Smeaton, and Barlow, it will be found that dry fir, as compared with iron, weight for weight, is about nine times as strong in direct tension, seven times in direct thrust, and six times in the transverse or lateral strain; in other words, a bar of wood, say ten feet long, of the same weight as a bar of iron of the same length, and one inch square, will carry nine times the weight of the iron bar, will bear seven times the weight in direct thrust, and six times the transverse strain.

The strength of teak, oak, and some other hard woods, is not equal to fir, but still three or four times greater than iron; what then becomes of the announcement that iron boats are stronger than timber ones? I maintain, that a well-built vessel of wood, like some of the wooden ones now running on the Thames, will be found to be stronger at the same draught of water, than a vessel of iron, or any other metal. No doubt, Mr. Editor, but your readers, more particularly your naval ones, are well acquainted with those remarkable vessels, the wager boats, used on the Thames, above bridge; they are striking exemplifications of the foregoing. Many of them weigh no more than 80 lbs., and are well worthy the attention of every naval architect. Here, in fact, are the true principles of naval architecture exemplified, viz., the using the exact quantity of material, and no more than is necessary for the purpose required. I will challenge Mr. Laird, or any other iron steam boat builder, to produce a boat of the same dimensions and strength as one of these, that will not weigh nearly double the weight. Again, the elasticity of wood over iron is greatly in its favour, and its consequent lightness enables us to get a depth of material that cannot be obtained in iron. Thus, where plate iron of a quarter of an inch is used, we can have a thickness of timber of three inches; and, as bodies resist lateral thrust greatest in proportion to their depth, or, in other words, doubling the thickness quadruples the power of

resistance, the superiority of wood becomes manifest over iron, or other weighty material.

I think it quite pertinent to the subject to mention the class of steam vessels that have lately been constructed by Mr. Oliver Lang, jun., of her Majesty's Dock Yard, Woolwich. These vessels may be said to consist entirely of skin, or planking, with few timbers, and those of the same kind as boat-builders use.* These vessels, of which there are many on the Thames, far exceed all others for speed, lightness, and stability, combined. Upon passing up the pool in one of these, the "Fairy" was run foul of by a loaded cod smack, going seven knots, which struck her amidships, abaft the paddle-wheel. The shock was so great, as to throw the passengers down upon the deck. On recovering myself, I looked over the side to see the size of the hole the collision had made; when, to my great astonishment, and to that of the rest of the passengers on board, none was visible. The beams were a little started in the cabin, and the paint chipped away along the shelf-piece. The broadside of the vessel must have yielded at least six inches to the blow, and again sprung out to its former position. Had this vessel been of iron a quarter of an inch thick, instead of wood three inches, I am satisfied it would have doubled up her sides in such a way, as to have given her a permanent kink that would have required at least one dozen boiler-makers, with their forges, &c., as many days to rectify;—in the case of the "Fairy," little or no damage was done.

In one part of the observations upon the subject of iron steamers, it is stated, that "they are more buoyant, and, from their general compactness, draw less water, and are generally faster." As regards their buoyancy and draught of water, I think I have shown enough to

* The plan of building steamers introduced by Mr. O. Lang, with such great success, is as follows:—Upon the keel being laid, say for a vessel of 300 tons, one and a quarter inch diagonal oak plank, at an angle of 45°, is passed from one side under the keel up to the plankshare on the other side. At the fore and after-ends, from the rise of the floor, the planks cannot be passed under, and are rebated into the keel. The first planking is caulked and paid; then a second range of planking, one and a quarter inch thick, at an angle of 45°, is laid on the first, with patent felt between, crossing the direction of the angle, and this second planking is again caulked and paid. Then the third row, one and a quarter inch, is put on longitudinally, with felt between, like the ordinary planking of a vessel, and caulked and paid. A quarter of an inch through bolts are used, and clenched upon ruffs, such as boat-builders use. Bent timbers are then placed inside at every four feet apart, with small floor timbers for carrying the sleepers. Thus, the hull of a vessel is formed, which, for strength and lightness, cannot be rivalled. The following are the names of vessels built upon this plan, and now running on the Thames: "Ruby, Gem, Diamond, Duchess of Kent, Pearl, Topaz, Prince George, Fairy, Naiad, Nymph, and Ariel;" and it is a remarkable fact, that the oldest of these boats, the Diamond, after four years severe running, winter and summer, frequently making four passages to Gravesend and back in a day, has not broken or altered her sheer line three-eighths of an inch from the day she was launched.

prove to the mind of any unprejudiced person, that a properly built steam vessel, of timber, will have a decided advantage as regards strength, over one built of iron, of the same dimensions, and equal weight of material; in other words, the draught remaining the same.

Now, as regards speed, it will be necessary to look at what is at present doing with iron steam boats, compared with those of wood. In the spring of last year, it was publicly announced, that a celebrated iron vessel, built expressly for the General Steam Navigation Company, was about to be placed in the Ramsgate trade, to beat the vessels then running; this vessel is mentioned in the list of iron steamers in your article. It was stated by parties interested in her success, that her speed would be equal to 18 miles per hour!! This was the puff extraordinary. Her length according to the list, is 198 feet, and beam only 25 feet, with engines of 180 horses' power; and when I first heard of her proposed speed, I could not help the expressive term, humbug, presenting itself to my mind. It was, however, stated, that the actual speed contracted for, was only fifteen miles per hour, and then so many thousands per mile additional was to be paid to the contractors for the three miles above that speed. The consequence was, that we Londoners, who have not yet been able to get a boat to move above thirteen and a half miles in still water, were all on the *qui-vive* to see this wonder. Sober-minded men proposed to burn their wooden steam boats, and hasten to Liverpool for iron ones. I am not quite sure that plate-iron did not rise in consequence of the announcement. Well, Mr. Editor, we have waited patiently twelve months for this nonpareil, but she has not arrived, and the public are yet glad to travel in the slow London-built wooden vessels.

One thing struck me as a very curious fact, that as iron steam vessels are stated by their admirers to be more buoyant and faster than timber ones, that a vessel should be built of the prodigious length of 195 feet, (for we well know, that in a river-way, the longer the vessel, the faster she will go with a given power,) to compete with river boats not exceeding 160 feet, and that she should have engine power of 180 horses; while the Ramsgate boat, "Duchess of Kent," which she was intended to oppose, has power equal only to 130 horses. Surely, the best way to have proved the superiority of iron over wood, would have been to have built a vessel of the same size as one of our river craft, and have put twenty horses less power instead of fifty more: then every one would have been able to judge for himself.

An iron steam boat has recently been built and equipped in the port of London. This vessel has been tried after eight month's boasting of what she was to perform. Her intended speed was stated at fifteen miles per hour, but what has been the result? nothing! This vessel, built, I believe, to navigate the Rhone, of 160 feet length, 17 feet beam, and two high-pressure engines of 40 horses' power each, would only hold her way with the little Gravesend steamer "Topaz," of 130

feet long, the same beam and two 35 horse engines. The speed of the "Topaz," through still water, is about twelve and a half miles per hour. Mr. Editor, what then becomes of all this great boasting about the speed of iron steam boats?

While upon the subject of speed, I have only to add, that I will back, in the sum of 200 guineas, the following river steamers, to beat any vessels of their power in Great Britain, that can now be brought against them, whether built of iron, or any other material, viz., Ruby, Vesper, Diamond, Planet, Topaz, and Gem.

I now come to the last advantage claimed for iron steam ships, that of "absolute safety against fire," and I think I can show that even here they maintain little or no advantage. When a fire happens on board ship, where does it usually break out? certainly not on the keel, or the futtocks, or topsides; but, in the decks and beams, in the cabins, and among the cargo, the upper part of which fires the decks. These being once in a blaze, all hands must quit, then follow the masts and yards, next the bulwarks, and, lastly, the hull itself takes fire at the topsides, and burns gradually downwards. This is the case with 19-20ths of all the fires that happen on board ship, and against which there is no more security in an iron ship than in one built of timber; for it so happens that all the parts above enumerated, as those which take fire first, are built of wood in iron, the same as in wooden steam vessels, viz., deck-beams, cabin floors, fittings, doors, paddle-beams, and paddle-boxes, aye, and bulwarks too, are built of wood, hence the liability of conflagration is equally great.

It should be observed that, under any circumstances of change of temperature, from extreme heat to extreme cold, a vessel of wood has an immense advantage over one of iron, a timber-built vessel being much cooler* in summer, and warmer in winter, from the fact of wood being an excellent non-conductor, while iron is a most ready conductor of heat and cold.

Having, I trust, fairly and truly stated the case between iron and wood as materials for the construction of steam ships, my only object has been to set the matter in its true light, for I am neither a builder of the one nor the other sort of vessel, but I do not like to see a sudden mania take hold of the public mind for any particular object, without its merits being well tested and argued; and, I feel quite sure, that the owners of steam vessels in the port of London, need be under no apprehension that the class of vessels they possess will be driven out of the field by those made of iron.

I remain, Sir, your most obedient servant,

QUID.

[* The contrary to this was proved by comparing the Quorra and Alburkah in their late African voyage, and the reason stated by "Quid," accounts. Iron is a better conductor than wood, and being acted on by the water at a temperature lower than that of the air, communicates it to the interior of the vessel. Hence, an iron vessel

P.S. I find nothing in the certificates furnished by Mr. Laird, beyond the fact, that the vessels *can* be made to move; and the journal of the passage of *L'Egyptienne*, only goes to prove, that with some little management, the influence of the iron on the compass was so much reduced, that they were enabled to steer the vessel with tolerable certainty, and much better than her most sanguine admirers had reason to expect.

THE RIVER THAMES AND THE PORT OF LONDON.

Avon House, Melkham, February 9, 1838.

MR. EDITOR,—Your intelligent correspondent, in the January "*Nautical*," has adduced many arguments and facts to prove the state of wharfage in the river is unworthy of the metropolis of the British empire. And certainly, no one that has either read his paper, or contemplated the course of the Thames through that portion of its muddy channel which forms the subject of his animadversions, can think it is. Any competent spectator, who traces its banks on either side, must be sufficiently aware of its lamentable deficiency in point of accommodation for its immense traffic, for the multitudes which are either landing on, or leaving its shores. As your correspondent observes, the wharfs and jetties which are available for these purposes, from Lambeth to the Tower, are marvellously scanty; and, viewing the size and riches of the metropolis in which they are placed, altogether unworthy of its character. With the exception of the Custom House Quay, which certainly, for its extent, exhibits a noble platform—nothing worthy of the port of London occurs to relieve the eye from a monotonous assemblage of high blank walls, and common sewers. It is true that there are several noble establishments for the lading and unlading ships out of the immediate line of the river; and the East India, West India, and London Docks, form a commodious haven for our merchant vessels. But that does not at all alter the state of the present question, or supersede the use of convenient wharfage on the banks of the noble stream which rolls its ample tide through our metropolis. The crowded and inconvenient state of the river has frequently been the subject of complaint; crowded not with the ships of merchants, but with innumerable small craft, which certainly have no pretensions to occupy so prominent a station, excluding vessels of greater tonnage. What is the usual sight from our bridges? A wide and continuous belt of black barges extending, sometimes, one-fourth across the entire river; and at low water reposing on mud, whose unseemly surface, indeed, were it exposed, would present no very exhilarating prospect to the gazer. The consequence is, that the middle of the stream thus circumscribed, ill suffices to afford way to

is cooler than a wooden one; a fact which we find by Mr. Laird's book, was verified in the vessel mentioned.—ED. N. M.]

the numerous steamers that are plying up and down; and the host of wherries with which its surface is sometimes covered. This inconvenience would be obviously removed by banishing these dingy receptacles of fuel to less conspicuous stations; and, occasionally, as convenience might dictate, constructing a line of wharfrage with deep water at their margin, convenient for the unloading of vessels of no inconsiderable burden. This is practicable, to a certain extent, as ships of much greater tonnage than have ever yet been in the habit of unloading and receiving between bridges, might conveniently pass up and down. The banks of our metropolitan river would, moreover, so far as our naval commerce is concerned, present to the eye of the gazer, of whatever country he may be, some type of our vast maritime resources.

Now, it is manifestly the policy and the interest of trading capitalists to render every facility to the embarkation or debarkation of the freights of their ships—would it not incomparably add to the convenience of the British merchant, in this respect, if occasional wharfs were constructed between bridges, with noble piles of warehouses thrown back, allowing sufficient space for the traffic necessarily attendant upon such marts. The great thoroughfare lying alongside the river would thus be practicable and safe for foot passengers; and the dangerous blockades which are continually occurring in Thames street, to the impediment of public business, would, in a considerable degree, be removed.

The port of London has a noble Custom-house, but really the approaches to it, on every side, except that of the river, are absolutely disgraceful to the metropolis of Great Britain. Is this the case with other capitals of Europe, at all approximating to it in wealth and extent? Is there, indeed, a capital in Europe with so noble a river flowing through it, whose citizens would not turn it to higher account, both to ornament and utility. The banks of the Thames, instead of being a source of recreation as well as of commerce, as in other cities, are, as your correspondent observes, neither available for the one nor the other. During the whole length of Fleet street and the Strand, except at the opening to Waterloo bridge, the vicinity of this noble stream is almost entirely lost to the citizens. In any other European capital, proper openings, at intervals, would afford to the crowds who incessantly throng these busy marts, salutary and exhilarating glimpses of its waters, or its wharfs, with the gay and gallant vessels which might, under a proper arrangement, chequer its margin. Abundantly admitting the truth of your correspondent's remarks, as to the wretched state of ship accommodation between Westminster and London bridges, I quite coincide with him in opinion, that the citizens of our metropolis must shrink from a comparison with their continental neighbours, where, with so many natural advantages, they possess so few artificial ones.

London is superior, as a port, in point of trade, to what Amsterdam or Antwerp ever were; and yet, look at the quays and shipping accommodation in the latter cities, in comparison with the former! Rotterdam is a secondary city in Holland; and yet view her superiority in this respect to London, vaunted as the first port in the world. In a similar scale of magnitude stands Bordeaux, in France; and yet all the quays on the banks of the Thames shrink to insignificance before those of a port, the annual tonnage of whose shipping, bears no comparison to that of our river.

From my recollections of the port of Paris, (I was there soon after the peace of 1815,) I should say that your correspondent had by no means exaggerated its superior claim over those of London. The views from the Pont Neuf and Pont Royal, so far as the banks of the two rivers are concerned, are certainly not to be paralleled in London; and, although Englishmen sometimes regard the scene with a contemptuous toss of the head; yet, as your correspondent observes, as far as art is concerned for their improvement, "the Thames is the ditch, and the Seine the river." Londoners have much more reason to blush nature has done so much, and themselves so little. Look at the cities of Italy, renowned for their commerce before the discovery of the passage by the Cape. The magnificence of their public quays and accommodation for the merchant, was on a scale commensurate with their great trade. The writings of the most intelligent travellers confirm this. Dr. Moore, from Florence, thus writes:—"The quays, the buildings on each side, and the bridges, render that part of Florence by far the finest." "The same," adds this celebrated traveller, "is the case at Paris;" and it happens fortunately for those two cities, that those parts are almost constantly before the eye, on account of the necessity people are continually under, of passing and repassing those bridges,—whereas, in London, people may live whole seasons, and drive every day from one end of the town to the other, without ever seeing the Thames or the bridges, unless they go on purpose. Venice and Genoa, those splendid emporiums of commerce in the middle ages, were built and adorned with an especial reference to their great maritime importance. The latter stood proudly eminent as a port, while the local situation of the former city rendered it peculiarly eligible for traffic, since almost every street furnished at once a quay and a floating dock. London has, also, her peculiar advantages, were they but made the most of. And, although her foreign trade, in point of magnitude, and the tonnage of its shipping, bears at present no proportion to that of any other city of the empire, it may not be always so.

What strides have been made by Liverpool, within the last half century. Her docks, public quays, warehouses, and conveniences for the stowage of goods may, in a great degree, account for her rapid rise in wealth and consequence. In default of many of the advantages possessed by Liverpool, London, may, spite of her being the seat of government and all the metropolitan immunities consequent there-

upon, still sink in the scale of commercial importance. The inconveniences likewise, inconveniences of no common magnitude, so forcibly pointed out by your correspondent, in the want of proper quays for the embarkation and debarkation of the innumerable passengers who diurnally freight our steamers, calls aloud for the interference of the public authorities. The annoyance and danger arising from the deficiencies of wharf accommodation on the river Thames, in this particular alone, is really frightful.

In the port of Bristol, the quays within the city, and taking into consideration its inferior trade and the tonnage of its vessels, rank far higher in point of accommodation. Their principal wharf is nearly a mile in length, with every convenience for the landing and stowage of goods. If the shipping trade of Bristol has, for the last thirty years, declined, it has probably been partly owing to the high port and dock dues, demanded of the ship-owners, and partly to the circumstance of a monopoly of the foreign trade being in the hands of a few merchants, who are so rich that they care little about it. The declension of their trade is certainly not to be traced to the inconveniences of their port, which, considering the smallness of their river, is conspicuously the reverse.

Surveying the Thames from Lambeth to the Tower, does the port of London, notwithstanding its noble river and vast trade, present the wharf conveniences and accommodations which distinguish the port of Bristol, with a river whose confined channels at ebb tide scarcely suffices to bring up vessels of burden to her shores and marts of commerce? Why will not the citizens of London, and those who are interested in its prosperity, learn from their neighbours, both at home and abroad, to improve the facilities of her commerce, so far as the Thames navigation is concerned? They have just lost a noble Exchange. Is the public spirit and munificence which animated Sir Thomas Gresham, its founder, 250 years back, extant among our merchants of this age? London abounds in chartered societies of wealthy order. Could not some of the enormously rich city companies, instead of spending their money in eating and drinking, appropriate some of their surplus funds in improving the shores and avenues which lead to the Thames. The river, at present, exhibits between bridges, a most unseemly appearance—fringed with filthy barges, and skirted on its banks, for the most part, with old walls and nondescript edifices. It is the interest of Londoners to raise the accommodation of the river Thames to a scale of splendour and of beauty, competing with other large maritime cities of Europe; and, if the flux and reflux of the tide, bearing upon its waters commodities from all the nations of the earth, furnish employment for its thousands and tens of thousands,—surely, it is not too much to hope, that the almost total absence of public quays on the Thames will not be much longer a matter of disgraceful notoriety.

E. P.

THE BRITISH FLAG IN INDIA.

Madras, 11th Nov., 1837.

MR. EDITOR,—The following changes will no doubt interest your nautical readers visiting the East Indies.

Since the 1st June, 1837, the offices and establishments of Masters attendant at the ports mentioned below, have been abolished, and the British flag heretofore hoisted there, is no more shown to vessels passing by. It is doubtless of no consequence to the mariner, as there are other flag-staffs sufficient on the Coromandel and Malabar coasts where the flag is still hoisted on the occasion of a ship heaving in sight, viz. :—

Coromandel Coast : Calingpatam, Ganjam, Pulicat, Trincomalee, (on the Island of Ceylon,) Tranquebar, Pondicherry, Madras, Coringa, Masulipatam, Vizagapatam.

Malabar Coast : Sadras, Covelong, Cuddalore, Port Novo, Negapatam, Calicut, Mangalore, Tutacorin, Cochin, Tellicherry.

J. F. M.

EXTRACT FROM THE REGULATIONS OF THE PRUSSIAN SCHOOL OF NAVIGATION.

[We are enabled to lay the following information before our readers, through the polite attention of B. Hebel, Esq., his Prussian Majesty's Consul-General in London, to whose kindness we are also indebted for the article on the same subject in our last number.—Ed. N.M.]

SECTION I.—The object of the School of Navigation is the scientific education of a complete merchant-seaman, who must unite in himself all that is requisite, 1st, for a master shipbuilder ; 2nd, a steersman ; 3rd, a captain of a ship (shipmaster and captain.)

Sec. II.—The objects to be learnt are divided into three classes, which may be denominated, 1st, shipbuilding class ; 2nd, steersman class ; 3rd, sea-captain's class. The special course of each class would occupy one year, therefore the three classes three years.

Sec. III.—The first, or shipbuilding class, affords in itself a conclusive one, so that the future shipbuilder can learn everything therein, necessary for his appointment, without going through the other classes.

Sec. IV.—The second, or steersman's class, also consists of an entire one ; so that the intended steersman may, after completing, that is, after a period of two years, have attained the requisite knowledge.

Sec. V.—The intended sea-captain is obliged to go through the whole three years' course.

Sec. VI.—The scholars to be elected must have been confirmed, read fluently, and understand arithmetic with fractions.

Sec. VII.—In the shipbuilding class is taught, in the winter half-year, 1st, algebra; 2nd, geometry; 3rd, plain trigonometry; 5th, tracing designs of shipbuilding, and explaining the good and bad qualities of ships in regard to their sailing and burthen; 6th, the art of rigging or sailmaking; 7th, shipbuilding in general.—In the summer half-year, 1st, shipbuilding in detail, according to a complete model, which is to be provided, of a proper size; 2nd, trigonometry; 3rd, hydrostatics; 4th, rules by which to calculate the strength and durability of wood and ship's cordage; 5th, mechanics: the most essential principles are explained and elucidated by experiments, for which proper models are provided; 6th, shipbuilding wharfs and dock-yards are visited—the properties of different modes of shipbuilding the most advantageous is taught by inspection of ships of different nations—the more clear demonstration of the characters and varieties to be facilitated by models.

Sec. VIII.—In the steersman's class is taught, in the winter half-year, 1st, mathematical geography; 2nd, nautical astronomy and attending the observatory; 3rd, use of the compass; 4th, knowledge of charts; 5th, theory of the lever; 6th, calculation of equipoise of the various machines which are in daily use with seamen, as windlass, pulleys, &c. &c.; 7th, theoretical sciences as steersman.—In the summer half-year, 1st, practical steersman's science, and exercising the same in the roads; 2nd, theory of ship's evolution; 3rd, manœuvres. The objects of instruction in the winter half-year, Nos. 2, 3, 4, and 5, to be repeated and continued.

Sec. IX.—In the sea-captains' class will be taught, in the winter half-year, 1st, geography; 2nd, statistics; 3rd, hydrography; 4th, general ideas of physic; 5th, maritime law, particularly in reference to the Prussian state, according to the instructions of the general laws, 2nd part, 8 title; 6th, keeping of a journal, and drawing up reports and statements of every kind.—In the summer half-year, 1st, management of ship; 2nd, commanding the same, and exercise in the roads; 3rd, maritime customs; 4th, repetition and continuation of several studies at the last half-year, particularly those mentioned Nos. 4 and 6; 5th, astronomy, and attending the observatory throughout the year.

Sec. X.—Such studies as may have been omitted or misplaced in sections must in all the schools and lessons be rectified and regulated; but this principle must be maintained, that as far as possible, theory should be attended to in the winter, and practice in the summer; and that the first class, then again the first and second, and then all the three classes, form one complete whole.

[Note.—The value of the dollar referred to in the salaries of masters, &c. in p. 194, &c. is about three shillings sterling.]

PLAN OF A NAVIGABLE RAFT IN CASE OF SHIPWRECK.

HAVING got together (from the wreck or by other means) a quantity of stout planks, capable of supporting the requisite number of hands with provisions, &c., arrange them side by side in the form of an oblong square, the breadth being one-third of the length, then lay at equal distances across them, a sufficient number of others as beams or treadles, to stiffen and hold the raft together, pinning them down with nails, or, if these are inaccessible, with wooden pegs, which swelling in the water will hold firm enough. Now raise the sides and one end perpendicular, (two feet or more according to the size of the raft,) sloping up the other for a bow, like the swim of a barge. The sides being nailed on, should be stayed up with a few brackets inside, and rigging her with a mizen royal, or a couple of boat's sails, with an oar, or paddle shaped plank for helm, the raft is furnished. Half a dozen spare planks slung over the bulwarks by one end as leeboards, would make her hold an excellent wind. She would be as stiff as a church, and if constructed (as she should be) of large superficies in proportion to her burden, would, from her light draught and extent of floor, be both a fast and a good sea boat. If loaded below the thickness of her bottom, she should be caulked, if otherwise, not, as then any water she might ship escaping between the planks, she would be a life boat and could not be swamped. This plan was originally intended, only as a subsequent resource, for the purpose of reaching a civilized port when cast away on a barren or distant coast. But on reconsideration, I see no reason to hinder its construction on board, provided sufficient materials are handy. The planks laying flat on deck would not wash off, but in a very heavy sea. The work is of the simplest and roughest kind, and might be completed in a few hours where the danger is not immediate.

A YOUNGSTER.

[The reader will also find a proposal of Captain Cookesly, (an experienced officer of the Royal Navy,) for constructing a raft, in p. 73 of our 4th vol., (for 1835,) and in p. 76 of the same volume, an invaluable suggestion for preventing any boat from sinking in times of danger.---Ed. N.M.]

REMARKS ON CAPTAIN RAMSAY'S CAISSOON.

MR. EDITOR,—In your Nautical for this month, I find you intend to give some remarks by Mr. Symington on Captain Ramsay's caisson, made to stop the defects in the pipes under the bottom of H.M. steam vessel *Dee*.

I beg to acquaint you, that I had great pleasure in reading his description of its make and application, because it brought to my recollection that the same method had been used to repair the defects of the pipes in the bottom of H.M. steam vessel *Meteor*, under my

command at Malta, in 1832, and when I left Malta, in 1834, the caisson was still in the dock yard. Now I don't take up my pen to father this caisson myself, but I want to claim the original of this clever machine for a very worthy and old servant of the crown, Samuel Harvey, Esq. master shipwright of Malta Yard, well known to many of our admirals and captains. The commander in chief, Sir H. Hotham, and Sir Thomas Briggs, were much pleased when they inspected it in operation alongside the dock yard, against the Meteor's bottom, and the man at work inside of the machine perfectly at ease, as if the vessel had been in dock, except that it requires perfectly still water.

I am, Sir, your obedient servant,
W. H. SYMONS, Lieut. R.N.

Dean Street, Commercial Road, 18th Sept., 1837.

MR. EDITOR,—Having perused Commander Ramsay's ingenious method of forming a temporary caisson* for preventing the ingress of water through the apertures in the vessel side, required in steam navigation, when internal repairs are needed; or when a steamer is placed in such a situation as H.M. steam ship the *Dee* is described to have been; I beg leave to suggest the following plan which, I believe, will be found simple and efficient:—That a piece of matting of sufficient thickness be extended on a hoop of such size as to overlap the edges of the aperture wished to be closed, the hoop being fitted with an iron rod or handle, capable of being bent to any curve wanted.

The mat should be of the same kind as a rope yarn door mat, and its rough surface applied to the vessel's side.

A little reflection on this subject will show that, when the apparatus is properly applied, by the mere taking out the plug of the cock, the external pressure will cause the mat to adhere so closely to the edges of the orifice as completely to preclude the admission of water.

I have the honour to be, Sir,
Your most obedient humble servant,
WILLIAM SYMINGTON.

Naval Chronicle.

THE NELSON MEMORIAL.—At a late meeting at the Thatched House Tavern, in St. James's-street, the following resolution was moved by Sir Pulteney Malcolm, seconded by Sir Thomas Hardy, and carried unanimously.

“That this meeting, impressed with the deepest veneration for the memory of the late Lord Nelson, proposes that a general subscription be raised for the purpose of erecting a national monument, in a con-

spicuous part of the metropolis, in commemoration of his glorious achievements."

On the motion of Sir George Martin, seconded by Sir R. Otway, it was resolved that a committee be formed to carry the above resolution into effect.

This is an appeal of no ordinary kind, and it becomes our duty to point it out to our nautical readers as one which especially deserves their attention. But while we state this, we need scarcely add, that it is not the maritime community alone who are called on to assist in performing a duty to the memory of Nelson; it is the whole mass of the nation; every British subject who is expected, and who, we are quite sure, will be ready to contribute his share towards raising a monument worthy of this country and worthy of the name. There is no occasion now to allude to the success which has attended the sister service in raising a similar proof of respect and esteem for the man whose valour has secured the peace and added to the honour of his country; and we shall for the present merely state, that every navy agent and banking house in London, receives subscriptions for the Nelson Memorial.

PIER AT DEAL.—Situated near the north-east point of the county of Kent, at about seven miles from Dover, and the same distance from Sandwich, Deal offers natural advantages of the first importance to the public. Ships bound to and from London and foreign parts, usually stop at Deal. If outward bound they take in fresh provisions, and if coming in, they put letters and passengers ashore; in short, it offers facilities of the greatest advantage to the mercantile world, but its open and exposed situation has long been the subject of deep regret. The wind blowing hard from the north-east rolls in a surf upon the beach, which renders it almost impossible for boats to land—at the same time vessels in distress look in vain for shelter. The Downs, though a noted road for ships, and a rendezvous for our fleets, affords little protection in a southerly gale. If a vessel should part her cable, which is no uncommon occurrence, her best chance is to haul round for Margate Roads. Ramsgate may sometimes afford shelter, but the attempt to get in is often attended by danger. These facts prove the want of a pier at Deal, under which vessels may ride out the storms and gales which too often prevail on the Kentish coast. The consideration of the difficulties we have enumerated, has induced some of the most influential men of the present day, acting under the sanction of the Lords of the Admiralty, to project the erection of a pier which will afford safe landing at Deal for passengers.

With respect to the pier, it is intended to be constructed between the Adelaide Baths and the Royal Hotel, that point being most central, and likely to afford the utmost advantages to the whole population of Deal. We understand that a large capital has been subscribed, and this important work will soon commence under the direction of Mr. Rennie and other able engineers. Thousands of lives have been lost for want of such a landing-place, and every friend to humanity will hail with joy the prospect which now opens of the accomplishment of the desired object. The people of Deal, and the towns and villages along this part of the coast, are bold and active in affording assistance to vessels which may be stranded, or in saving goods and

people from wrecks, consequently this pier will prove of incalculable service in aid of their exertions.—*Morning Advertiser.*

PEMBREY.—A harbour light has just been erected at the entrance of Bury Port Harbour, Pembrey. The light is elevated about thirty feet above high water; it exhibits blue light towards the entrance of Bury River, and a red light towards Llanelly. The first opening of the red light will lead vessels direct into the harbour, leaving the light-house on the larboard.—*Carnarvon Herald.*

IMPROVEMENT OF WEXFORD HARBOUR.—Repeatedly as we have brought this question before our readers, they are only now beginning to view it in a proper light. Many who looked upon the thing as impracticable, are becoming daily more and more inclined to a contrary opinion, and several who are qualified to form a correct judgment upon it, entertain no doubt whatever as to its successful accomplishment. We believe that no valid objection has yet been started.

It is impossible to form any calculation of the immense advantages which must ensue from such an undertaking. What has been done in other places can only give us a faint conception of them. There were only three feet two inches at high water in the river Clyde, and the annual revenue was only 42*l.*; now it is sixteen feet deep at high water, and the yearly revenue amounts to 45,000*l.*! The present Sir John Rennie's father cut a new channel at Boston, in Lincolnshire, for the shipping, and the free discharge of the tidal water. This new course has proved of great advantage. It is twelve miles in length, and only available for one purpose; while Wexford harbour is only two and a half miles in length, and available for five important purposes, namely, for trade, a mail packet station, a safety harbour, a fishing station, capable of supporting four thousand fishermen, and for the reclamation of nine thousand acres of valuable land. If this great undertaking had been accomplished, three fine ships, with valuable cargoes, and twenty-six men, would have been saved from a watery grave. A Dublin publication observes, that a safety harbour on the S.W. of St. George's Channel would prevent the annual average loss of one thousand human beings, and 500,000*l.* worth of property. We believe the merchants here, and others, are a little opposed to Mr. M'Call's plan; if, however, they should be sufferers by it, surely the interest of a few individuals ought not for a moment to be put into competition with that of the community at large. Mr. M'Call courts the most critical examination of his plan. Two years ago Viscount Duncannon, chief commissioner of woods and works, recommended Mr. M'Call to survey and report on the river Suir, a distance of nineteen miles. The task having been accomplished, the plan for the improvement of the navigation of that fine river was submitted to the government engineer, who said, "that if Mr. M'Call had studied that river for a thousand years his plan could not have been improved; and if the same plan had been adopted by other corporate bodies in the improvement of their inland navigation, many thousands of pounds would have been saved, and the first improvement would have been a perfect and final accomplishment."

H.M.S. Wolf, left Madras for Calcutta, in August, her object being to reach that place in time to have the five Malay pirates she

had on board, brought before the criminal sessions then sitting. These pirates are the re-captured men, after the desperate attempt to escape in the Straits, which was made by the party of eleven, and successfully by the remaining six, who swam, a distance of about seven miles, to the shore, assisted by a strong tide, and made their way to the jungles.

MIDSHIPMEN.—An order has recently been issued by the Lords Commissioners of the Admiralty respecting the admission of midshipmen into the Royal navy, of which the following is the substance:—

“ They are in the first place to be examined by a surgeon, and rejected, if from impediment of speech, defect of vision, rupture, or any other physical inefficiency they are reported by him to be unfit for the service.

“ They will be expected to write English from dictation, and to be acquainted with the first four rules of arithmetic, reduction, and rule of three.

“ No person to be admitted under twelve years of age.

“ The examination to take place at the port where the ship is fitting out, to which they are appointed by order of the commander-in-chief, by the surgeon and schoolmaster of the flag-ship, such other competent person as the Admiral may select, or the captain or commander of the flag-ship.

“ I am, Sir, your most obedient humble servant,

(Signed)

“ JOHN BARROW.”

THE RANGER PACKET.—I have just come from H.M. Packet Ranger. What a beautiful proof she is of the perfection of the present method of ship-building pursued in the navy! She has been lying there during all this bad weather, with the sea breaking over her every high water, and with such violence that it has sent her bodily up, I should say twelve or fifteen feet, till she could go no further, the rocks on her lee-side forming a perfect wall, against which she is shored and choked up to the walls; and notwithstanding all this I cannot see an alteration in her sheer or form, in any way, nor do I believe there is a timber of her broken. Mr. Lang ought to come down to see the great perfection of his garboard strake, &c.; the destruction of the keel, dead wood, &c. in the case of the Pique was nothing to it. The heel of her stern-post is split to pieces, and the whole of her dead wood aft for perhaps ten feet twisted, and altogether out of a line with her keel, very considerably, and further forward a little. Such destruction made with keel and garboard strake as I should think was never before seen. Notwithstanding all this, I have no doubt, could she be got off the rocks, that she would swim, and could be taken round to Plymouth. A thousandth part of the injury thus described would have destroyed the best ship that ever was built before the introduction of solid bottoms and frames, and Mr. Lang's improvements added thereto. No other description of ship whatever but must have been destroyed the very tide she got on shore. The Ranger lays at this moment substantially, I really believe, unhurt; a specimen of which our naval architects might be proud, and a proof of the stupidity and downright insanity of the merchant shipbuilders of the present day, who will shut their eyes to the almost absolute perfection adopted in constructing our men of war.

I wish Mr. Ballingal could see her, it would repay him for the pains he has taken in that good cause,—the advocacy of solid bottoms in merchant ships. ARGO.

SLAVE DEALING.—Mr. Editor,—The author of an article on Negro Slavery in your last number, having referred to me by name, and (unconsciously I have no doubt) misquoted my words, I take the liberty of addressing a few lines to you on the subject, which I will thank you to insert in your next number.

First,—As to the misquotation, it is stated, (page 178) “Mr. Laird, in applying the term of ‘The only legitimate slave dealers’ to our officers, has dropped an expression,” &c. Perhaps the author of the article will do me the favour to inform me when and where I applied that term.

In the concluding chapter of my narrative, (2nd volume, page 368,) I stated, “It is a curious fact, that the officers and crews of British men of war, are the only persons who can at the present day, legally realize the living cargo of a slave vessel.”—“They are certainly confined to one market and purchaser—Sierra Leone, and the British Government.” If this is the passage meant, I merely stated a matter of fact, and have yet to learn that there are at present any other parties who do legally realize the living cargo of a slave vessel.

Secondly,—In page 179, the author says: “But the attempt which has been made in an irascible moment, both by Lord Brougham and his hitherto ‘uncontradicted’ authority, Mr. Laird, to impute dishonourable motives to the officers of the navy.” Again, I ask, when and where did I impute dishonourable motives to the officers of the navy?

I have condemned the system, lamented the position in which the navy is placed in carrying it out, recommended rewards for stopping the slave trade, to be substituted for rewards for capturing slaves,—but I have imputed nothing, insinuated nothing, against the officers of the navy. And the remark astonished me the more, as I had explicitly stated the contrary: (volume 2nd, page 365:) “With the present system there is neither credit, promotion, nor prize money” (though I am far from supposing the latter has any influence with officers of the British navy when employed in the cause of humanity) “to be got by thus effectually stopping the trade. Everything, unfortunately, is made to depend on the slaves being shipped and then captured,” &c.

Now, I impute nothing to the author but confusion of ideas, for a few lines before charging me with an “attempt to impute dishonourable motives” to naval officers, he states that I fully acquit them of all interested motives. Again, in p. 176, he states, “that method has been adopted which experience has shown to be most effective; that which Lord Brougham has described, not with the motive of obtaining more head-money, which Mr. Laird does not attribute to them.” And yet immediately after penning these lines, he makes the above charge against me.

I may also state, that I had no correspondence or communication with Lord Brougham on the subject before his speeches in the House of Lords; nor was I aware of his intention of speaking until I saw the report of his speech in the Times newspaper, that consequently the only information I gave his lordship, was that contained in the conclu-

ding chapter of my journal, which he had in common with the public, and for that information I consider myself responsible and am ready to prove its correctness.

Apologizing for taking up so much of your valuable space,
I am, your most obedient servant,

MACGREGOR LAIRD.

London, 78, Cornhill, 12th March, 1838.

NAUTICAL SURVEYS.—Mr. Editor,—The numerous shipwrecks which occur every year in St. George's Channel, owing principally to a want of the means of obtaining a proper knowledge of the soundings, velocity and direction of the rapid currents of its waters, calls imperiously upon the proper authorities to hasten the completion of the survey of that very important sea. Vast sums have been expended on expeditions towards the North Pole, surveys of Africa, Straits of Magellan, New Holland, &c., while this great avenue to our principal sea ports has been comparatively neglected; tidal observations and soundings are very much wanted from the Saltees on the Irish coast to Dublin, between the latter and the Isle of Man, thence to Holyhead and Smalls; in fact, the whole deep water soundings of the channel below the Isle of Man are unknown. The S.W. coast of Ireland has been well surveyed as far east as the Saltees, by Captain White; and his tidal observations are very important to the navigation. The Welsh coast as far as the Smalls, is also published; but north of this, although the coast of Wales is surveyed by Lieutenant Sheringham, little or none of the kind of information most valuable to the mariner during the dark stormy nights of the channel has been furnished him by Government. The survey of North Wales, by Lieut. Robinson, is a most valuable acquisition to the navigator, just published by Captain Carden. But why this delay? Why was it left for a private individual to publish in 1838, a survey made in 1834-35? Why is the survey of that dangerous part of the coast of Wales, between Holyhead and the Smalls, by Sheringham, not published? it seems most selfish to withhold such important information.

The only safe roadstead on the coast of Wales, between Holyhead and Milford, is Studwell road. Particular charts of this important place of shelter to the distressed mariner, with sailing directions, views, tidal observations, &c., ought now to be published. Every seaman feels deeply the importance of it; many lives and much property might be annually saved, by giving to the mariner facilities for acquainting himself with the harbours, tides, soundings, and roadsteads of this much frequented channel. One would suppose the frightful annual loss of 500 to 700 British ships, would awaken Government to the importance of the subject. It appears to me unfortunate that Colonel Colby, in his trigonometrical survey of Ireland, did not proceed from Dublin, south to Tuskar. In that case this dangerous part of the Irish coast and banks might have been surveyed long before this in connection with the triangulation. Many vessels are wrecked on the banks north of Tuskar, owing to a want of knowledge of the tides, soundings, &c. It is hoped that something will be speedily done to lessen the danger of navigating this coast in dark stormy nights and foggy weather. It is a little surprising that no chart or sailing directions, now published, will enable the mariner to

ascertain the vertical rise of tide at Tuska, about Wexford, or in the dangerous region of the Arklow or Blackwater Banks!!

NAUTILUS.

THE INDIAN NAVY.—We understand that Captain Robert Oliver has been appointed Captain Superintendent of the Indian Navy. This excellent and intelligent officer, served with considerable distinction during the war, and subsequently as first lieutenant in the flag-ships of Sir Robert Stopford, Sir George Eyre, and Sir Thomas Hardy, and was promoted to the rank of commander, by our late good King, when Lord High Admiral in 1828. On the construction of the first steam ships of war, Com. Oliver was entrusted with the responsible duty of superintending their armament; and his suggestions in this important branch of their equipment were carried into effect under his own control. It is well known how efficient the plan which he proposed has been found in experience, and we have reason to believe that not the slightest variation has been considered necessary.

In May, 1832, Commander Oliver commissioned the *Dee*, steam ship, and was actively employed with the allied squadron in the blockade of the Dutch coast during the winter of 1832-33; in September, 1833, he was transferred to the *Phoenix*, and in consequence of his admirable organization of these two war-steamers, he obtained the rank of Captain, in August, 1834. In August, 1836, Captain Oliver was employed on a committee arranging the establishments of the whole Government steam marine, including the packets, and his long devotion to this new branch of the public service, has now been rewarded, by the appointment to which we have referred above. A wide field will be opened for his exertion in the east, where it is intended to substitute a fleet of steamers, for the sailing ships of war known as the Bombay Marine.

HER MAJESTY'S SCHOONER PINCHER.—We are accustomed to record the loss of life and property to a lamentable extent in our mercantile marine, as our pages will amply testify; and it now becomes our painful duty to relate an accident by which a crew, consisting of thirty-three persons, with officers, have been hurried into eternity by the foundering of one of Her Majesty's vessels. It appears that the *Pincher* was in company with H.M. ship *Volage*, working to windward off the Owers for Portsmouth, on their way from Sheerness, in the evening of the 6th March. Between six and seven, a violent squall came on which took the *Volage* aback, she being on the larboard tack with her head to the northward; and in which the *Pincher*, being on the starboard tack under considerable sail, was capsized and foundered. The *Volage* arrived at Spithead the same evening, unable to find any remains of the unfortunate vessel and her crew. On the 12th, her position was discovered by the *Neptune*, a Cowes pilot-boat, by the jaws of the main boom sticking up above water, the jaw rope having broken, which had allowed it to come into an upright position. The vessel on being inspected by Mr. Abbinett with his diving apparatus, was found to be lying in fifteen fathoms water on her larboard side, with her head to the S.W., about five miles S.S.W. of the Owers light vessel. Measures have been adopted to raise her. The officers on board were Lieutenant T. Hope, (a) commander; Mr. T. H. Snozwell, clerk in charge; Mr. A. Anderson, assistant-surgeon;

Mr. W. Yeames, second master; and Mr. M. Kelly, clerk of the Grifin, it is also stated, was in her. Several bodies have been washed on shore near the Owers.

THE PAUMBAM PASS.—An English schooner yesterday (18th July) laden with iron, and going to Negapatam, passed through the channel with a tolerably fresh breeze, and the mainsail and jib set, in lieu of anchoring to the south, and warping through as is customary; she did it at our suggestion, as I was anxious to prove to them how easily they might do it. The pilots were much against it. She did not take out a single pound of her cargo, and she drew close upon seven feet of water, and passed through an hour and half before the tide had ceased flowing. A Dhoney, drawing six feet, immediately followed her example, both with perfect safety, and never touched. This is, I understand, the first instance of an English rigged vessel passing through the channel with her sails set—certainly none have done so since I have been here—the depth is therefore considerably above the seven feet. Up to this date from the 1st, 500 tons of stone have been removed from the main channel.—*Extract from a Letter from Lieut. Lake, R.N.*

Lieut.-Colonel Monteith, the chief engineer employed in widening and deepening the Paumbam Pass, says:—It has long been earnestly desired by the Government of Madras, as well as by the public at large, that the obstructions to the navigation, which extend across the Gulf of Manar, should be removed, or, at any rate, a clear passage opened for the coasting vessels both of Ceylon and India, to enable them to convey the produce of Malabar, Travancore, and some other most fertile districts, to Madras, the great point of export, without delay, risk, and expense to which they are at present exposed.

In consequence of the representations made to the Court of Directors by the Right Hon. Sir R. Lushington, then Governor of Madras, a survey of the generally used passage between the islands of Ramisseram and the peninsula of Ramnad was made by the joint efforts of the officers of the Royal Engineers from Ceylon, and Major Sim, with a party from Madras. During the year 1828, some experiments were made as to the practicability of improving this channel, and some of the most prominent rocks were removed. The passage was also rendered more direct and easy of access.

The work was, however, discontinued, and orders were received not to renew the attempt, strong doubts having been expressed of ultimate success. The officer's reports were published in 1833, and public attention was again directed to the subject, the experiments ordered to be renewed, and 5,000 rupees granted for this object, with the further assistance of stores from the arsenal, a party of sappers and miners, and fifty convicts; and I was directed to superintend the work, which is now in active progress, and promises to be successful, as far as the sum allowed can be expected to go; and it is now almost certain that a twelve-foot channel can, and will, be obtained at this point, the Gulf of Manar having only this depth for a considerable distance.

WEXFORD HARBOUR.—The contemplated improvement of our harbour deserves the appellation of *grand improvement*, whether we

consider it in the light of a magnificent object for the development of engineering talent, or in the great and beneficial results which must arise from its accomplishment. The gentry of our county are now giving it that consideration which its importance demands, which reflects much credit upon them, and which will, we expect, cause their names to be transmitted to posterity, by the success of the undertaking, as true philanthropists, as genuine friends of Ireland in general, and of their native county in particular.

What a gratifying sight it would be to see all the able-bodied yet half-starving labourers of our town and neighbourhood employed in the work! Yet this would be but a trifle, in comparison with the almost innumerable other public benefits that should necessarily follow from having a good safety harbour in Wexford. Our fisheries would prosper, and give employment to several hundreds that are now in a condition little short of absolute starvation; our imports would be much cheaper than at present; trade of every kind would flourish; capital would flow into the town; such in fact is its position, with regard to the coast of Britain, that if its harbour were once rendered safe in its access, no doubt can possibly be entertained but that Wexford would in a few years become one of the principal commercial towns in Ireland.

Another grand achievement may be anticipated as the result of this great undertaking. It is acknowledged on all hands that the present foreign packet station is a bad one, and by no means approved of by Government. On viewing the map of the British Isles, it will be at once perceived, that London, Fishguard, Wexford, and Valencia Island, are very nearly under the same parallel of latitude; and that consequently the distance from London to Valencia by Fishguard and Wexford is much shorter than from London to any other desirable point for a packet station, on the west of Ireland, by Holyhead and Dublin. Now, we believe it is a thing in the contemplation of Government for some time to establish a packet station somewhere on the west coast of Ireland; and surely we cannot for a moment harbour the thought, that they would give any preference to one line above another, except from the safety, the facility, and the quickness of transmission it would afford. With this object in view, an object, the attainment of which is by no means improbable, it is not possible that any person could be found who would not heartily concur in the plan for improving the harbour. If this were accomplished, no man can at present have a distinct idea of the field it would open for speculation and the investment of capital.—*Wexford Conservative*.

PORT NOVO, COROMANDEL.—Navigators frequenting the coast of Coromandel are aware that there exists at Port Nova, ten leagues south of Pondicherry, a smelting furnace,* the chimney of which is very lofty, and throws out from its summit a light, so brilliant as to be taken at times for a lighthouse.

They should be cautious of confounding the light with the one at Pondicherry, as by such a mistake they might touch the bank of Coleroon.

At the northern point of this bank, in four fathoms, the chimney bears W. 59° N.

* See further notice of this light (page 357) in our volume for 1837.

The best way of ascertaining whether they have reached Pondicherry as Port Novo, is, after they have shaped their course to stand in boldly to the shore, and keep the lead going. To the east and N.E. of the bank, the soundings diminish rapidly, in some places a fathom at a cast.

In the neighbourhood of Pondicherry, on the other hand, the soundings diminish gradually and uniformly. The bottom of the Coleroon bank is of sand, and good for anchorage, if the sea breeze is not too strong.

(Signed)

A. HENRY,

Lieutenant of the Harbour Ship.

Madras, September, 1837.

Port Novo River is situated about ninety-six nautical miles south of Madras, which former place is where enterprizing projectors have for some years established an iron foundry; the local advantages of the river to the iron company appears to be its proximity to the Salem district, where the masses of ore and abundance of firewood are procured. It is to be hoped that such a noble undertaking will eventually prosper, as it is important to the interests of India, and would yield incalculable benefit. A great quantity of iron-rail has already been cast at this place and sent to Madras, and subsequently laid down as a rail-road from the Red Hills (ten miles distant from Madras,) in a line three miles towards the Presidency.

Several large vessels belong to Port Novo, which trade annually with piece goods to the eastern coast, and return with elephants, pepper, spice, &c. Port Novo is well adapted for ship-building, and vessels of upwards of two hundred tons could be built; but the shallowness of the bar stands as a barrier (six feet at spring-tides,) and discourages such enterprise and speculation; and there can be no doubt that, if the sand on the bar could be *permanently* removed as it accumulates, the river would afford a very safe harbour (and convenient to Madras) for a ship to resort to, either for shelter during the the N.E. monsoon, or to repair.

Another great benefit which the inhabitants derive from the river (ten feet deep, and upwards in some places,) is the recreation they take in boat-sailing; they are sometimes joined by gentlemen of the Company's military and civil service, who visit Port Novo to inspect the iron works. The deep sandy roads are impracticable for conveyances to run on. The European workmen's cottages, situated on the banks of the river, in contrast with the land scenery, present a very pleasing and imposing prospect.

The lofty lights from the furnaces at night expanding in the clouds, are worthy of particular remark, proving, as they do, a useful beacon to the mariner (who knows of their existence, and in guiding his ship either into Pondicherry or Madras Roads) and warning him of his approach to the Coleroon Point (the only danger on that line of coast,) where Sir S. Hood, in H.M. ship Minden run upon in 1804.

It is further interesting to observe, that the greatest quantity of goods which are imported from Novo Point (brought down from the

Salem district), are floated down the river in baskets, lined with hides, and made water-tight.

On Sundays, the European inhabitants congregate at one or other of the houses belonging to the superintendents of the iron work establishment, to join in divine service.

ESTABLISHMENT OF A LIGHT-HOUSE AT PONDICHERRY.

Cost, 7000 francs building.

FROM the 1st of July, 1836, a fixed light of the third magnitude will be exhibited during the whole night on the summit of a tower recently constructed at Pondichery.

This light, placed at eighty-nine feet above the level of the sea, will be seen in clear weather from a ship's poop, from a distance of sixteen to seventeen nautical miles.

During the N.E. monsoon, that is to say, from the month of October to March, vessels arriving during the whole night in the roads of Pondicherry, should anchor in ten or twelve fathoms water, the light bearing by compass from W. by N. to W. N. W. This anchorage will be the most convenient for communication with the shore, and for weighing, during bad weather.

During the S.W. monsoon, the wind prevailing from S. E. on the coast, from the end of March to October, bad weather is not to be apprehended, and vessels can then anchor at night in seven or six fathoms, with the light bearing by compass from W. to W. by N.

Thus placed, the vessels will be during each season in the most favourable position for communication with the shore.

Pondicherry, the 10th March, 1836.

Approved,
(Signed) L. DALMAS.

(Signed) A. HOSTEIN,
Captain of the Port.

Published by order of the Marine Board,
C. B. GREENLAW, Secretary.

Fort William the 29th April, 1836.

Pondicherry lighthouse has been erected accordingly (though not generally known), and is of essential service to ships frequenting the coast, and a trifling charge is demanded from all persons who are desirous to go up and inspect the lighthouse, which is kept exceedingly clean, and reflects great credit on the French authorities. Pondicherry Town is remarkably compact and neat; many persons, from inland stations, resort there for a change, or to recruit health. It is situated sixty-nine nautical miles south of Madras. Cuddalore is thirteen miles further south along the sea coast, where there is a Bar river (six feet at spring tides,) and is accessible for native crafts of 100 tons burthen. Several Dhonies of this size belong to the port, and trade

to Madras, and other adjacent places, with local produce, &c. Cuddalore is one of the most salubrious and interesting stations, perhaps, under the Madras Presidency. About two hundred *European* pensioners reside there (beef, rice, poultry, and wearing apparel are cheap.) Several of these veterans have, from their perseverance and frugality, built delightful cottages, which are, owing to their advantageous position, being sought after by the officers of detachments sent periodically to Cuddalore.

The Tillah gaol at Cuddalore may not be unworthy of notice. It generally contains between three and four hundred prisoners; part of them are employed in weaving table linen, and coloured cloth, manufacturing paper, and cocoa-nut-oil; others are usefully employed in repairing roads and bridges;—and it is by the labour of these men that the roads in the Cuddalore district have been made safe and durable. The country adjacent is well irrigated from the tanks and rivulets, and generally appears green and refreshing.

CHRONOMETERS, MADRAS.—In pursuance of the direction of the Right Honourable the Governor in Council, the chronometers of captains and officers of Her Majesty's navy, or the Honourable Company's sea service, or of masters and officers of British merchant vessels frequenting this port, are received here every day (Sunday excepted) between the hours of eleven and two, in order to having their rates determined, free from all fees or charges of every description.

(Signed) T. G. TAYLOR.
HON. COM. ASTRONOMER.

Madras Observatory, 16th October, 1831.

N. B.—For further information, the time of evening gun-fire is published in the Madras Male Asylum Herald.

(Signed) T. G. TAYLOR.
HON. COM. ASTRONOMER.

In addition to this, the master-attendant very kindly sends a person every morning to the observatory, for the mean time of gun-fire on the preceding evening, which is affixed to the door of the war office, for the information of all whom it may concern, or even sent on board of ships, if circumstances require it.

Madras, July, 1837.

THE following circular of the Admiralty, dated March 16th, 1838, is well worthy the attention of mates in the merchant service:—

“ With reference to the circular letter of the 2nd instant, relative to the admission of an additional number of master's assistants into the Royal navy, I am commanded by my Lords Commissioners of the Admiralty, to acquaint you, that instead of the periods of time thereby required as a qualification of servitude, their lordships are pleased to direct, that the candidate shall have been at sea, either in her Majes-

ty's navy three complete years, or in the merchant service five years, (two of which in his apprenticeship, and three as mate or inferior mate,) or for combined periods of two years in the Royal navy, and two in the merchant service, or one year in the Royal navy and three in the merchant service; and all candidates, who shall be found qualified agreeably to the provisions of the before-mentioned circular, will be considered eligible to be appointed by their lordships as acting masters assistants.

(Signed) JOHN BARROW.

STEAM TO AMERICA.—We perceive that the long talked of project of communicating with America by steam boats, is at length to be carried into effect. It was supposed, that the *Great Western* would have been the first vessel to run to New York, but we find that the "Sirius," of 700 tons, and 320 horse power, commanded by Lieut. Roberts, R.N., is to leave the London Docks on the 28th March, and Cork, on the 2nd April, for New York.

STEAM BOAT ACCIDENTS.—An accident attended with the loss of five individuals has happened since our last to the "Victoria," a new steam vessel, destined to run between London and Hull. It appears that she was making an experimental trip down the river, with a party of visitors, when one of the boilers burst, producing terror and dismay, and occasioning the above loss of life, with considerable damage besides. The conduct of the captain deserves great praise, the first thing he did being to get his vessel into shoal water, so that in the event of her sinking, she might not assist in filling up the bed of the river and drowning her passengers.

STEAM-BOAT ACCIDENTS.—Mr. Editor,—The awful death of the five individuals, arising from the injuries they received by the bursting of the starboard boiler of the "Victoria," steam vessel, induces me to notice, that had her fire places been secured in the manner I suggested, for all steamers, and which appeared in the last number of your valuable journal, the lives of those persons would have been saved, and no confusion have taken place in the engine room by the endeavours to stop the engine &c.

Remaining, Sir, your obedient servant,

A LOOKER ON.

STEAM BOAT DOCKS AT GREENWICH.—A plan it appears, is abroad for constructing wet docks for the embarkation and landing of passengers and goods at Greenwich, or in its neighbourhood, with the view of assisting in the removal of those disasters so common in the upper and crowded part of the river. We wish the project every possible success, and hope the time for its accomplishment may not be far distant.

Law Proceedings.

THE PERTH (Steamer).—*Collision.*—The Perth, belonging to Dundee Company, 399 tons, 300 horse power, 32 men, from London to Dundee, came in collision with the collier brig Ariel, of South Shields, from Newcastle to London, off Orfordness, at seven in the evening of the 4th January, 1837; weather calm, hazy, and foggy. Expense of damage to Ariel 126*l.*; Perth received little or none. Question, Which vessel to be blamed as producing the collision? Contended, that it lay with the Perth, from going at too great a rate under circumstances of tide and weather; that

she took no measures to avoid or lessen the collision; that the Ariel, as soon as she heard the Perth to windward, put about, she being then by the wind on the starboard tack, and expected the steamer to pass to the eastward of her. Ariel hung in stays and crew hailed steamer to put her helm hard-a-port; not noticed; and was struck on starboard quarter by steamer's paddle-beam; steamer proceeded on without noticing collision. Replied for steamer, that all precautions were taken; a bell tolling; a look out kept, and a light shown; light admitted to be seen; not desired to stop engines. Ariel kept no bell nor horn going. Perth not going so fast as usual. Sir John Nichol remarked that steam-vessels, a comparatively new species of navigation, were vessels of great power, and likely to inflict very serious injury on sailing vessels, which the Court was bound to protect as carrying on the coasting trade of the country. Steam-vessels rendering salvage assistance were always well rewarded by the Court; they could be more easily managed than sailing vessels; their course could be more easily altered by the helm, and the engine could be stopped entirely, so as to avoid collision with other vessels. Those who fitted out steamers should be aware that proper precautions should be taken, and due vigilance used, in order that the coasting trade, which the Court was bound to protect, might not suffer. It might have been known in the present case that many vessels lay in the steamers' track; that it was time of tide and state of wind that they would be nearing the coast to anchor, and it did not appear that the Perth altered her usual rate of going, notwithstanding the night was dark and foggy; there was no attempt to stop the engines, which might have been easily done. The Trinity Masters were of opinion that the steamer was bound under the circumstances, to reduce her speed one half, and to have stopped her engines, which would have reduced the shock of collision. The Court pronounced for the claim of Ariel, with costs.—*Admiralty Court, 12th Jan.*

LAING v. FOSTER.—An action brought by owner of ship Porcupine, bound for Africa, against her charterer. Alleged, ship did not take in full cargo, did not load within fifty-five running days after her arrival at St. Mary's, and defendant was not paid freight or demurrage. Replied, for defendant: he did not load a full cargo, being always ready to do so, but plaintiff refused to receive it; willing to have shipped cargo, but prevented by plaintiff's default; did not detain ship fifty-five days, and ten days on demurrage; vessel to sail to St. Mary's for timber; went to Gambia, and then up to Ventang Creek for a cargo; sailed 8th March; arrived at St. Mary's 28th March; first timber taken on board 20th April. Witnesses were called, who charged the delay to defendant and not to plaintiff. For defendant, it was stated that captain might have taken larger cargo, but refused; that the ship was not properly furnished; had she been so, might have loaded in a month; prevented loading because ship required caulking, and although she was not full, she was deep enough in the water. Lord Denman stated, the questions which the jury had to decide were, had she taken in a full cargo? if she had, the defendant was entitled to verdict; if she had not, the plaintiff was. Did she load within fifty-five running days from her arrival at St. Mary's, and ten days after, and was she detained by defendant? Whether defendant was ready to load a full cargo, and whether plaintiff had dispensed with shipping that cargo? the vessel had remained ten days over her time, and they must decide whether that delay had been occasioned by plaintiff or defendant? The jury gave their verdict for the plaintiff on all the issues except payment.—*Court of Queen's Bench, 24th Feb.*

THE COLONIST.—*Salvage.*—Burnt at Mother Bank, (see p. 819, and p. 857.) Case referred to justices of peace at Gosport. Salvors. The smack Lallah Rookh and the cutter Marquis of Anglesey. seventeen persons claimed for having removed the ship from the Mother Bank in a sinking state and on fire, and brought her to Haslar Beach, where fire was extinguished, and remains of cargo landed at Portsmouth. Decided, that the conduct of the salvors had been so praiseworthy and so hazardous, that they were awarded one half of the net produce of the remains of the cargo and wreck. It is said this will amount to about 600*l.*

THE HOPE.—*Salvage.*—The Duke of Roxburgh, of Algoa Bay, on the 29th of July last, from Madras to London, observed a ship to leeward with signal of distress flying. Bore up; proved to be American ship Hope from Canton to New York; cargo valuable; crew at pumps exhausted; vessel sinking; put four men on board; bad weather succeeded; determined to abandon her; tea and other goods of cargo transhipped to Duke of Roxburgh, and ship abandoned; supposed foundered; cargo saved, and brought home; value 7,465*l.* Complained against salvors, they should

have taken the vessel to Algoa Bay. Replied to that, in the weather which followed, and the state of the vessel, the whole property would have been lost, and the insurance of Roxburgh Castle might have been vitiated. The parties being unable to come to any agreement, Sir John Nichol decided that a very meritorious service had been performed, and that 2000*l.* (rather more than a quarter of the property saved) was not too much to award to the salvors, the expenses being first deducted and paid.—*Admiralty Court, Feb. 8th and 17th.*

THE RICHMOND.—*Collision.*—Boreas brig, 216 tons, from Guernsey to London, cargo granite; and Richmond brig, 158 tons, mixed cargo, bound to Trieste; came in collision on the 22nd of May, at night, about five miles off Beachy Head; jib-boom and bowsprit of Boreas going through foresail on larboard-side of Richmond's foremast, wind to the eastward of north. Boreas sunk, crew being saved by Richmond, which vessel put into Portsmouth for repairs, and proceeded on voyage. Sir John Nichol decided, from the protests of the two vessels, that a proper look out had not been kept on board the Richmond; had there been, as the night was not dark, the collision might have been prevented; and therefore pronounced for the damage, referring the amount to the registrar, &c.—*Admiralty Court, 24th Jan.*

GRAINGER v. BAIN.—An action for libel in the *Nautical Magazine*, imputing perjury in evidence given before coroner's jury on three persons drowned, in consequence of the collision between Monarch and Apollo. Special jury. Plaintiff was passenger in one of the vessels, and having witnessed accident, in discharge of public duty had given evidence before jury; had been charged with thick and thin swearing, imputing perjury; character and feelings injured thereby; brought present action, and challenged public enquiry; believed the expressions were not intended, and therefore desired refutation of the slander. Stated, on part of defendant, he had used expressions under considerable excitement, which he did not mean to justify in cooler moments; there existed no ground whatever for such an imputation, and acquitted plaintiff of all blame. If he had wounded his feelings he deeply and sincerely regretted it, and felt happy in the opportunity of making the avowal. Verdict of 40*s.* damages taken by consent of plaintiff.—*Court Common Pleas, 22nd Feb.*

Records of Wrecks.

THE JOHN STAMP, No. 125, cargo, cotton, coffee, and ivory.—Driven on shore at Leestone Point—surf prevented all assistance—about noon Lieutenant Scriven (passenger) leaped overboard to swim ashore—was drowned—at 3 P.M. the masts fell—crew clinging to rigging—a boat from the shore at the instance of the Rev. W. Boyle, put off and saved fifteen of the crew, nearly lifeless through a heavier surf than had ever been witnessed. The four persons lost were Lieutenant Scriven, Mr. Wetherell, (of Birmingham) J. Hogarth and M. Shea—great exertions of Mr. Watson in saving cargo—coastguard had great difficulty in protecting property from natives.

ROBERT, of *Sunderland*, No. 131, seen running in distress for port—struck on bar at entrance of Hartlepool—heavy surf breaking over her—crew took to rigging—boats put out and saved them—attention of Messrs. Thompson and Edgar, surgeons, to those injured—vessel a complete wreck—some materials saved.

RAINBOW, No. 130, of *Sunderland*—run foul of on the 24th February, lost main-mast—bore up for land—sea high, weather bad, vessel unmanageable—driven on shore (2 P.M.) at Hawthorn Hythe, (north of Seaham)—high surf—crew and captain's wife entered longboat to prevent being washed overboard—in morning a boat saved all but captain's wife, who perished from cold.

BENWELL, No. 110, of Newcastle.—In coming off the shoal made much water, pumps of no avail—abandoned at 4 A.M., and sunk in deep water—crew, eleven, two gentlemen passengers and five females landed safely at Burnham—humane conduct of Captain Moody in supplying them with apparel—crew and passengers landed in a most destitute condition, met the most hospitable reception from Messrs. Dewing, Hulls, and other gentlemen of Wells.

SIR F. BURTON, No. 133, seen drifting before wind and tide into south-east part of Ardmore Bay—beached—foremast and main topmast went—vessel became imbedded

in the sand—crew lashed to timber on deck—tide ebbing, hopes of reaching vessel—unavailing account of wind and surf—signals to crew to leave vessel—unheeded—spars and boat drifting on shore without crew—painful apprehension for fate of crew as tide returned—at four, crew (about twelve) driven from deck by sea to rigging—soon after mast fell—crew crowded on remaining one—night closed on them in this condition—about six o'clock vessel broke up—shore covered with parts of cargo and wreck—no one saved.

WOLF, No. 106.—Extracts from log, 6th August, 1837.—Three men sick—shortened sail for night—at 3h. 30m. A.M. sighted Lord Howes Island, distant 12 miles—at 8h. 30m. A.M., Captain Evans went ashore to procure water and refreshment—crew sickly—7th August—squally weather—ship working under island—sunset, weather as before, land from N.N.W. to N.W.—Ball's Pyramid, E.S.E.—in night, fresh breezes and squally. At daylight more fine—stood under east end of island—at 8 A.M., sent three boats on shore with casks for water—ship stood off about 2½ miles—in passing reef observed a strong current setting ship towards it—at 11 tacked in shore—at 12, hove to for boats—strong winds and hazy—8th August P.M., fresh winds and squally—boats still on shore 0h. 30m. P.M., filled—on standing inshore shoal one point before starboard beam three quarters of a mile, passing it rapidly—current strong to southward—smooth water—one boat coming off to say water—casks could not be towed for the strong current—shoal on lee beam a quarter of a mile—at ten minutes before one, current shifted, setting ship rapidly on weather bow down to shoal—no room to wear ship under double reefed topsails, jib, foretopmast-staysail, and main trysail—shook reef out of foretopsail and made all sail possible—no alternative but to run ship between two reefs—wind to southward, Captain Evans put the helm up and ran the ship in—hung about ten minutes on starboard bilge—started ahead and struck second time aft more severely than before—carried away rudder with some pintles—cleared the reef—ship's head put off shore making no water—employed shipping rudder and determined on going to Sydney. Soon after found four feet water in hold—pumps at work, found water within four feet of second deck—determined to beach the ship—cleared up all abaft and set sail forward—cut away mizen-mast—launched a spar on lee quarter—water gained on board—crew and captain mustered clothes in boats and abandoned wreck, half an hour after ship capsized and sunk—her value, 16,000*l.*—cargo, 1,700 barrels of sperm oil. Captain and crew lost all their things and earnings for eighteen months—landed on the island and remained there five weeks—relieved by the *Psyche*, Captain Norris—great kindness and attention paid to crew of *Wolf* by few individuals on the island—finally landed at Sydney. *Wolf* said to be insured for 8,000*l.*

DEFIANCE, No. 55, Brig, of Clay.—Left Odessa 26th December with tallow and wool—4th January wrecked near Kily, seventeen miles east of entrance of Bosphorus—captain has left a wife and six children.

BRANDYWINE, No. 48, Brig, of Sunderland—Left Charente, 10th January—easterly gales—23rd, made Portland Light, high sea—obliged to lay to, drifting westward—25th, saw Eddystonc Light, E. by N.—vessel drifting towards Falmouth—26th, snow showers—daylight—land close to—unable to wear. At 6h. 15m. struck with broadside on a rock—sea breaking over her—in six minutes became a wreck—crew washed overboard—one James Gilchrist regained ship and leaped from bowsprit to the rock—saw another of crew, Charles Rogers of Liverpool, on wreck, could render him no assistance—about an hour and a half sea washed him away—Gilchrist discovered almost naked on the rock (Gwingeeas off Gorranshaven, about one mile off shore) at 2 P.M., by the *Fox* revenue cutter, and saved by her boat with a gallant boat's crew—seen from shore—attempts to save him from thence useless—kind treatment of Lieutenant Best, afterwards landed at Fowey. The boat's crew of the *Fox*, who saved him, are Mr. J. Grandy, (mate) of the *Stork*; W. Curtis, boatswain of *Fox*; J. Ellery, W. Ede, J. Crews, seamen of *Fox*.

INDUSTRY, No. 124, boat and register picked up at Cromer. Vessel supposed lost.

COMET, No. 53, Brig, of Cowes; coal laden—totally lost on Sheringham Shoal, on 13th February. Crew (18 men) with great difficulty got into boats—remaining by wreck—weather most severe—sea tremendously high. Saved by the *Wheatthill*, Captain Park, which hove in sight and landed them in safety, destitute of everything.

MARY, No. 76, of South Shields; coal laden—lost and crew saved with that of *Comet*.

DELIGHT, No. 56.—Parted from her anchor on the night of 31st October, in a gale—wreck to be sold.

HEBE, No. 65.—Parted at same time as *Delight*, and wrecked to the southward of Madras.

SYDNEY PACKET, No. 92.—In an easterly gale, lost off Meraiko—New Zealand. crew saved.

OLIVE BRANCH, No.—Lost on Whitehouse Bank, Dungaon; crew saved by boat; weather excessively severe.

MARTHA No. 74.—Some dry goods landed at Liverpool, by the Blakely, from the Martha; wrecked on the Paracels.

THETIS, No. 136, Running in a gale at night, struck on east end of Breakwater, at Plymouth—crew took to rigging—all but one saved by Lieutenant Holman, of Bovisand Preventive Station, and Captain Finlater.

Rose, No. 132, of Harrington.—Caught fire accidentally, and burned to waters edge, (15th February) in Samphire roads—fire supposed to have originated from cabin stove, by rolling of vessel—crew saved with loss of everything—vessel (quite new) said to be insured.

CORDELIA, No. 114, of South Shields. Fallen in with leaky west of Scilly (40') with-out bowsprit and foremast, lost in a gale of wind, 15th February, in latitude 49 longitude 8½—sea broke over, in tow of Palmyra—crew unable to keep her afloat—vessel abandoned, and Captain Dumble and crew saved by Palmyra—received great kindness and attention from her captain.

WRECKS OF BRITISH SHIPPING—CONTINUED FROM THE SHIPPING GAZETTE.

(Continued from page 213.)

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
Aut	Of Dundee	Newcastle	Gibraltar	Hasbro' Sand	23 Feb.	Crew saved.
Ariel	Watson			Cross Sand	25 Feb.	Crew saved.
Arrau		Wexford	Gloucester	Hook Light	16 Feb.	Crew saved.
110 Beawell	Moody	Newcastle	London	Sheringham S.	24 Feb.	Crew saved.
Charles		Messina	Jersey	Sicily	Dec.	Crew saved.
Charles Potts				Leyme	24 Feb.	Crew saved.
Columbia	Thornton	Bombay	London	43 N., 29 W.	21 Jan.	Abandoned.
Cordelia	Dumble	Newcastle	Cadiz	Off Scilly	Feb.	Foundered.
115 Edward				Great Castle Hd.		
Eliza	Huellin	Newcastle	Jersey	C. L. Hogue	16 Feb.	Crew saved.
Exchange	Graham	Perth	Whitburn		25 Feb.	Four lost.
Frances	Duncan	Gloucester	Dublin	Devon.	22 Feb.	Crew saved.
120 Friends	Hicks	Newcastle	London	Palling	24 Feb.	Crew saved.
Gambia		Jamaica	St. John's	Beaver Head	18 Dec.	
Henry	Of Cork	Sunk in chan.			Feb.	
Hercules	Pritchard	Cardiff	Constantuple.	Faro	21 Jan.	Crew saved.
Industry	Holeyman	Goole	Thorham	At Sea	Feb.	
123 John Stamp		Bombay	Liverpool	Carlingford	17 Feb.	Four lost.
Julia	Of Liverpool		Off Cork			
Martha	Vinor	Liverpool	Canton	Paracels		
Pandora	Inglis	Newcastle	Bordeaux	I. Coubre	16 Jan.	Four saved.
Paragon		Liverpool	Perabuco	Wexford	Feb.	
130 Rainbow	Tanner	Run foul of	London	Northumberlnd	24 Feb.	One lost.
Robert		Sunderland	London	Hartpool	23 Feb.	
Rose	Graves	Destroyed by	London	Tralee	15 Feb.	
Sir F. Burton	Lindsay	Liverpool	London	Ardmore	Feb.	Fifteen lost.
Speculator	Of Ipswich	Crew picked	up, foundrd. off	Cromer	9 Feb.	
135 Tagus	Dobson	Newport	Dublin	St. Ive's	Feb.	Abandoned.
Thetis	Of Liverpool	Newcastle	Dublin	Plymouth B.	13 Feb.	One lost
Tyger	Of Cork		London	Cork		
Wolf	Reid	Glasgow	Foundered off Londonderry		3 Feb.	Crew saved.

NEW BOOKS.

CELESTIAL SCENERY; or the Wonders of the Planetary System Displayed. Illustrating the Perfections of Deity, and a Plurality of Worlds. By Thomas Dick, L.L.D., &c. Ward, Paternoster Row.

The title of this little work is well chosen, and though of a winning aspect, we venture to predict that the reader will not be disappointed by what he will find beneath it. Without dwelling on the dry details of mathematical calculations, the author has managed his subject with the hand of a master in a pleasing and agreeable manner, and has produced a compact little treatise on astronomy, which will shortly become deservedly popular.

SOUTH AMERICA AND THE PACIFIC. *Comprising a journey across the Pampas, and the Andes, &c. By the Honourable P. Campbell Scarlett. Colburn, Great Marlborough-street.*

Mr. Campbell betakes himself to Rio, the Port Royal of all South America, thence to Buenos Ayres, across to Chili, to Lima, even to Payta, back to Panama, visits the pearl islands of that beautiful bay, crosses the isthmus to Chagres, and returns home via the West Indies, relating what he saw in his diary, which he dedicates to his friend, Mr. Hamilton, and all this he does as if it were unbeaten ground, and had not been gone over, and over again by (we had almost said) his ancestors. But South America has always something new and interesting, and we find, besides Mr. Scarlett's gleanings in this spacious field, some important documents on the Falkland Islands, and the whole scheme of Mr. Wheelwright's steam navigation in the Pacific, a subject which we have treated on long ago. These are ample recommendations, besides which the work is beautifully printed, and put out of hand with considerable taste.

OUTWARD BOUND; or a Merchant's adventures. *By the author of Rattlin the Reefer, &c. Colburn, Great Marlborough-street, London.*

A highly interesting and well told story. The author, after briefly introducing his birth and education to his reader, embarks for Barcelona, and afterwards for America, encountering a succession of adventures by flood and field, famine and disease, which interest and command the reader's attention. We cannot help observing a shade of improbability here and there, which would have been better avoided, but the lovers of this style of writing, will find no fault with it.

SIMPLICITY OF LIVING. *Observations on the preservation of Health in Infancy, Youth, Manhood, and Age, &c. By J. H. Curtis, Esq. Renshaw, 356, Strand, London.*

In all that concerns the preservation of that first of all blessings, good health, in the different stages of our existence, which has been so happily designated by Cuvier, "a state of force," Mr. Curtis has here offered the most valuable information, accompanied by plain and excellent precepts for securing it. He has pointed out the evils by which it is assailed, and the mode of avoiding them, and we cordially recommend to our readers, not only a perusal, but an observance of his doctrine.

NEW ADMIRALTY CHARTS.

BALLYSHANNON HARBOUR. (*West Coast of Ireland.*) *Price 3s.*

This plan, which was one of the last of the late Commander Mudge's surveys on the west coast of Ireland, is published on the liberal scale of $6\frac{3}{4}$ inches to the mile. It includes the town of Ballyshannon, and the river as far as the bridge; also the court north of the river to Killooney Point, and south of it to Ardara Point, and it contains a very useful tide table, showing the depth of water on the bar, at half hour intervals of the flood, both for spring and neap tides.

THE DRAGONS' MOUTHS. (*Bocas de Dragos, Trinidad.*)
Price 1s.

A plan from the survey of Captain Columbine in 1803, on a scale of two inches to the mile. Vessels proceeding to the anchorages of Chaguaramas, and Porto Espana of Trinidad, must not be tempted by it to encounter the currents and baffling winds of these passages, but take the usual entrance west of the Diamante reef—they will save time by so doing.

A spirited view is given of Mona Island bearing S.S.W. three quarters of a mile, and also one of Chaca-chacare Island from this reef, which they will have no difficulty in clearing with due precaution.

AFRICA, West Coast, Sheet 1. Price 2s. By Lieut. Arlett, R.N., 1835.

The first of a series of charts, which, with the above named officer's survey, will include those of Commander Belcher and of Captain Vidal; the latter of whom is now engaged, on that difficult and dangerous part of the coast lying between Sberboro Island and Corisco Bay. Besides the African coast between C. Spartel and Arzamora, in latitude $33^{\circ}\frac{1}{2}$ north, this chart includes the Strait of Gibraltar and the harbour of Cadiz, being on the scale of $7\frac{1}{2}$ inches to a degree of latitude.

AFRICA, West Coast. Sheet 4, price 2s.

Another of the series, from C. Bojador to C. Blanco, including the Arguin Banks as far South as latitude $20^{\circ} 5'$ north. The northern part of this sheet is from the surveys of Lieutenant (now Captain) Vidal, R.N., in 1821; the southern part from the surveys of Baron Roussin in 1829. It is on a scale of 4 inches to the degree of latitude, the soundings being carried to the outer edge of the bank, which is at the average distance of about fifty miles from the coast. These are both valuable coasting charts.

THE SHETLAND ISLANDS. Surveyed by George Thomas, Commanding H.M.S. Investigator. 1833.

At length we have a chart with the aid of which the seaman may easily run his vessel into safety, on an emergency in any part of this dangerous archipelago of British islands. The whole are included in an Atlas sheet; which allows the scale of about half an inch to the mile, and the numerous inlets by which they are indented to be clearly defined. We may add, that the principal anchorages, such as Balta and Bressa Sound, Scalloway and Hillswick Firth, are added on the same sheet on larger scales. Mr. Thomas, an experienced surveyor, as well as Master of the Royal Navy, has executed his long task of surveying this labyrinth of islands with great credit, more particularly when we consider the interruptions he has met with from the severe weather, for which they are celebrated. In this single sheet, he has concentrated a work of great labour and difficulty, which will remain an honourable memorial of his zeal and ability, and which we may also add, has received ample attention at the hands of the engraver, Messrs. J. and C. Walker, of Berner's-street.

NEW AND FORTHCOMING Books:—"Topsail-sheet Blocks;" or, the Naval Foundling; a Story of the Sea, by the Old Sailor, with Illustrations by George Cruikshank. 3 vols. Bentley. "Homeward Bound," a Naval Novel, by the author of "The Pilot, Red Rover," &c. 3 vols. Bentley. A second edition of Theodore Hook's new novel "Jack Brag." 3 vols. with Illustrations. Bentley.

Views:—Our indefatigable friend Huggins promises an aquatic Engraving of the "City of Lisbon" and its Environs, with the Peninsula Company's Steam Ship *Tagus*, in her own proper element:—Another of the Island of "Malta," from Fort Ricascole, with the schooner *Mary*, of London, Captain Collings; and another of the "Bay of Gibraltar," with the barque *Morashire*, entering: the two former from the pencil of S. Clegg, Esq., Civil Engineer to her Majesty the Queen of Portugal.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

CAPTAINS,—E. H. Scott, J. Appleby. COMMANDERS, C. Festing, H. W. Giffard, J. V. Baker. LIEUTENANTS,—P. W. Hamilton, E. F. Newland, C. L. Hockin, H. St. J. George, G. Burslem, J. Strange, T. H. Downes. SURGEONS, J. Lardner, D. Mc Nab.

APPOINTMENTS.

ANDROMACHE, 28,—*Lieut.* A. T. Goldie; *Master*, G. Peacock; *Surgeon*, F. Crellin, AGENT of Steamers between Falmouth and Gibraltar, *Lieut.* G. L. Wolley. APOLLO, *Master Com.*, A. Karley; *Second Masters*, R. S. Goddin, S. Butcher. BRITANNIA, 120,—*Mate*, H. Toole. CHARYBDIS, 3,—*Clerk*, G. Fuller. CLIO, 16,—*Lieut.*, J. C. Bynon. COASTGUARD,—*Com.*, S. Hellard; *Lieuts.*, H. Harvey, W. T. Strettall, T. Macnamara. CRUIZER, 16,—*Lieut.*, W. Haskoll; *Master Act.*, W. Saunders. DEE, St. V.—*Lieut.*, W. Harvey; *Master*, G. Bradby; *Purser*, W. Lawes; *Surgeon*, G. D. Mc Laren. ESPOIR, 10,—*Lieut.-Com.*, J. T. Paulson; *Second Master*, W. H. Langtry. EXCELLENT,—*Lieut.*, W. H. Dobbie. HARPY,—10, *Lieut.-Com.*, H. S. J. George. HASLAR HOSPITAL,—*Captain Superintendent*, Sir E. Chetham. HASTINGS, 74,—*Master*, J. G. Giles; *Mate*, J. Willoughby. LILY, 16.—*Surgeon*, C. Fuller. MALABAR, 74,—*Lieut.*, G. H. White; *Surgeon*, W. Bell; *Purser*, J. ———; *Sec. Master*, F. B. Hilliard. MEDEA, St. V.—*Lieut.*, G. Giffard; *Master Act.*, J. Carter; *Purser*, W. Mountstevens; *Assist.-Surgeon*, G. Housely. METEOR, SUR. VES.—*Second Master*, E. Greenwood; *Clerk*, D. Bateinan. PEMBROKE DOCK YARD.—*Captain Superintendent*, S. Jackson, C. B. PINCHER, 5, *Lieut.-Com.*, T. Hope. RHADAMANTHUS, St. V.—*Mate*, B. Young. SCYLLA, 16,—*Mate*, S. Apthorpe. SWIFT, *Packet*,—*Master-Assist.*, D. Welch. ROYAL ADELAIDE, 104,—*Assist.-Surgeons*, C. Daniel, S. Donnelly. TALAVERA, 74,—*Lieut.*, W. Reid; *Assist.-Surgeon*, J. Tait. TALBOT, 28,—*Capt.* H. J. Codrington; *Lieut.*, E. Codd; *Purser*, B. Dyer. TARTARUS St. V.—*Clerk*, W. Braid. VICTORY,—*Lieut.*, J. Barnes. WINCHESTER, 52,—*Lieut.-Act.*, W. Lowe. WOOLWICH.—*Captain Superintendent of Dockyard*, P. Hornby, C. B.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ACTÆON, Captain Right Hon. Lord E. Russell, 3rd March, arrived at Portsmouth refitting. ALLIGATOR, 28, Captain Sir G. Bremer, C.B., 26th Feb. returned to Plymouth with sprung bowsprit; 6th March sailed for Australia. ANDROMACHE, 28, Captain Baynes, C.B., Sheerness, fitting. APOLLO, Mr. A. Karley, Portsmouth, fitting. ATHOL, 4th March, arrived at Portsmouth. BRISK, Lieut. A. Kellett, sailed for Africa, 28th Feb. CALLIOPE, 28, Captain T. Herbert, 26th Feb. at Plymouth. CHARYBDIS, at Chatham, fitting. COLUMBIA, St. V., 9th Feb. arrived at Portsmouth. COLUMBINE, 16, Com. T. Henderson, 14th Feb. arrived at Portsmouth. CRUIZER, 16, fitting at Chatham. DASHER, St. V., fitting at Chatham. ELECTRA, 18, Com. W. Preston, 22nd Feb. sailed for South America. ESPOIR, 10, Lieut.-Com. J. T. Paulson; March, sailed for Lisbon. GANNET, 16, Com. G. Whish, 24th Feb., paid off at Sheerness. HASTINGS, 74, Captain Loch, fitting at Sheerness. HERCULES, 74, 13th Feb. at Cork. INCONSTANT, 36, Captain D. Pring, 24th Feb., arrived at Plymouth, refitting. MEGÆRA St. V., Sheerness, fitting. PANTALOON, 7th March, sailed for north coast of Spain. SAVAGE, Lieut. Hon. E. Curzon, 7th March, sailed for North coast of Spain. TALBOT, 28, Captain H. J. Codrington, Plymouth, fitting. TRIBUNE, 24, Captain J. Tomkinson, 10th March, paid off at Chatham. VOLAGE, 28, Captain H. Smith, 28th March sailed for India.

ABROAD.

ÆTNA, Sur. V., Captain A. Vidal, 7th Feb. at Ascension; having suffered severely from fever in the loss of 22 seamen, marines, and boys, and 3 officers. **ASIA**, 84, 18th Feb. arrived at Cork. **BELLEROPHON**, 80, Captain S. Jackson, C.B., 10th Feb. at Gibraltar; expected home, having received damage in a gale by anchor breaking. **BONETTA**, 3, Feb. at Ascension, having lost her Commander, Assistant-Clerk, Assistant-Surgeon, and 22 men by fever. **BUZZARD**, 3, Lieut.-Com. J. Stoll, 31st Jan., at Ascension; expected home. **CHAMPION**, 13th Jan. at Jamaica. **COCKATRICE**, 3rd Jan., left Rio for Buenos Ayres. **COMUS**, 18, Com. Hon. P. Carey, 6th Feb. left Jamaica for Carthagena. **CORNWALLIS**, 74, Captain Sir R. Grant, 27th Jan. left St. John's for Bermuda. **CROCODILE**, 28, Captain J. Polkinghorne, 3rd Feb. at Jamaica. **DONEGAL**, 78, Captain J. Drake, 10 Feb. at Lisbon. **DUBLIN**, 50, Captain R. Tait, 3rd Jan. at Rio. **EDINBURGH**, 74, Captain W. H. Henderson, 10th Feb. at Lisbon. **FORRESTER**, 3, 7th Feb. at Ascension, having lost her Commander and 20 men, by fever. **HORNET**, 6, Lieut. Baillie, 16th Feb. left Jamaica for Chagres. **JUPITER**, 12th Feb. left Gibraltar for Barbados. **LEVERET**, 10, Lieut. J. C. Bosanquet, 23rd Dec. left the Cape for Mauritius. **MADAGASCAR**, 46, Captain Sir J. S. Peyton, 3rd Feb. at Jamaica; expected home. **MELVILLE**, 74, 17th Jan., arrived at Teneriffe. **MINDEN**, 74, Captain A. R. Sharpe, 24th Feb. at Gibraltar, going to Bermuda. **NIMROD**, 20, Com. J. Fraser, 7th Feb. left Jamaica for Havana. **QUESTES**, 18, Com. J. F. Newell, 24th Feb. at Gibraltar, from Malaga; had lost her rudder in bad weather. **PEARL**, 20, Captain Lord Clarence Paget, 26th Jan. at Bermuda. **PYLADES**, 18, Com. W. L. Cast'le, 15th Dec. in Simon's Bay. **RALEIGH**, 18, Com. M. Quin, 4th Oct. at Singapore. **RATTLESNAKE**, 28th, Captain W. Hobson, 17th Nov. arrived at Calcutta from Madras. **RAVEN**, Sur. Vcs., Lieut. Bedford, Gold coast. **RINGDOVE**, 16, Com. T. Nixon, 28th Jan. left Jamaica for Carthagena. **RUSSELL**, 74, Captain W. H. Dillon, 22nd Feb. at Gibraltar. **SAMARANG**, 28, Captain W. Broughton, 16th Jan. at Bahia. **SATELLITE**, 18, Com. J. Robb, 16th Jan. at Jamaica. **SCYLLA**, 16, Com. Hon. J. Denman, 10th Feb. at Lisbon. **SNAKE**, 16, Com. R. Milne, 31st Dec. left Jamaica for Havana. **STAG**, 46, Commodore J. B. Sullivan, 2nd Nov. at Valparaiso. **TALVERA**, 74, Captain W. B. Mends, 24th Feb. at Gibraltar. **THALIA**, 46, Captain R. Wauchop, 15th Dec. in Simon's Bay. **TRINCULO**, 16, Com. H. E. Coffin, 10th Feb. at Lisbon. **WASP**, 16, Lieut.-Com. E. Crozier, 24th Feb. at Gibraltar on way to Malta. **WELLESLEY**, 74, Captain T. Maitland, 24th Feb. left the Cape for Madras. **WIZARD**, 10, Lieut. Com. E. L. Harry, Jan. at Pernambuco. **ZEBRA**, 16, Com. R. Mc Crea, 15th Nov. arrived at Calcutta from Penang.

Births.

At Castway, near Horndean, the wife of Mr. Thos. Giles, Purser, R.N. of a son.

In New Cavendish-street, the lady of Captain T. Maitland, of her Majesty's ship Wellesley, of a son.

Marriages.

At Chatham, Lieut. Joseph Martin Mottley, R.N., to Eliza, youngest daughter of William Stone, Esq., Builder of Chatham Dock Yard.

At St. Michael's Church, Oxford, on Tuesday, Feb. 13, W. Doak, Esq., Surgeon, R.N., to Maria, only daughter of Mr. Sherfield, Broad-street, in that city.

At All Soul's, Marylebone, on the 27th Feb. by the Very Rev. the Dean of Chichester, Adam Bromilow, Esq., barrister-at-law, to Frances Anne, daughter of Vice-Admiral Sir Ross Donnelly, K.C.B.

At Mansfield, Commander R. H. H.

Pigot, R.N. of Southwell, to Catherine, daughter of the late Rev. J. Parsons, Rector of Cossington, Derby.

At the Views, Huntingdonshire, Lord St. John, of Bletso, to Eleanor, second daughter of Vice-Admiral Sir R. Hussey Hussey, of Wood Walton.

Recently, at St. Alphage, Greenwich, John Taylor, eldest son of the late John Bracey, Esq. of North Yarmouth, to Elizabeth Holden, the second daughter of Lieut. de Montmorency, R.N. of Greenwich Hospital, and grand-niece of the late Lord Viscount Frankfort de Montmorency.

Deaths.

At Portsea, on the 9th of March, Commander William Mallet, R.N., aged 70. The Lady of this gallant officer has also died since.

At his residence, King's Terrace, Southsea, Commander Joseph Simmonds.

At Pernambuco, on the 12th January,

Lieutenant Lyne Harvey, commanding the Wizard, aged 36, nephew of Captain Maurice, R.N.

At Jamaica, on the 2nd January, of a concussion of the brain, arising from a fall from his horse, Lieutenant Arthur Welch, R. N., one of the Stipendiary Magistrates of that island.

At Sea, on his passage to England from Demerara, on the 14th ult., Commander Thomas Southey, R.N. (1811,) aged 60.

At Highgate, in his 62nd year. Lieut. J. Browne, R.N., 18 years Harbour master at Howth.

At Carlisle Bay, Barbadoes, on the

30th of last December, on board her Majesty's brig Harpy, in his 23rd year, Alexander Francis, the fifth son of Capt. Nott, R.N.

At Falmouth, Antigua, on the 13th of January, Lieutenant Edward Edwards Owen, Comander of her Majesty's steamer Carron.

At Torpoint, on the 25th ult., Commander John Edwards, (1313,) aged 62.

At Stoke, Plymouth, Mrs. Symons, wife of Mr. R. Symons, Purser, R.N., and only sister of Dr. Glasson, Devonport.

At Liskeard, 4th inst., retired surgeon, G. B. Morgan, R.N., aged 81.

METEOROLOGICAL REGISTER,

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

FEBRUARY, 1838.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	W.	29.68	29.67	34	36	32	37	N.E.	N.E.	2	2	Ofg.	Od. 4)
22	Th.	29.67	29.64	32	35	31	36	E.	E.	4	4	O.	Osd. 4)
23	F.	29.47	29.39	33	34	32	34	E.	E.	4	3	Ofsd. 1)	Ogr. (4)
24	S.	28.82	28.70	40	44	36	45	S.E.	S.	3	5	Or. (1) (2)	cp. (:) (4)
25	Su.	28.76	28.80	42	46	40	47	S.	S.	5	4	Qbcm.	Be.
26	M.	28.92	28.95	37	38	34	39	E.	E.	4	4	Og.	Ogr. (4)
27	T.	29.10	29.12	37	37	35	38	E.	E.	4	3	Or (1)	Od. (3)
28	W.	29.10	29.14	42	48	38	49	S.W.	S.W.	5	5	Op. 2)	Bcr. 4)

FEBRUARY—Mean height of the Barometer=29.565 inches; Mean Temperature=33 degrees
Depth of Rain fallen=1.85 inches.

MARCH, 1838.

1	Th.	29.10	29.11	44	48	41	49	S.	S.E.	3	3	Bcr. (1)	Op. (3)
2	F.	29.08	29.10	41	45	40	47	N.E.	N.E.	2	2	O.	Od. 3)
3	S.	29.24	29.23	42	45	46	48	S.E.	N.E.	2	1	Bcm.	Bcm.
4	Su.	29.05	29.00	39	45	35	45	E.	S.W.	1	1	Or. (2)	Od. (4)
5	M.	29.60	29.78	39	41	38	42	N.	N.	3	3	O.	O.
6	Tu.	29.76	29.84	45	49	41	51	W.	W.	5	5	Bcr. (1)	Be.
7	W.	29.90	29.90	41	47	35	48	S.W.	W.	4	4	Be.	Bc
8	Th.	30.08	30.18	40	45	36	46	N.W.	N.W.	5	5	Qcb.	Qbc.
9	F.	30.28	30.22	33	42	30	44	N.W.	N.	3	3	Bm.	B.
10	S.	29.98	29.94	39	45	30	48	S.E.	S.E.	4	4	Be.	Be.
11	Su.	29.78	29.77	37	46	32	47	S.E.	S.E.	3	4	B.	B.
12	M.	30.11	30.16	36	44	30	46	N.E.	E.	2	2	Bcm.	Bm.
13	Tu.	30.23	30.14	41	47	32	49	S.W.	N.W.	3	4	O.	Od. (3)
14	W.	30.06	30.04	49	59	45	60	S.W.	N.W.	4	4	O.	Be.
15	Th.	29.92	29.97	44	46	43	47	N.W.	N.W.	3	2	Bcm.	O.
16	F.	29.86	29.72	39	49	30	50	W.	W.	3	5	B.	Bcp. (3)
17	S.	29.45	29.42	38	43	33	45	N.W.	N.W.	6	6	Qbc.	Qbc.
18	Su.	29.61	29.63	38	44	34	45	N.W.	N.W.	5	3	Bcp. (1)	O.
19	M.	29.60	29.60	42	45	37	47	S.E.	S.W.	2	2	Od. (2)	Bcd (4)
20	Tu.	29.21	29.21	50	48	43	53	S.W.	S.W.	7	8	Qbcp. 2)	Qbcp. (3)

ORIGINAL PAPERS.

MAY, 1838.

WEATHER ON THE COROMANDEL COAST THROUGHOUT THE YEAR.

THE following statement of the weather during each month of the year, resulting from an extensive series of meteorological observations made at the Madras Observatory, cannot fail being useful to ships frequenting the Coromandel coast.

January.—During this month, the wind blows uniformly and steadily from the N.E., with occasionally an inclination towards the east about the middle of the day, in the shape of sea-breeze. In the mornings, for the most part, heavy dew is deposited, and occasionally fog, which reaches only to two or three feet above the surface of the ground. The weather is mostly very serene; presenting about twenty days of uninterrupted clearness, and five of mist, the remaining days being clouded, with perhaps a single shower of rain; lightning is almost unknown in this month.

The hottest time of the day is about 1 P.M.; the coldest, at 4 h. 20 m. A.M.

February.—The N.E. monsoon continues, with occasional exceptions, till the middle of the month, after which calms and S.E. winds as frequently prevail. In the early part of the forenoon, it is usually calm until 11 A.M., when the sea-breeze sets in, and blows till 10 or 12 P.M. During the whole of this month, the weather is, without exception, always beautifully clear and placid, and it is generally considered to be the most healthy period of the year. There are no more than one day of haze, and one of clouds. Rain or lightning does not occur once in seven years.

The hottest time of the day is at 0 h. 40 m. P.M.; the coldest, at 5 h. 0 m. A.M.

March.—Throughout this month, the south, or alongshore wind, with very unequal force, prevails. It is accompanied with a profuse dampness and sultriness, which renders its effects highly prejudicial to health and comfort. On this account, the sea-breeze which sets in at noon, and blows till 10 P.M., is less courted than at other seasons. The sky is, however, beautifully clear for about twenty-seven days, the remaining four being cloudy. Dew less frequently occurs, and is less in quantity than last month; rain and lightning are little known.

The hottest time of the day is at 0 h. 20 m. P.M. ; the coldest at 5 h. 0 m. A.M.

April.—The remarks of last month, relative to the winds, are equally applicable to this. The south wind, varying from S.E. to S.W., still continues, at times blowing very fresh, but occasionally calms ensue, which are exceedingly oppressive. The weather is clear for about twenty-four days, with four days of flying clouds, or haze, and two of clouds, on one of which rain falls ; lightning occurs for two days. Dew is very little in quantity, and of unfrequent occurrence.

The hottest time of the day is about noon ; the coldest at 4 h. 50 m. A.M.

May.—The south wind, which is mentioned as peculiar to the two last months, continues till the middle of this month, relieved sometimes by a land-wind from the W. or S.W. In this interval, gales of wind of extreme violence have occasionally been experienced, commencing generally at the N.W., and veering to every point of the compass. About the 16th, the regular land or hot winds set in, which are moderated in their effect, towards the end of the month, by occasional showers. The sea-breeze sets in about noon, and blows till 9 or 10 P.M. There are about nineteen days of clear weather, eight of flying clouds and haze, and four cloudy days, on two or three of which there is rain.* The dew is almost imperceptible ; and lightning, with thunder, occurs about four times.

The hottest time of the day is at 11 h. 20 m. A.M. ; the coldest at 4 h. 20 m. A.M.

June.—The land-wind has arrived at its maximum of effect about the beginning of this month, being afterwards much moderated by clouds and rain. The sea-breeze, which is extremely uncertain, sets in about 1 P.M. and blows till about 9 or 10 P.M., but sometimes altogether fails. The weather is clear for about eight days, there being eleven days of flying clouds and haze, and the same number of cloudy days. Of these there are six days in which rain occurs, and three or four of lightning and thunder. Dew is almost imperceptible.

The hottest time of the day is about 2 P.M. ; the coldest, at 4 h. 20 m. A.M.

July.—With this month, the rains of the S.W. monsoon being generally in heavy but partial showers, the weather may be reckoned among the most cloudy of the year, there being only six clear days ; the remaining days consist of thirteen cloudy, and twelve of flying clouds and haze. Of these there are eight days on which rain falls, and about three of thunder and lightning. The sea-breeze is very

* In this statement, the rain which fell during three gales of wind has been omitted ; on the 2d May, 1811, during the gale which then blew, there fell 5·5 inches ; on the 8th, 9th, and 10th May, 1820, 16·54 inches ; and on the 7th, 8th, and 9th May, 1827, 23.30 inches.

uncertain as to the time it commences or ceases ; and not unfrequently fails for several days together.

The hottest time of the day is at 2 h. 20 m. P.M. ; the coldest, at 4 h. 0 m. A.M.

August.—The regular westerly winds, which terminate about the middle of this month, are succeeded by winds of a light and variable nature, mostly from the west and south. Calms, haze, and rain, occur in about the same proportions as last month, leaving about eight days of clear weather. Lightning, unattended by thunder, is very frequent, but thus accompanied, it occurs only once or twice. The sea-breeze assumes much the same character as that experienced last month ; commencing at 2 or 3 P.M., and continuing till 8 or 10 P.M. Dew is sometimes discovered, but more frequently fails.

The hottest time of the day is at 2 h. P.M. ; the coldest, at 3 h. A. M.

September.—Throughout this month, light and variable winds, with occasional calms, continue. And with the exception that the weather is not quite so much clouded, the remarks of last month apply with equal propriety to this. Lightning occurs almost every evening, but accompanied by thunder three times only. The sea-breeze sets in about 2 or 3 P.M. ; and blows till 8 or 10 A.M., but occasionally fails for two or three days together. Dew is common, but small in quantity.

The hottest time of the day is at 2 h. P.M. ; the coldest at 4 h. 20 m. A.M.

October.—The clouds now begin to assume a more dense appearance than heretofore. Calms, lightning, and rain are very frequent, till the 9th, when the N.E. monsoon, or rainy season, sets in. From this time till the end of the month, the atmosphere assumes a very disturbed appearance. Extremely heavy rain, with storms of wind, thunder, and lightning, invariably occur ; and gales of wind, of a similar nature to those which occur in the earlier part of the year,* are sometimes experienced. On these occasions a depression of the barometer of four or five-tenths of an inch is observed. The sea-breeze, or rather a slight modification of the N.E. wind is perceived towards the middle of the day.

The hottest time of the day is at 1 h. P.M. ; the coldest, at 4 h. 50 m. A.M.

November.—The N.E. monsoon continues with unabated force, and the state of the weather generally is much the same as that experienced towards the end of last month, save that an increased dampness of the air, and the less frequent occurrence of lightning, render a distinction necessary. The number of clear and cloudy days in this, as well as last month, is liable to great uncertainty.

* See remark for month of May.

The remarks relative to the sea-breeze of last month apply equally to this.

The hottest time of the day is at 0 h. 20 m. P.M.; the coldest at 5 h. 40 m. A.M.

December.—The heavy rains and violent gusts of wind are much moderated at the beginning of the month, and arrive at their close about the 15th. From this time, the sky assumes an appearance of tranquility and clearness, which forms a strong contrast with the disturbed state of the preceding month. The N.E. wind, however, continues throughout the month, without interruption; there are about thirteen clear days, eleven cloudy, and seven days of flying clouds and haze. Of these there are six days on which rain falls. The mornings exhibit a copious deposition of dew, and sometimes a ground fog, which does not reach more than two or three feet above the surface. The sea-breeze sets in at 10 A.M., and blows till 4 P.M.

The hottest time of the day is at 0 h. 50 m. P.M.; the coldest, at 2 h. 50 m. A.M.

PASSAGES IN INDIA.

MR. EDITOR,—As many English vessels come to Madras on “seeking” voyages, the accompanying Table of “average passages from different ports in India to Madras” may suit the columns of your highly serviceable Journal. The table is deduced from actual passages made to Madras from the different ports, and can therefore be relied on as accurate.

Wishing you every success, I am your's always,

Madras, 15th August, 1837.

J. F. M.

Table, showing the average Number of Days occupied in Passages from different Ports of India to Madras, throughout the Year.

MONTHS.	From Chittagong.	Masulipatam.	Vizagapatam.	Ganjam.	Calhngapatam.	Coringa.	Cuddalore.	Port Novo.	Nagore.	Negapatam.	Cochin.	Mangalore.	Trincomalee.	Point de Galle, and Colombo.	Bushire.	Mauritius.	Cape of Good Hope.	Penang.	China.	Batavia.	Bencoolen.	New South Wales.	Moulmen.	Bengal.	Bombay.
January ...	14	5	7	28	...	6	...	13	5	4	30	...	...	...	50	58	11	38	60	...	...	11	9	11	
February ..	18	4	5	26	...	7	...	3	6	2	20	...	7	24	...	53	...	14	33	...	...	73	10	3	14
March	23	13	16	16	...	11	...	4	...	7	26	...	...	21	...	45	...	18	38	...	...	73	21	26	18
April	35	...	15	...	11	...	...	4	...	5	...	...	11	16	...	46	...	20	32	40	...	...	18	18	20
May .....	...	...	18	...	17	9	...	3	...	4	19	28	...	17	...	43	...	25	...	...	...	65	27	28	25
June .....	...	...	23	...	21	...	...	...	...	...	...	...	...	16	...	30	...	27	...	...	29	56	19	32	27
July .....	...	...	19	...	13	19	2	...	...	...	...	...	...	8	...	25	...	27	...	...	70	...	...	22	27
August ...	...	...	11	...	12	...	...	...	...	...	...	...	...	8	...	29	...	...	...	...	...	...	33	25	...
September	...	...	12	...	10	...	...	...	...	...	...	...	...	7	45	27	...	...	...	21	...	56	38	25	...
October ...	...	...	10	25	...	6	...	...	...	...	19	...	...	12	...	31	...	27	81	...	27	78	29	20	27
November	...	...	6	...	18	...	...	...	...	...	...	...	...	...	...	28	...	23	52	...	76	...	...	22	23
December	...	...	8	...	3	...	...	...	...	...	...	...	...	...	...	41	...	22	...	...	...	...	...	12	22

LIGHT FOR CAERNARVON BAR.

MR. EDITOR,—A correspondence between the member for the Caernarvon boroughs and the Trinity House, respecting my proposal for placing a floating light to enable vessels to cross Caernarvon Bar, having found its way into the *Shipping Gazette*, I take the earliest opportunity of putting you in possession of the plan, believing it to be one of great importance to many of your readers.

The value of a light at the western entrance of the Menai Straits can scarcely be doubted, when the position of Caernarvon Bar, and the extensive trade carried on within it, are considered.

When every seaman's attention is drawn, as at this moment, to the necessity of forming ports of refuge on our coasts for the protection of the passing trade, it appears to me no less necessary to see how far our present harbours may be improved, and rendered efficient for that purpose.

I do believe that a judicious scheme of lights at Caernarvon Bar would materially lessen the dangers of that deep bay.

At present, a ship dare not attempt Caernarvon Bar without daylight, however urgent the necessity; and the alarming consequence of being surprised by night is so manifest, as to require no argument. Besides, there are certain periods when it is literally closed to a ship of any draft. For instance, in the short days of winter, when the tide flows at six o'clock, or thereabouts. Even in fine weather, no ships could venture to run for the Bar during a fog, without the gong or bell of a light-vessel to apprise them of their position.

So much for the navigation of the strait itself; but a light-vessel, well-placed, would prove invaluable as a warning to vessels as they approach the dangerous coasts of Anglesea and Caernarvon;—for it is a fact worthy of attention, that Bardsey and the South Stack lights are both lost sight of long before you reach Caernarvon Bar on either side.

I have very little doubt but that if Caernarvon Bar was lighted, many ships would prefer the infinitely shorter voyage to Liverpool by the Menai Straits, than the one at present adopted round Anglesea.

The plan which I have proposed is, that a light-ship should be placed within the protection of the Bar, and near about the place where the red buoy at the South sand-head now lies; and instead of the small perch now on the Muscle-bank, that a substantial building of masonry, surmounted by a small lantern, be erected there.

To sail in over the Bar, it will then only be necessary for a vessel to bring the light-ship to bear about E.N.E. by compass, which course would lead close by the Black or Bar buoy, and passing her on the starboard hand, to steer for the beacon, or standing light; the two to be kept, one ahead, and the other astern: leave the beacon light on the

larboard hand, and having passed it, bring the two lights in one; this will lead into the straits between Abermenai and Belan points.

By the adoption of this plan, the seaman would be relieved from much anxiety, there being only one compass-bearing to attend to; for when past the floating light, the two in a line lead into safety.

I am, Sir, yours, &c.

W. L. SHERINGHAM, Lieut. R.N.

To the Editor of the NAUTICAL MAGAZINE.

THE MANACLES ROCKS.

THE following notice has been issued by the Trinity House, London, dated 24th March, 1838. "In compliance with a representation which has been addressed to this Corporation, a black buoy, marked with the word 'Manacles' upon its head, has been placed at $18\frac{1}{2}$ fathoms at low water spring tides, 56 fathoms S.E. from the outer sunken rock at the eastern extremity of the Manacles Ridge, and with the following marks and compass-bearings, viz. :—

"The southernmost building upon the high land southward of Cove-rack, apparently midway between the two outer rocks off the north point of that cove, W. by S. Mawnan church tower, 0.1 with the first rise of the land from the sea, upon the Nare Point, N. by W. Black Head, W.S.W. $\frac{3}{4}$ W. St. Kevern's church spire, N.W. by $\frac{3}{4}$ W. St. Anthony's light tower, N.E. by N.

"By order, "J. HERBERT, Secretary."

MANACLES BUOY.

London, March 30th, 1838.

SIR,—Having just reached London, from Falmouth, I was glad to find on my arrival at the latter place, that the Elder Brethren had laid down a buoy outside the "Manacles" outer rocks.

The trade has long required this attention on the part of the Trinity House. The only remark now made is, Why, as it is a black buoy, it should not have a beacon to distinguish it from the buoy on the shoal ground, called the "Old Wall," to the southward of "St. Anthony's Head," which is also black. For now it is quite possible that a mistake might arise in thick and hazy weather, whereas, with a beacon attached, it could hardly be possible.

Having property afloat frequently using Falmouth harbour, I am naturally anxious on the above arrangement; and as you show yourself at all times ready to assist the mariner, through the various useful articles you notice in the *Nautical Magazine*, induces me to trouble you on this occasion, with a hope that, should it be perused by any of the gentlemen before mentioned, they will, on their reconsidering the

case, be pleased to give a *beacon* to the present plain black buoy on outer Manacle Rock, or rather laid down outside of it.

Remaining, Sir, your obedient servant, VERAX.

Falmouth, April 7. — The pilot who reported the buoy being adrift in the channel between the Land's End and the Lizard, states to-day, that in passing off those head lands on Thursday, he observed a lighter and a cutter engaged in weighing it.—*Shipping Gazette*.

[QUERY.—Is this the new buoy referred to by our correspondent? If so, the Trinity House will have time enough to consider his suggestions before replacing it.—Ed. N. M.]

LIGHT ON ST. CATHERINE'S POINT, ISLE OF WIGHT.

THE following notices, dated 6th April, 1838, have been issued by the Trinity House. "This corporation having resolved to establish a light-house at St. Catherine's Point, in the Isle of Wight, and the construction of the necessary tower having commenced, notice thereof is hereby given, that the exhibition of the intended light therein, will take place in the spring of 1839. Mariners are to observe that this new light will be seen as a fixed bright light in all directions seaward, and that from the time of its exhibition, the light at the Needles point will be discontinued as a Channel light, and will not be visible to the southward of the line of bearing of St. Alban's Head.

"By order, "J. HERBERT, Secretary."

MENAI LIGHT.

"The light tower which has been for some time past constructing upon the extremity of Black Point, in Anglesea, at the north-eastern entrance of the Menai Straits, being now nearly completed, a light will be exhibited therein in about two months from this date. Mariners are to observe, that the light in this tower will be stationary, and of a red colour, visible from N. W. $\frac{3}{4}$ W. seaward, to S. W. $\frac{1}{4}$ W., excepting that by the intervention of Puffin Island the light will be eclipsed to vessels upon the bearings from it of E. by N. $\frac{1}{2}$ N. to E. $\frac{1}{2}$ S. Notice of the precise time at which the first exhibition of this light will take place, will be issued in due course.

"By order, "J. HERBERT, Secretary."

NEW BUOYS AT THE ENTRANCE OF THE DEE.

The following notice, dated 29th March, has been issued by the Trinity House. "Two additional Buoys, marked as hereunder men-

tioned, have been placed in the River Dee, in the following situations, viz. :—A Red Can Buoy, marked ‘Welshman’s Gut,’ on the West Spit of the West Hoyle Sand, in five feet at low water spring tides, and with the following compass-bearings, viz. :—Mostyn Gut Buoy, S. W. by S. $\frac{1}{4}$ S. Salisbury Middle Buoy, W. $\frac{1}{2}$ S. Salisbury Swatchway Buoy, S. W. by S. Point of Air light-house; W. by N. Hilbree Telegraph, E. by N. $\frac{3}{4}$ N. A Black Nun Buoy, marked ‘Salisbury Swatchway,’ in twelve feet at low water spring tides, on the West Spit of the Great Salisbury Bank, at the entrance of the Swatchway, and with Mostyn Gut Buoy, bearing S. by W. $\frac{1}{4}$ W. Welshman’s Gut Buoy, N. E. by N. Hilbree Telegraph, N. E. $\frac{1}{2}$ E. Point of Air light-house, N. W.

“ By order,

“ J. HERBERT, Secretary.”

INNER PASSAGE FROM SYDNEY TO TORRES STRAITS.

Ship John, August 24, 1837.

I SEND you a copy of our log * through Torres Straits, which will interest you.

It shows that the passage through the “*Inner Channel*” is not attended with more delay than the outer, as we spoke the “*Runnymede*” and “*William*,” at Booby Island, both of which vessels sailed from Sydney a few hours before us, on the 8th.

We anchored four times, and I am satisfied that it only requires a good look-out to effect a speedy and pleasant passage through the inner channel.

We found no hidden dangers which are not marked on your charts so clearly that, together with the sailing directions, a very ordinary navigator could take a ship through without the chance of accident. The masters of the “*John*” and “*Adam Lodge*” have declared to me their determination to adopt it in future, and speak indignantly of the representations of fancied dangers and delays which were made to them at Sydney, and are very glad to have had an opportunity of judging for themselves. The dangers, as I have before said, are accurately laid down, and are all pointed out in the charts. I need not speak of delays, from what I have already mentioned, when we arrived off Booby Island, on the morning of the 21st, and left the Heads of Port Jackson on the evening of the 8th, at six o’clock.

I think it proper to mention to you, that Captain Whyte, in standing into the proper anchorage laid down at Turtle Island, stated to me,

[* This log has been published in India by the same officer, with the laudable view of showing the advantages of the inner route, and is distributed gratis.—Ed. N. M.]

that he carried eight fathoms just inside the island, when it suddenly shoaled to four and a half, that he hauled out immediately, and anchored six miles from the island, in five fathoms, where it is laid down ten. The Rattlesnake anchored about four miles and a half from the island with breakers and sharp-pointed rocks, appearing through them about half a mile from her starboard side. In troop ships, at this time of the year, there can be no question which is the most desirable passage of the two; the weather throughout the time we passed has been fine, with strong fair winds, tending much to our comfort in many ways. I hope from our extraordinary success, independently of the dangers to which troops are exposed in the outer channel, from which there is no relief if the transport strikes on the Barrier Reefs, that all future tenders for conveyance of troops to the northward, will meet with the same considerate attention as ours did from Sir R. Bourke, in making the inner channel one of the provisions." J. F. M.

[The question whether the passage to Torres Straits from Sydney shall be made inside or outside of the Barrier Reefs, has frequently occupied our attention; and considering the arguments both for and against each that have been advanced by our correspondents, our readers have no doubt long since decided that the certain security, and smooth water of the inner track, is preferable to the great risk of meeting with bad weather with the reefs to leeward, which attends the outer one at the very time of entering the reef. A vessel may have made a good passage outside, with fine weather, and at the very time that a continuance of the latter is wanted, boisterous weather has come on, preventing an observation from being had to enable her to bear up for one of the passages through, and wreck has ensued. Loss of time has been advanced as an important objection against the inner route, but this has been shown to be erroneous; and the preceding letter, from an officer of Her Majesty's service, to Captain King, at Sydney, tends to confirm the advantages of this route over the outer one.—Ed. N.M.]

BARS OF THE RIO GRANDE DE SAN PEDRO.—*Brazil.*

Brig General Wolfe, Liverpool, April 10, 1838.

MR. EDITOR,—When I wrote to you in August, 1836, respecting the entrance of Rio Grande de San Pedro, and which letter you were kind enough to publish, (see vol. for 1836, p. 578,) I had no idea that a change in the position of the bar would have taken place so soon as it has done; the principal entrance being now to the southward of the tower instead of to the N.E. of it.—In Dec., 1836, I entered by the N.E. bar, (the one for which I sent you directions,) but the pilots said then that the small swatchway to the southward which usually had about 7 feet on it, was improving; and in March, 1837, I saw a brig go out by it drawing 9 feet 3 in.—Still there was no change in the N.E. bar.

I arrived there again in October, 1837, and entered by the N.E. bar, drawing 10 feet 6 in.—The pilots then said that the southern bar was far the best. Soon after I arrived, the N.E. bar closed up, occasionally

opening out again, but never with much water on it, so that vessels now enter by the new southern bar.

The directions given in my former letter for making the tower, may be followed with the wind, at N.E., which is the prevailing summer wind, but no vessel can enter with that wind, as the course will be N.E. immediately after crossing the shoal part of the south bar. If the wind is southerly the land had better be made just to windward of the port, and you may probably enter at once. The signals mentioned in my former letter are to be hoisted at the fore, and the red flag on the tower will be hauled down if you cannot enter.

On making the tower you will perceive on the top of it, two perpendicular flagstuffs, (one taller than the other,) and two horizontal poles. The tall flagstaff is for the red flag, as a signal for you to steer for the bar. With any signals which may be hoisted on the short flagstaff you have nothing to do. These are intended to intimate to vessels *in the harbour* that they can go to sea. Formerly this short flagstaff could not be seen from the sea, being hid by the light-room which was on the top of the tower; but the light-room was burnt down in January, 1837, and has not since been rebuilt; of course there is no longer a light. The two horizontal poles which project from windows a few feet below the top of the tower are for pointing out to a ship at sea which bar she is to steer for; one of these poles points to the S.W., and the other to the N.E. If the ship be steering for the N.E. bar, and the look-out man wishes her to go to the southern one, a flag will be run out on the S.W. pole, and *vice versa*. Sometimes if the look-out man see that a vessel is puzzled to find the bar-boat, (which is occasionally not easily seen on account of the high breakers between her and the ship,) he will direct her by means of these flags; steer to the N.E. when the N.E. flag is run out, and to the S.W. when the S.W. flag is out, paying attention to them in the same way as you do to the waving of the flag in the bar-boat. As soon as the look-out man perceives that you can see the signals from the bar-boat he will desist. Though these horizontal arms are intended for this purpose, and are sometimes used when a vessel gets into danger, a stranger must not rely upon seeing them, as the pilots are very inattentive.

When I wrote to you before, there was an opposition party of pilots which made them all very much on the alert. This did not last many months, and they soon relapsed into their old careless habits. If running down the coast from the N.E. and proceeding for the south bar, do not haul too close in shore when within three or four miles of the tower, but keep in about six fathoms, so that you may clear the bank which fronts the entrance of the river. If the wind will allow you to enter, and there be sufficient water, which will be known by the red flag being kept up, you may bring the tower to bear north, and

steer for it until you see the bar-boat. Then pay attention to the waving of the flag from the boat as mentioned in my former letter:—when he weighs follow in his wake. The course will be about N.E. immediately after crossing the shoal part of the bar; leave the second boat on your larboard side, and after passing her your course will be about N.W. But you cannot go wrong by following in the wake of the bar-boat, and paying attention to the waving of his flag.

This southern bar is, in some respects, better than the other used to be. The channel is considerably broader, and the shoal part much shorter; being not above two cables' length across, and deepening quickly both outside and inside, to three, four, and five fathoms. There are other circumstances against it. In my former letter I observed that N.E. winds depress the water, and that south-westers raise it; therefore, you cannot load so deep in the port as formerly, as you cannot get out with a S.W. wind. Again, if a S.W. wind blows strong, which it frequently does, at its very commencement, it raises such a sea on this southern bar as to render it impassable for a vessel which may be outside: in fact, the bar-boat could not get out. I came out over this southern bar, in December, 1837, drawing eleven feet three inches, with a northerly wind, and the water unusually high for the wind in that direction. The brig thumped over all the shoal part. Fortunately the sea was abeam, so that she fell bodily on her keel fore and aft; and as the ground is not hard she did herself no harm. I do not think any vessel ought to go there drawing more than ten feet six inches, though many do so.

With a S.E. wind I would not advise any one to run for the coast unless the weather promises to be quite fine; with the wind from the N.E. round to the northward there is pretty good anchorage in five or six fathoms, just outside the southern bar; you will be sheltered by the bank to the N.E., and if the wind come round to N.W. you may enter—but beware of a south-easter. There is plenty of room for a fore and aft rigged craft of little water to beat over the bar, but the current generally runs too strong with the wind. According to the pilots, this southern bar is nearly in the same position that it was about fourteen years ago; and that it gradually moved to the N.E. until it got close to the shore, about two miles to the N.E. of the tower, when (as we have seen) it closed up, the bank at the same time opening out again to the southern. I should therefore suppose it likely that this would do the same.

I remain, Sir, your most obedient servant, JAMES HARRISON.

[In March, 1837, being in sight of the little island of Trinidad, (South Atlantic,) I was called to look at an enormous fish, which was close under the stern. The weather was very fine, and wind light, ship not going more than two knots, with studding sail set; so that I had a good view of it for about two hours. As I had not heard of anything like it before, I took a sketch of it. In shape it was exactly like a skate, but about twelve feet (as nearly as I could judge) in breadth. Its tail

was very long, and tapering; and its head had two substances projecting from it, very much like two moderately-sized cow's horns. We tried to harpoon it, but without success. Indeed if we had, I do not suppose we should have been able to hoist it in on account of its weight. He was surrounded by pilot fish, one of which kept continually between his horns, following his motions almost as exactly as if it had been part of the same body. Whenever this pilot fish left its station another immediately popped into it. On my return home, as I was looking over some of "Chambers' Edinburgh Journals," I found this animal very exactly described, (as a rarity,) and called the "colossal ray." (See Chambers' Edinburgh Journal, No. for July 16, 1836.) I saw no fins. Colour like a common skate, and belly very white. It did not seem able to swim fast, as when the breeze freshened a little, and we went about four knots, we gradually left it astern.—J. H.]

EXAMINATION OF THE PACIFIC OCEAN.

THE discovery of the Pacific Ocean gave rise to a thousand hopes. It was believed at first that on its coasts would be found a fairy-land, where gold and silver were used in making the commonest utensils, and the greater part of the expeditions sent there, had no other object than that of extorting from the natives, to obtain their riches, or to cruize in the most frequented parts to intercept and plunder ships as they returned to Europe, with their valuable cargoes; and strange to say, all this was authorized by their government. Thus, no sooner was this ocean known than it became the scene of frightful crimes, fire and plunder devastated its shores, until a reaction took place, and science and art extended their happy influence everywhere, and inspired the government with sentiments of compassion and humanity. It was then discovered that it was better to cultivate the relations of commerce with the inhabitants of foreign countries than to ruin them; and better to instil into them a taste for the arts than to rob them. Consequently, violence and plunder gave place to enterprises sufficiently venturesome, but better adapted to advance the good of mankind. Some parts of Australia and New Zealand were then known, but they were unconnected; no one had yet defined the precise outline of those countries. It was believed that they were connected with a great southern continent, and this idea having been received with enthusiasm, new expeditions successively departed from England, under the command of Wallis, Carteret, and the celebrated Cook.

Nothing can be more interesting than the accounts of these navigators. An inexpressible charm and freshness of colouring prevails throughout their descriptions. They speak of pure skies, magnificent vegetation, delightful climates, the balmy wind, groups of islands, inhabited by people who know no want but that of so limited a cultivation as to have nothing to send to the people of Europe. Everything is described in rich and varied colours. The engravings which accompany these productions, although coarse, afford ample details and a thousand particulars which convey to us the character of those

distant lands, with an exactness which the most elegant and finished pictures of our modern artists do not possess.

But, it is strange that no one, from Magellan to Cook, attempted a new route; it would seem as if they each determined to follow the same inconvenient and circuitous path which had been adopted by their predecessors; that no desire of renown, no love of adventure, induced any one to deviate from their tracks. After having doubled Cape Horn, all steered to the northward along the coast as far as the isthmus of Panama: then going westward, they crossed the ocean towards the Marianne islands, leaving the Sandwich islands either to the northward or southward. The similarity of these routes to that of Magellan does not stop here. We know that this hardy seaman perished in a strife with the natives of the Phillipine islands; and that in consequence of mutiny among the crew of his vessel, one* only of the ships composing his expedition returned to Spain. Likewise, of the most remarkable expeditions which took place after the death of Magellan, none returned complete to port, and in the mutinies which occurred in them the greater part of their leaders perished. Loaisa, Delcano, Saavedra, Villalobos, Le Maire, Mendana, all fell by the hands of their crews. It may be seen also that none of these navigators attempted to determine his positions with exactness. Thus, Mendana, after placing the Solomon Islands 5° too far to the eastward, could not find them again; while others made the dangerous archipelago, a vast continent, the extent of which was many thousands of square miles.

It was the celebrated Captain Cook who first corrected these errors. Cook was the first who constructed a good geographical chart of the Pacific ocean; the number and extent of his voyages; the correctness of his charts; his humane conduct towards the natives of the islands which he visited; and the important changes which he introduced into the provisioning of his crew, opened new destinies to the navigation of these seas: the first from Magellan, who forsook the former tracks, he traced out new passages and sought new countries, which claim for him a place by the side of Magellan and Columbus.

The example of Cook was worth following; but, notwithstanding this, like the navigators who followed Magellan, all those who succeeded Cook adhered to his track. They stopped at the Polynesian islands, (a description of which he had already given,) and left us in a state of entire ignorance concerning a large number of islands to which their predecessor had not devoted his attention. We have not yet had a good chart of the Feejee islands, nor of the Navigator's group, nor of many islands of the Caroline group, nor the extensive coast of Papua, nor the archipelago of the Louisiade. La Peyrouse, D'Entrec-

* [This was the first ship that circumnavigated the globe: her name was "Victory."
—Ed N.M.]

asteaux, and their successors, have taught us nothing that we do not find in the voyages of their predecessors. Some of these navigators had not even the good taste to correct the errors of the old charts. The Russian navigator, Lizianski, remained several days at the Marquesas, without attempting to make a chart of those islands; while Kotzebue passed near two islands in the night, of which he knew nothing, and did not think fit to examine. In fact, even now there are more than 200 islands, visited by whalers, that are not to be found on any chart; and this sea, so full of shoals and unknown islands, is nearly everywhere dangerous to navigate.

Nevertheless, the greater part of the known islands of the Pacific, contains a considerable population to whom the articles of our manufacture become every day more necessary. France, England, and the United States, send whalers among them every year. In 1814, there were thirty English ships which returned with 8,999 tons of oil and spermaceti: thirty-four sailed in 1816, and returned with 10,332 tons; in 1821, fifty-five ships, manned with 1,396 seamen, returned with 14,398 tons; and in 1823, fifty-nine ships, containing 1,536 men, returned with 17,689 tons. In France this employment which, during the Revolution, was not followed at all, sends now from fifteen to twenty ships to the Pacific. Even the number of the American ships is augmented. At present, the whalers from the United States in the Pacific, amount to 460 sail, which collect together 172,000 tons, the tenth part of the whole tonnage of that country. The produce which the United States obtain each year from that part of the world, is, besides an inexhaustible source of profit for their commerce;—spices, cochineal, sandal wood, and at thousand other costly articles, the trade of which generally returns good profits.

As those most interested in the commercial explorations of the South Sea, the Americans ought to endeavour to remove the numerous impediments to navigation there, which they are now about to do. They are at present fitting out one of the most important expeditions which have yet gone to the Pacific. This expedition, consisting of several vessels, and conducted by the most distinguished officers of the American navy, has for its principal object the visiting of places least known, to examine and lay down precisely every island or rock which may either be a source of profit or danger to commerce; and to take the necessary measures at every anchorage, to recover from slavery the unfortunate seamen which may be detained as prisoners* among the natives. In some of these islands men of the United States and of the civilized states of Europe, profiting by the advantage of their education, exercise a tyrannical autho-

* The number of these unfortunate persons is considerable, the greater part being English and Americans. Cast away by storms on the islands, they are retained as prisoners, and in some, undergo much privation and cruel treatment.

riety* over the inoffensive natives. The expedition will put a stop to these abuses, by removing from these countries the scourge of such men, and delivering the unfortunate foreigners from the severities of the natives. But the work of the American expedition will not end there. Science will form the leading feature of its operations. The most distinguished men of America are to accompany the voyage, and in this respect no expedition, since the days of Cook, has promised so much. Each important branch of science will have its professor: geology, meteorology, zoology, the temperature of the air, the state of the barometer, the phenomena of electricity, the direction of the winds and currents, their force and extent, meteoric stones, &c., will each be studied with care. The natural history of the Polynesian islands, although so much written on, leaves much to be described. It is not yet known distinctly by what process these islanders cure their fish and preserve their insects, which subjects will be carefully studied. The same of the fossil rocks and mountains, their height and conformation; the rising or depression of the coasts, &c.; the animals and plants, &c., the tides; and, in fact, the character of the natives of the Pacific generally, their manners, monuments, language, antiquities, religious ceremonies; the names and the number of their deities; their forms of government and system of navigation; their attainments in astronomy; the division of their calendar; their mode of tattooing, and their laws concerning property. All these branches will become equally the particular object of study, with the view, not only of extending the field of knowledge, but of cementing still more firmly the foundation of that which is already acquired.

[The foregoing is from the "Annales Maritimes," and refers, we believe, to the same expedition to which we alluded in p. 753 of our volume for 1836. We trust that the report which reached us a few days ago about its being abandoned is without foundation. Truly our American friends take no little time to get their steam up, but we are still in hopes that the bright promises so long held out will be fulfilled.—
Ed. N.M.]

CUNNINGHAM'S CATAMARAN.

THE Catamaran consists of two copper boats, perfectly air-tight, and strongly joined together, as in fig. 4. Between them is an iron or copper cradle, (see fig. 3.) DD is the inside view of one of the boats; AA is one of the frames of the cradle, furnished at the bottom with a flat iron sledge, and sliding freely in the slides, BB. The bottom of the cradle is grated, and upon this the man stands: his weight being thus considerably below the centre of gravity, and acting as a lever, and the two boats in opposition to each other, the possibility of upsetting

* These men, like the former, belonged mostly to shipwrecked whalers. On this subject, Reynolds reports that one of these men behaved in the most shameful manner to a missionary, because he refused to obey him in expunging the ninth commandment from the Decalogue.

is almost entirely removed. As the catamaran is represented in fig. 3, it is afloat; but when it takes the ground the cradle slides up, and the bottom coming on a level with the bottoms of the boats, its passage over sand or shingle, when beached, is very easily effected.

Fig. 3.

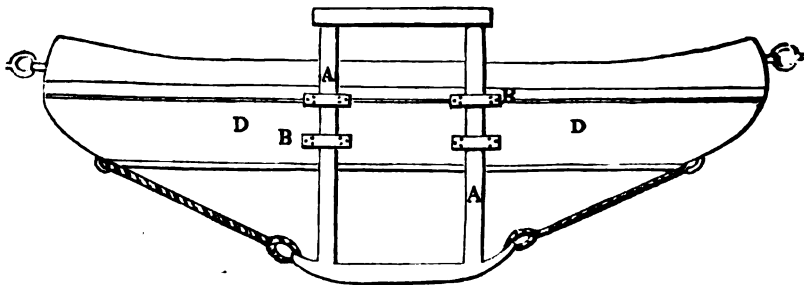
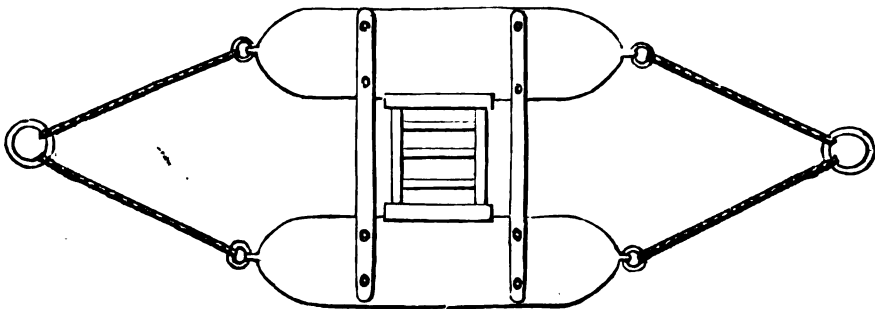


Fig. 4.



After the line from the gun has taken effect, the catamaran is first hauled off by those on board; another rope attached to it being held by those on shore; after that it must depend on circumstances, the manner in which the communication is conducted. The catamaran will hold two or three persons, and is placed or carried in the life-boat when the machine is travelling. If used at night a light may be attached to it, as in the life-buoy.

H. D.

[A drawing of Cunningham's life-boat, to which the foregoing article belongs, will be found in our March number, accompanying the description in p. 179.]

LIGHTNING CONDUCTORS FOR SHIPS.

MR. EDITOR.—In justice to myself and the naval service, I must point out Mr. Roberts' great misapprehension of the question relating

to the use of "Lightning Conductors in ships," a subject he has undertaken to elucidate. It may be first observed, that the opinions he has adopted, respecting my system, have been already laid by him before the public. They appeared in the "Annals of Electricity" in October last, have been since promulgated through the provincial press, and are again served up, with some additional statements, not original, in the "*Nautical Magazine*."

Mr. Roberts, you will observe, assumes, in the observations he has made, that my discussion of objections raised "to the use of my apparatus," applies to "a paper submitted by him to the Electrical Society" in June, 1837; and he further says, in page 188, "My objections are classed by him (Mr. Harris) under the head of," &c. &c. Now I beg to state, for the information of your readers, and the especial information of Mr. Roberts, that the series of papers he alludes to is merely a reprint of those given in your pages in the year 1834. Hence it is quite impossible that anything I have advanced in them could be intended as a reply to Mr. Roberts' paper in 1837. Had such been the case, I trust I should have had the candour to have acknowledged it. If, therefore, the objections considered by me, are, as he states, "precisely in the order and nearly in the words that appear in his paper," I leave it to any one to say whether in this indirect charge of uncandid plagiarism made against me, he has not most effectually pleaded guilty to it himself. He has, by his own confession, brought forward objections in June, 1837, "precisely in the same order, and nearly in the same words that appear" in my papers in 1834. A most marvellous coincidence truly—clearly showing that the objections have not even novelty to recommend them, and that they have been anticipated by me at least three years.

Mr. Roberts' communication to the Electrical Society, in June, 1837, claiming to be considered as a philosophical paper, will not, on examination, be found deserving of such a title. It does not really contain any original thought, any new result in science, any objection to my views not long since disposed of. Even the form of lightning conductor described in it, has been long since used in the French navy, and was fitted in the French frigate *Calypso*. It was applied along the masts and rigging "precisely in the order and nearly in the same" way as that mentioned by Mr. Roberts, but with this exception, that the rigidity of the wire rope, small as it was, did not admit of its being rove through blocks in the way he suggests. The only part of this plan, therefore, which Mr. Roberts can justly claim, is the impracticable part, and for this, I suppose nautical men will not consider him entitled to much acknowledgment.

In supposing that the phenomena described by Professor Henry escaped my attention, Mr. Roberts again greatly deceives himself.

To use his own words, I have not "committed unconsciously any error" in this respect.

Professor Henry's experiments, as admitted by him, do not furnish any argument against the use of lightning rods. This he expressly stated at the last meeting alluded to, of the British Association. I have the pleasure of being well acquainted with Professor Henry, and he carefully explained to me, that the small discharge observable in the way stated, was a peculiar effect of induction upon a wire, when sparks of an electrical machine were thrown upon a ball terminating one of its extremities. It could not be produced by means of a dense discharge from a battery or jar, or the discharge of any accumulation similar to that of atmospheric electricity. To obtain the result arrived at by Professor Henry, the wire must be placed *beyond* one of the opposed surfaces of accumulation, not in the position of a discharging rod. Then if sparks from a machine be thrown upon a ball at the end of it, an inductive action ensues upon the wire, such, that its own electricity is displaced (by a well known law of electricity) upon other bodies, the latter being previously neutral, and susceptible of this effect. Now when we attempt to discharge a dense accumulation between charged surfaces, such as that of a thundersform, we have already displaced the electricity of the bodies in the circuit, by a general induction on the negative side. Hence the result alluded to by Mr. Roberts is not obtained; all the surrounding bodies being in the same electrical state, they cease to operate in this way on each other.* It would, I am sure, add much to Mr. Roberts' knowledge of this question, which he has undertaken to make so clear, and greatly assist him "in solving the embarrassment under which (as he supposes) we labour," if he would himself repeat these experiments, and institute some further examination of them. The following result shows how little we have to apprehend from the kind of action he thinks may take place in the discharge of lightning along conductors.

Let a small metallic rod pass through percussion powder, or in the vicinity of it. Discharge over this rod the shock of a battery highly charged. The percussion powder, so readily inflammable, will not in the slightest degree be affected, which could scarcely be the case if there existed any lateral effect similar to that alluded to. I would further refer to the experiment described in your number for December, 1837, page 828. In this case pointed wires with percussion powder and common gunpowder placed between them, were inserted inside the model. The inflammable matter remains undisturbed by any shock of electricity passed down the conductor outside, even by

* See *Nautical Magazine*, No. 7, p. 451, for July, 1837, and No. 8, p. 534, for August, for a more complete explanation of these effects. In a future number I hope to return again to this subject.

a shock which can fuse from ten to fifteen feet of fine iron wire in one length. Surely Mr. Roberts must acknowledge this to be a fair experiment, and quite applicable to his weak argument about the magazines. He evidently confounds the mere displacement of the natural electricity of a wire under some peculiar circumstances, with a lateral discharge of lightning, never in any case observed to happen from a free conductor.

I hope in a future number to describe two interesting cases of the effects of lightning on shipboard, quite conclusive on this point. Indeed it will be invariably found, that where damage arises, it always happens in the track of the explosion, and never by any side action. Mr. Roberts says, it is well known. If so, why does he not state an instance? If the facts were really applicable to the argument in the way assumed, then I should contend strongly for the propriety of laying aside the use of lightning conductors altogether. Mr. Roberts is really arguing against himself. He tells us that in discharges of lightning the electricity may jump as it were out of the conductor, and set fire to inflammable matter; and with this fearful impression fully before him, he directs a metallic rope to be placed in the vicinity of the rigging and sails of a ship, immediately amongst the seamen, who are to handle it: in short, he leaves nothing undone (by his own showing) to set fire to the ship aloft, and destroy the men.

I beg to assure your readers that I took very especial care, before proposing my system, to assure myself, by a course of faithful experiments, and a laborious examination of the effects of lightning, that no action of this kind ever took place, so that Mr. Roberts has been too hasty in contrasting my unconscious ignorance, as he would have it inferred, of a simple truth in electricity, with his own more acute and profound perception of the facts adduced from others. If he will refer to the note at the foot of p. 454, of your number for July, 1837, he will perceive, that the consideration of this subject has not escaped me. The point is fully alluded to, which he flatters himself I have so "unconsciously omitted to consider."

I do not deny having stated that the surfaces of metals conduct electricity. Does any one doubt this? I do, however, deny ever maintaining it as my opinion that electricity did not also affect the mass. How otherwise could we explain the fusion of wires by electrical discharges? All I insist upon is this—the greater the extent of surface into which you can expand a given mass of metal, the less the tension of any quantity of electricity disposed on it, and consequently the greater its electrical capacity. The tension, in short, decreases as the square of the surface inversely. What Mr. Roberts has advanced about conduction seems something like an alternation of my "own words," as before. I do not stop to discuss his observations

about the cooling of the metal ; it is really not worth while. He is quite welcome to any advantage he thinks may be derived from such sophistry. Has he ever tried the effect of electricity in fusing a given mass of metal under the form of a surface and a rod*—the greater difficulty of melting it in a cool than a hot medium? Why does he not give us some facts connected with so important a question, instead of talking about them hypothetically on the authority of others?

I do not know how Mr. Roberts estimates the elasticity of a spar. It seems, however, very difficult to infer from my experiments in the Portsmouth dock-yard, given in your number for December, p. 829, that a spar suffers in this respect by the application of the conductor. It must be, I think, admitted, that the elasticity, or "pliability," as he also terms it, of a spar, is fairly estimated by the degree of flexure it can sustain without breaking, and not (for any nautical purpose at least) by the smallness of the force required to bend it, otherwise we might contend for the propriety of making masts of whalebone. Now the spar fitted with the conductor could not only sustain the same degree of flexure as before, but could, without breaking, withstand a greater force : how then is the spar damaged? † Mr. Roberts might as well contend, that the rigging injures the pliability of the spars. Really this is quite trifling with science. It is raising up phantoms, and dignifying them with the name of objections.

The remark of Mr. Roberts, that the elasticity of spars is essential to fast sailing, I leave to naval men to discuss. He must not be surprised should he find many differ with him in this point, and who, on the principles of nautical mechanics, will contend for the propriety of ships being always kept upright, and driven along (were it possible) by sails, as rigid as boards, acting upon inflexible masts without rigging.

Since you have thought fit to insert Mr. Roberts' communication, I trust in justice to me you will also insert my first reply to it. I can assure Mr. Roberts that I am quite as anxious as he is for truth and the "public good," and certainly as "little desirous of personal aggrandisement." Being quite ready to abandon anything I have advanced when it is shown to be inconsistent with facts, he will, I hope, excuse my saying, that any communication about a scientific subject, in which pretension takes the place of originality, and sophistry that of argument ; and in which unmeaning compliment is substituted for candour, can never advance truth or benefit mankind.

* Mr. Harris is by no means open to the charge of having applied conductors to ships, on the erroneous supposition that their solid content need not be considered as stated by Mr. Roberts, in page 186 of our March number. A reference to Mr. Harris's papers, and particularly to that in No. 11 for November 1837, will show that this charge is without foundation.—See also Phil. Trans. for 1834, p. 2.—[Ed. N.M.]

† We have already pointed out this experiment to Mr. Roberts.

[The following is the reply of Mr. Harris to the Editor of the "Annals of Electricity," as it appeared in the pages of that journal, and which in justice to this gentleman we here insert. As a wrong impression may be produced by a passage in Mr. Roberts' letter in our last number, which he could not have intended, we may briefly state that in the instance stated in page 187, of most serious injury arising to a sailor leaning against a mast through which the lightning was transmitted, given, as he says, by Mr. Harris himself, it should have been also stated that the mast was not protected by Mr. Harris's conductors. We may leave the practical application of Mr. Roberts' chain conductor to the consideration of any of our nautical readers, the principal points being the weight of it hanging from the truck, its interference with the rigging and sails, and its insecurity from the effects of the sea perpetually washing against the lower end, proposed by Mr. Roberts to be secured to the bends.—
ED. N.M.]

ON THE PROTECTION OF SHIPS FROM LIGHTNING. BY W. SNOW
HARRIS, ESQ. F.R.S., &c.

Dear Sir,—The best reply to Mr. Roberts' remark on my method of defending ships from lightning, and which appeared in your last number, is an appeal to facts. I may hence observe, that my system has been partially adopted in the British navy in about eleven ships for as many years, comprising several line-of-battle ships and large frigates. These vessels have all been more or less exposed to lightning, and cases have occurred in which the electric discharge has fallen heavily upon the masts without any ill consequences; nor have any results of a mechanical kind attended the application of my conductors detrimental to the masts; on the contrary, the spars are greatly improved in strength by them. I extract, for the information of your readers, from the "Nautical Magazine," the last report from the *Beagle*, lately returned from a five years' hazardous survey in the South Seas. This ship has again proceeded on another similar voyage with the same spars and conductors fitted in them:—

"Report on the Lightning Conductors of H. M. S. *Beagle*, 1831-6. Previous to sailing from England in 1831, the *Beagle* was fitted with the permanent lightning conductors invented by Mr. W. Snow Harris, F. R. S.

"During the five years occupied in her voyage, she was frequently exposed to lightning, but never received the slightest damage, although supposed to have been struck on at least two occasions.

"At each of these times, at the instant of a vivid flash of lightning, accompanied by a crashing peal of thunder, a hissing sound was heard distinctly on the masts, and a strange, though very slightly tremulous, motion in the ship herself, indicated that something unusual had happened.

"No objection, which appeared to me valid, was ever raised against them; and were I allowed to choose between having masts so fitted, and the contrary, I should decide in favour of those with Mr. Harris's conductors. Even in such small spars as the *Beagle's* royal masts and flying jib-boom, the plates of copper held their places firmly, and increased rather than diminished their strength.

“The Beagle’s masts, so fitted, answered well during the five years’ voyage above mentioned, and are now fit to go on another equally long voyage.”

(Signed) ROBERT FITZ ROY,
Late Captain of H. M. S. Beagle.

As one fact is worth a thousand theories or loose opinions, I should suppose this report must go far to meet Mr. Roberts’ assertion; namely, that “if my conductors were thick enough to be efficient, they would injure an essential quality of the mast.”

I do not by any means wish to set limits to freedom of discussion in scientific matters: science almost invariably gains by collision of opinion; but I may be here allowed to observe, that before any individual ventures to depreciate the invention of another, with the manifest object of a more complete establishment of his own, it is certainly his duty to make himself very fully acquainted with the subject. Mr. Roberts has not thought this, however, worth while; or, I am sure, he would not otherwise have so loosely adverted to my system, or attributed to me opinions which I have never professed to hold. I have nowhere maintained, for example, as my opinion, that “superficies, not content, conducts electricity;” nor have I, upon the validity of such a principle, let into the masts “strips of copper of little thickness.” If your readers will be so good as to refer to my papers in the late numbers of the Nautical Magazine, New Series, Vol. I., Nos. 11 and 12; or Old Series, Vol. III., Nos. 33 and 34, they will find my views on this point very sufficiently detailed,* and will see I have duly considered the mass of my conductors. Their thickness is about the same as that of the present chain conductors employed in the navy, and they contain twenty times as much metal. Their average value is that of an iron rod of more than two inches diameter, supposed to extend from the truck to the keelson of a frigate of 50 guns. Mr. Roberts does not inform us of the diameter of his wire rope; I should imagine it could not be considerable, in consequence of its great weight; he merely says, “let some hundreds of fine annealed copper wires be laid up, as a common hemp rope, &c.” an indefinite sort of expression, which may either apply to the cables or the signal halliards.

Mr. Roberts also greatly mistakes the nature of my plan, when he says, there “must be a separation” to allow of the mast being lowered; that is, if he means by this form of expression, a disjoining of any consequence to the action of the conductor. The contact, as may be seen by reference to my drawings, may at all times be insured, and that too without any difficulty. I do not myself believe, even if there did occur a short interval in the caps, that it would be of the least consequence to the action of such an extended and continuous line of

* See sections 65 and 73.

metal, armed with a point such as I employ, and which is always most perfectly continuous below the mast-head. Such a break, however, as that inferred by Mr. Roberts' observation, need not occur at all; it is scarcely worth while therefore to discuss the question.

I deem it requisite also to state, that if I have ever given an instance of serious injury "arising to a sailor leaning against a mast," it must have been a mast not fitted with the conductor. In such an instance it is evident the man's body became for a short distance the conductor to the mast; hence the electrical discharge led through the former, so far as it went.

I do not myself believe in what Mr. Roberts calls a lateral explosion; if by that, he means a divergence of the electricity actually transmitting by the conductor, from its determinate course. It has certainly no existence during the passage of heavy electrical discharges through metallic conductors of large electrical capacity. Any one may satisfy himself of this by discharging a powerful battery through a copper wire about one-eighth of an inch in diameter, or a small brass tube, held in the hand. I have myself repeatedly discharged batteries of 40 square feet of coated glass highly charged, in this way, without experiencing any sensible effect whatever.

I do not pretend to deny but that in every case of an atmospheric electric discharge, there is a general induction upon the whole mass of the vessel, as forming one of the great electrified surfaces. The distribution of its electricity, therefore, previously to the discharge, becomes changed; and will in all cases be again restored as the forces in operation become neutralized. Mr. Roberts should not be ignorant that this effect can in no way be got rid of, and that it cannot be fairly urged as an objection to my conductors. On the contrary, my system, not being confined to a mere wire line in the rigging, provides for an easy and rapid neutralization of the opposite electrical forces throughout the hull; a matter of very considerable importance.

Admitting the objection, however, of a lateral explosion to be a valid one, it necessarily applies equally, if not more forcibly, to Mr. Roberts' rope of wire, than to my plates of copper, as I think must be apparent; since the wire is directed to be laid along the back of the mast and stopped to the rigging, of course it must be liable to contact with the sails. What material, I would ask, is more likely to catch fire than a tarred rope or a sheet of canvass; we find this in numerous cases of damage by lightning at sea; as, for instance, in the cases of the *Thisbe*, *Phaeton*, *Southampton*, and other ships of the British navy.* It is, in fact, the liability of this kind of damage, though not from any lateral explosion, which renders the application of conductors of small electrical capacity to the rigging and masts, such as those commonly employed, somewhat precarious.

* *Nautical Magazine*, in the Nos. above-mentioned.

The objection to my conductors, on the ground of their being near the magazines, is certainly one I should not have anticipated, seeing that lightning rods are applied, either immediately or otherwise, within a few feet of almost every powder magazine in Europe. It is, in fact, because the masts (which are already, be it remarked, conductors of electricity to some extent) pass in that direction, that it actually becomes necessary to protect them by a conductor connected with the sea. For, as remarked by a practical writer on those subjects in the *Philosophical Transactions*, the danger is over when the electrical fluid has reached the well.

It is further a well-known electrical principle, that lightning will not leave a good and efficient conductor, immediately in the line of its action, to pass upon bad conductors, out of that line; a principle which quite vitiates an opinion advanced by Mr. Roberts, that every joint in a chain conductor becomes a point "where the electrical fluid may strike off in every direction." But the electric discharge is never found to strike off from the chain, if connected with the sea or ground. It invariably pursues its course down it, as may be seen by reference to the cases of her Majesty's ships *Ætna*, the *New York Packet*, and the *Plymouth Church*.* The danger here, is in the conductor being fused and disjointed at these points, and the temperature so raised as to set the rigging on fire. This would be very probable if the chain or rope employed as a conductor became detached from its connexion with the sea, or broken high up. It was from this cause that a discharge through a chain on board the *Lion*, of 64 guns, knocked down one of the quarter-masters on deck; and in a similar way a stroke of lightning came down the chain top-sail sheets of the *Ville de Lyon*, a large American packet, which lately put in here to repair the damage which ensued, and killed two men. We see, therefore, that since a conducting chain or rope is liable to every species of damage incidental to a ship's rigging, it may, at the time of handling it, produce fatal consequences to the seamen; it being then not a conductor in a free state, but approximating to an insulated charged conductor, ready to strike off to the next conducting substance.

It is not with any unfriendly feeling that I am led to express my surprise at the objections urged against my system by a gentleman who says he has turned "his attention to the subject, as well in a philosophical as in a nautical point of view," and who, whilst professing "by an examination of the causes, and a citation of a few effects, to solve the embarrassment under which we labour," fails in the course of his paper to produce any kind of "examination of the causes" whatever, any original inquiry in electricity, or any one accredited instance of damage by lightning, but substitutes for the essential ingredients of observation and experiment, either objections

* *Nautical Magazine*, in the Nos. above-mentioned.

not having even novelty to recommend them, or otherwise notions of ordinary electrical actions, not warranted by any known fact. It is even problematical whether the wire proposed by Mr. Roberts is available, in the way he recommends; at least it comes before us in so questionable a shape, that some sort of experience of it seems requisite to establish its value.

I must shorten this long communication by referring your readers to my papers in the Nautical Magazine; in which they will find my system very fully explained: they will then see that it is of a far different kind and tendency to that which might be inferred from Mr. Roberts' remarks. I shall merely observe, therefore, that it consists, 1st, in perfecting the conducting power of the masts themselves, by giving them conductors of great electrical capacity. 2d. In tying these conductors and the detached masses of metal in the hull, into one general system, and finally connecting the whole by efficient conductors with the sea.

The advantages of my system are these:—The conductor on the masts is always in place, and hence ready to meet the most unexpected danger; it does not require, like a chain or rope, a constant watching and attention, to the great annoyance of the seamen, but takes care of itself. The standing or running rigging is not in any way interfered with, and a very perfect continuity is arrived at, under all the varying positions of the mast. It is permanently fixed throughout its whole extent, gives stability to the mast, is continuous from the sea to the mast-head, and is connected with an adequate combination of conductors in the hull to satisfy the most powerful discharge of lightning yet experienced; it is capable of resisting great external force, and in case of the removal of any portion of the mast, either by accident or design, the remaining portion is always perfect and adequate to the required protection. It has further the capital advantage of being applied immediately to the objects most requiring it, namely, to the masts themselves, by which the conducting power they possess is turned to a beneficial account.*

Your readers will, I trust, perceive, that in replying to Mr. Roberts' paper, I have studiously adhered to facts, either depending on actual observation on the great scale of nature, or otherwise deducible from experiment; and they will, I hope, further do me the justice to believe that I profess to hold no opinion which can be fairly shown to be inconsistent with these two great oracles of physical science.

I am, dear Sir, yours, &c.,

WILLIAM SNOW HARRIS.

* Let a small iron wire be taken and the quantity of electricity measured just necessary to fuse it. Insert a similar wire from the same reel along one side of a small cylinder of wood in its ordinary state, and discharge upon this wire the same quantity of electricity. The wire will now remain perfect, being assisted by the wood, and will not become fused except by the addition of a very much greater quantity.

ON THE NATURE OF THE VEGETATION WHICH HAS COVERED THE SURFACE OF THE EARTH AT THE VARIOUS PERIODS OF ITS FORMATION.

CURIOSITY is one of the most essentially distinguishing faculties of the human mind ; one of those which specially separate man from the brute, and for this reason may be considered one of the most noble of those faculties, when it is dedicated to an object truly worthy of him.

It is this faculty which continually urges him to extend the field of his knowledge, and to search into the hidden mysteries of nature, though frequently without the hope of any other result than that satisfaction which every intelligent being feels in proportion as he gains more distinct ideas of the nature of the phenomena by which he is surrounded.

The more difficult it may be to comprehend these phenomena, or the more they are by their nature or position out of our direct reach, so much the more we are struck by the results to which those who have made them the objects of their study have been conducted by profound research. Thus the telescope, by presenting to our view the phenomena of the most distant regions of space ; and the microscope, by revealing to us the existence of an immense number of beings whose minuteness would otherwise have eluded our examination, have made the most lively impression on the imagination of man. In latter times science has made such progress that one could have scarcely hoped to strike into a new path so full of exciting discoveries as those which have been opened to human curiosity by the telescope and microscope ; and yet the study of the soil which we daily tread under our feet has become, during about half a century, in the hands of Werner, Cuvier, and a multitude of philosophers who have followed their steps in science, the most fertile in its results, and not only of great interest to the learned, but of a nature to strike the imagination of every person who loves to reflect upon the grand phenomena of nature.

In examining the strata which form the surface of the earth, their order of superposition, their nature, and the animal and vegetable remains which they contain, geology has attained the power of retracing the history of the globe during the long periods antecedent to its present condition ; it displays to us the succession of beings which have inhabited its surface and the revolutions which in causing destruction have produced the mineral beds, in which they are contained, and the modifications which the surface itself has undergone in consequence of these revolutions : in short, it proves to us that, all these phenomena, which necessarily required the lapse of many centuries to produce, existed before the creation of man.

This lengthened history of the formation of the surface of the earth, like that of the history of nations, consists of periods of repose, or at least

of tranquillity, sufficient to allow for the surface of earth and the water which in part covered it, to become peopled with inhabitants of various kinds. It comprises periods of revolutions, during which some mighty force overturning the surface, raised up the mountains, and submerging the dry land previously above water, raised up the bottom of the sea, and finally depositing on the previously pre-existing rocks, materials of new strata which enclosing the remains of beings that were destroyed by those violent convulsions, preserved them as precious monuments, to prove to us so many thousand years afterwards the nature of the ancient population of our globe, and the order of their succession. The study of these alternate periods of revolution and repose, create a lively and equal interest, but the former are entirely the province of the geologist, while the latter, on the contrary, necessarily demand the knowledge of the zoologist and the botanist, for they only are capable of making such exact comparisons between the same parts of fossils, and of living animals and plants, as may determine the links which connect the genera peculiar to each period of the world. Cuvier, by thus basing his admirable investigation of fossil bones on the positive data afforded by comparative anatomy, has been enabled to reconstruct the skeletons of most of the animals whose remains had then been discovered, and to determine with the greatest probability their external form and their analogy with animals familiar to us.

Though botany has hitherto furnished less evidence respecting the former condition of our globe, it should nevertheless be equally put under contribution by the geologist, and may even throw more light than zoology on the state of the terrestrial surface during the most remote periods of its formation. In fact, till that epoch when life began to display itself on the surface of the globe, all animals were confined, and were diminutive in size, to the waters; a luxuriant vegetation producing immense forests had already covered every part of the surface of the earth, which the sea left exposed; and each succeeding period of repose has had its peculiar vegetation more or less varied, and more or less abundant, according to the circumstances which influenced the development of those beings belonging to it; and, perhaps according to the duration of these periods, but each, almost always, entirely different from that of the preceding or following epochs.

Of those various groups of plants which have successively flourished on our globe, none deserves our attention so much, as that which appears to have first developed itself on its surface, and during a long space of time to have covered with dense forests those parts of the earth which had risen from the bosom of the waters; and the remains of which, heaped upon each other, have formed the numerous and extensive beds of coal. These after flourishing as forests, ages before the existence of man, have become, in their altered form, one of the chief sources of the prosperity of nations; supplying the place of our

modern forests which must otherwise be destroyed by the vast increase of population.

There can be no doubt, indeed, that coal owes its origin to accumulated masses of vegetable matter, which undergoing a gradual change became modified in the same manner as beds of peat would probably be if they were covered by masses of mineral substances pressed beneath their weight, and afterwards exposed to a high temperature. To be convinced of this it is sufficient to notice the ligneous structure which coal sometimes presents, and to examine the numerous vegetable remains contained in the masses of which it is formed. The study of the impressions of stalks, leaves, and even fruit, which are generally enclosed in such large quantities in these rocks, not only shows the vegetable origin of that substance, but it may yet lead us to determine the nature of the vegetables from which it originated; and which then consequently occupied the surface of the earth.

Among these vegetable impressions, the most common are produced from the leaves of the fern; but these ferns of the primitive world are not the same as those which now grow in our climates; for all Europe produces no more than thirty or forty species now, although at that time there were more than 200, all of which bear a greater resemblance to those formed within the tropics, than to those of temperate climates. Besides these leaves of fern the same coal formations contain stems, the dimensions of which are equal to those of the largest trees of our forests, while their forms are entirely different. Ancient naturalists, therefore, struck with this want of resemblance, and yet desirous of tracing some analogy between them and the vegetation of the actual world, have referred them to arborescent genera; as the bamboo, the palm-tree, or the great cactus, commonly known by the name of *cierges*. But a more careful comparison between the trees of the equinoctial regions, and those stems of the ancient world, is sufficient to do away the supposed affinity which was founded only on a fancied resemblance in the general appearance, and a closer study either of the stems or the leaves which accompany them, soon shows that the trees of which those primitive forests consisted, bear no real resemblance to any now found on our globe. The arborescent ferns, which, from the elegance of their appearance, now form one of the principal ornaments of the equatorial regions, are the only arborescent plants which are found, though few in number among the trees of that ancient vegetation. As for the other fossil stems, the remains of these primitive forests of the old world, we must seek for their analogies among the most humble vegetation of our own time.

Thus the *calamites*, which were from four to five metres in height, and one to two decimetres in diameter, have a close resemblance in every point of their organization, to the *equisetum*, or *prêles*, vulgarly known by the name of "*horae-tails*," which grow so abundantly in

the marshy parts of our climate, the stems of which, scarcely so thick as the finger, rarely exceed one metre in height; calamites were consequently arborescent *prêles*, under which form they have completely disappeared from the surface of the earth.

The lepidodendrons, the numerous kinds of which must have been most essential in forming the forests of that remote period, and which have probably contributed more than all other vegetables to the formation of coal, scarcely differ from our lycopodes. We perceive the same structure of the stem; the same ramification and leaves and fruit, strongly analogous to that tribe of plants. But though the lycopodes now living are small, and in general creeping, and somewhat like large moss, seldom reaching the height of one metre, and covered with very small leaves; the lepidodendrons, still preserving the same form and appearance, rose to the height of twenty or thirty metres, being at the base nearly a metre in diameter, and bearing leaves which attained sometimes to the length of a demi-metre. These were consequently arborescent lycopodes, which may be compared in size to the largest fir trees, whose place they held in the primitive world, forming, like them, immense forests, under the shade of which the ferns, then so numerous, were developed.

How different must that wonderful vegetation have been to that which at present clothes, with such a diversity of tints, the surface of the earth. Size, strength, and rapid growth were its essential characters; the smallest plants of our time were then represented in the most gigantic form,—but what simplicity of organization, and what uniformity, united to that astonishing power of vegetation!

In the present day in those places where man has not changed that which nature created, the eye delights to rest successively on trees which are immediately distinguished by their variety of form and colour of foliage, and which often bear flowers or fruits of many different colours. This variety of appearance is still more marked if our observation descend to the various shrubs and herbaceous plants, which grow on the border of our forests, compose our meadows, and display in their flowers almost all the prismatic colours. In fact, it follows from the diversity of structure among these plants that many may be useful for the nourishment of man or beast, and are even often necessary to their existence.

The various organization and appearance of the vegetation which now covers our globe, is indicated by the number of natural groups into which we may distribute them. These groups, or natural families, are about 250 in number, of which about 200 agree with the class of dicotyledones, which consequently present the greatest variety of structure, and thirty to that of monocotyledones. But the first of these classes, that is to say, the 200 families it comprehends, is completely wanting in our primitive flora: and there is scarcely found in it any indications of the monocotyledones.

The class which almost solely constituted the vegetation of the primitive world, is that of the vascular cryptogamic, which at present contains five families, to most of which there were corresponding genera in the ancient world; such are the ferns, the preles, and lycopodes. These families, if it may be so said, are the first step to ligneous vegetation: they present, like the dicotyledons or monocotyledons, stems more or less developed, of a solid texture, though more simple than those of our trees, and adorned with numerous leaves; but they are deficient in those reproductive organs which form flowers, and instead of fruit display organs much less complicated. These plants so simple, and so little varied in their organization, and which by their number and size occupy a very inferior station in our present vegetation, constituted in the first period of the creation of organized beings nearly the sum total of the vegetable kingdom, and formed immense forests, which have no analogy with our modern creation. The rigid leaves of these plants, the absence of pulpy fruits, and farinaceous grain, would have rendered them but ill adapted for the food of animals; but land animals did not as yet exist: the waters alone produced numerous inhabitants, and the vegetable kingdom then reigned without interruption on the surface of the earth.

In fact, it can scarcely be doubted, that the immense mass of carbon accumulated in the bosom of the earth in the form of coal, and proceeding from the decomposition of vegetables, which grew at that remote period on the surface of the globe, has been drawn from the carbonic acid of the atmosphere, the only form under which carbon not proceeding from the destruction of pre-existing organized beings can be absorbed by a plant. Now a portion of carbonic acid in the atmosphere, however small, is generally prejudicial to the existence of animals, particularly of the more perfect, such as mammiferous, and birds; but on the contrary, this proportion of it is very favourable to the growth of vegetables; and if it be admitted, that a greater quantity of this gas existed in the primitive atmosphere of the globe than in our present atmosphere, we may consider it one of the principal causes of the extraordinary vegetation of those remote ages.

This uniform vegetable creation which would have furnished such unfit materials for the food of animals of various structure, such as exist at the present day, would, by purifying the air of the excess of carbonic acid which it then contained, have rendered it fit for a more diversified creation; and if we yield to the sentiment of pride which leads man to believe that all things in nature were created for him, we might conclude that the first vegetable creation which preceded the appearance of man upon earth by so many ages, had had no other object but that of preparing a state of atmosphere necessary to his existence, and to accumulate those immense masses of combustible materials which his industry would subsequently turn to account.

But independent of that difference in the nature of the atmosphere, which the formation of these vast deposits of fossil coal renders extremely probable, might not the nature of the vegetables themselves which they have produced, furnish us with some views in regard to the other physical changes to which the surface of the earth was subjected during that period? What is still found in the various regions of the globe may throw some light on this question.

The study of the geographical distribution of plants belonging to the same families, which alone formed the whole vegetation of the period of the coal formation, may, in fact, point out to us the nature of the climate, and consequently the physical causes which are favourable either to their increase of size, or their great abundance; and we may conclude, with much probability, that the same causes ought to determine their preponderance at the present period.

We see, for example, that ferns, *prêles*, and *lycopodiacées*, attain a size greater in proportion as they grow nearer the equator. Thus it is only in the hottest parts of the globe that those arborescent ferns are found which combine the tall and majestic character of the palm-tree with the elegant foliage of the common fern, the existence of which, in the region of the coal formation, we have noticed. Here, also, the *equisetæ* and *lycopodia* attain a size double or treble that of the largest species found in temperate climates. Another circumstance appears to have still greater influence on their preponderance, compared with other tribes of plants, is the humidity and uniformity of the climate; circumstances which are found united in small islands far removed from continents.

In these islands, the extent of the surrounding seas produce an almost invariable temperature, and a constant moisture, which appears to favour, in a remarkable degree, the developement and variety of specific forms among the ferns, and similar plants; while, on the contrary, under the influence of the same circumstances, *phanerogamous* plants vary little, and are much less numerous. It follows, then, that while in large continents vascular *cryptogamous* plants, such as ferns, *prêles*, *lycopodes*, &c., often form scarcely a fiftieth part of the total number of native plants; in the small islands of the equinoctial regions, these same tribes constitute nearly half, and sometimes even two-thirds, of the whole of the vegetation.

The archipelagos, situated between the tropics, the islands in the Pacific ocean for instance, or the Antilles, are the parts of the globe which actually present vegetation the most analogous to that which existed on the earth when the vegetable kingdom first began to develope itself.

The study of those plants which accompany the strata of coal, would therefore lead us to conclude that, at that remote period, the surface of the earth in the countries where those vast deposits of fossil coal are found which are best known, that is to say, in Europe

and South America, presented the same conditions of climate which now exist in the archipelagos of the equinoctial regions, and probably differing very little in geographical configuration.

When we consider the number and depth of the strata which constitute the greater part of coal countries, when we examine the progressive changes which have taken place in the specific form of those plants which have produced them, we must acknowledge that this grand primitive vegetation must for a long period have covered with its dense forests every part of the globe which was elevated above the level of the sea, for it presents the same characters in Europe and America; and equatorial Asia and New Holland appear also to have participated in the general conformity of vegetable structure.

Nevertheless that first vegetable creation must necessarily have disappeared to give place to another, composed of beings of less extraordinary organization than the former, but yet as different from those which we see at present.

To what causes can we attribute the destruction of all the plants which characterize that remarkable vegetation? Is it to a violent revolution of the globe? Is it to the slow change of physical conditions necessary to their existence, a change which must have been partly owing to the presence of these vegetables? This is what we cannot determine in the present state of our knowledge.

Nevertheless it is certain that the deposit of the last strata of coal formation has been followed by the destruction of all those species which constituted the primitive vegetation, and particularly of those gigantic trees of singular structure, the lycopodia, the ferns, and arborescent prèles, or horsetails, essentially characteristic of the first creation.

After the destruction of that primitive and gigantic vegetation, the vegetable kingdom appears not to have attained the same degree of development for a long time. In fact, in the numerous strata of the secondary formations which succeed those of coal, we never find those masses of vegetable impressions, which forming a natural herbal in the ancient deposits of coal, prove the simultaneous existence of a prodigious number of plants, we scarcely ever see in these immense strata any combustible fossils; they are never of frequent recurrence, and have no great extent as in the coal, and are not extensive like those of coal deposits. It may be, that the vegetable kingdom really occupied but a circumscribed space on the surface of the earth, or that its scattered portions covered but imperfectly an unfertile soil, of which the revolutions of the globe had not permitted them to become quietly possessed; or, finally, that the peculiar state of the surface of the earth at that period may not have been favourable to the preservation of the vegetables which inhabited it.

Nevertheless that long period which separated the coal formation from the tertiary soil, a period which produced so many physical

changes of the globe, and which witnessed the appearance of those gigantic reptiles of the ocean, types of the whimsical organization in which we fancy we perceive those monsters created by the imagination of the poets of antiquity; that period, I assert, is remarkable in the history of the vegetable kingdom for the prevalence of two families which are lost in the midst of the immense variety of vegetables with which at this day the surface of the earth is covered, but which then exceeded all the others in number and size.

These are the coniferous, of which the fir, pine, yew, and cypress, furnish examples generally known, and the cycadæa exotic, less numerous in our present world than at that remote period, and which unite the coniferous structure to the foliage and appearance of the palm. The existence of these tribes during that period is the more important to show that, intimately connected by their organization, they form the intermediate link between the vascular cryptogamic plants, which almost wholly composed the primitive vegetation of the coal period and the phanerogames, properly called dicotyledones which formed the majority of the vegetable kingdom during the tertiary period.

Thus, to the vascular cryptogames, the first degree of ligneous organization, succeed the coniferæ and the cycadææ, which hold a higher place; and to these succeed the dicotyledones, the highest in the scale of the vegetable creation.

In the vegetable, as in the animal kingdom, there has been a gradual advance towards perfection in the organization of the beings which have successively lived on our globe, from the first which appeared on its surface, to those which now inhabit it.

In the tertiary period, during which was deposited the earth which now forms the soil of the greatest capitals in Europe, London, Paris, and Vienna, greater transformations took place in the organic world than any which had been effected since the destruction of the primitive vegetation.

In the animal kingdom, the mammiferous class is that which all naturalists place the highest in the animal scale, and by which nature appeared to introduce the creation of man. In the vegetable kingdom, the dycotyledonous order is the great division which botanists unanimously agree always to place at the head of this kingdom, and which by the variety of its forms and organization, by the size of its leaves, by the beauty of its flowers and fruits, must have stamped on all vegetation a very different appearance to that which it appeared to possess previous to that time.

The dicotyledonous order, of which only a few instances had appeared towards the close of this period, burst forth suddenly in great force; as in the present day it surpasses all the other classes in the vegetable kingdom, whether by the number and variety of species, or by their size. That group of plants which grew in those

countries during the deposition of the tertiary strata, and were enclosed in those deposits, bear the greatest resemblance to the mass of our present vegetation, and most particularly to the flora of the temperate regions of Europe or America. Those countries were covered then as at present with pines, firs, poplars, birch, elm, hazel, maple, and other trees, nearly the same as those which now grow in our climates.

Thus, not only are no indications of those extraordinary vegetables found which characterized the primitive forests of the coal formation period, but we also rarely meet with fragments of plants analogous to those which now exist between the tropics.

It must not, however, be supposed that the same vegetable formation would be perpetuated from that very remote period, since it preceded the existence of man, to the present day. No; the plants of our globe, geologically recent, but chronologically ancient, are distinguished by a marked difference from those contemporary vegetables with which we may class them; and the existence in the same formations towards the south of France, of some palms very different from those which still grow on the banks of the Mediterranean sea, and of a few other plants which belong to classes at present confined to the hottest regions, seems to indicate that at that period middle Europe enjoyed rather a higher temperature than at present; a result, besides, which agrees perfectly with that which may be deduced from the presence in the same formation and in the same countries of elephants, rhinoceroses, and hippopotamia animals, which are now seldom found beyond the tropics.

What an astonishing contrast between the aspect of nature during the later geological periods, and that which it presented when the primitive vegetation covered the surface of the globe! In fact, in the latter time of the geological history of the world, the earth had, in a great degree at least, already taken the form which it still preserves; tolerably extensive continents, mountains, already very elevated, decided various climates favourable to a variety of beings. Therefore, in a country of small extent, the vegetable kingdom presents to us plants as different from each other as at present.

To the conifères, with narrow leaves, hard, and of a dark green, are added the birch, poplar, hazel, and maple, with broad foliage of a fine green; under the shade of these trees, by the side of water, or on its surface, grow herbaceous plants analogous to those which at present embellish our plains by the diversity of their form and colour, and which that variety rendered capable of satisfying the many different tastes of a multitude of animals of all kinds.

The forests of the old world, like those of our time, were the resorts of a great number of animals more or less resembling those which still exist on our globe; thus, elephants, rhinoceroses, wild boars, bears, lions, and stags of all sorts and sizes, have successively inha-

bited them. Birds, reptiles, and even insects innumerable, complete the picture of nature, such as it appeared on the parts of the earth which were then raised above the waters; a nature as beautiful and varied as that which we still see on its surface.

On the contrary, in the first period of the creation of organized beings, the terrestrial surface divided, no doubt, into numberless islands, low and of a uniform climate, was, it is true, covered with a vegetation of immense size, but these trees differing little from each other in their appearance, or the colour of their foliage, destitute of flowers and of those fruits of brilliant colour which adorn many of our large trees, must have imparted to vegetation a monotony not even interrupted by those little herbaceous plants, which by the elegance of their flowers constitute the ornament of our woods. Add to this, not a mammifère, not a bird, in a word, not any animal enlivened these forests, and we then form a tolerable idea of that primitive nature—dark, silent, and dull, but at the same time so imposing by its grandeur and the place it held in the history of the world.

Such is the sketch of the great revolutions of the vegetable world, which inquiries made on the subject for thirty years enable me to trace.

Every day adds, no doubt, some new feature to these details, but recent discoveries, in confirming the results already obtained, appear to promise that the whole, as we have sketched it, will not undergo much alteration; when, thanks to the materials which will be collected on this subject from all parts, we may attempt a more complete and finished picture.

[The foregoing is a translation of M. A. Brongniart's paper in that valuable work, the "Comptes Rendus des Seances de l'Academie des Sciences," published weekly in Paris.—Ed. N. M.]

ON TOWING SHIPS.

WHEN a ship is dismasted at sea, and requires the assistance of some other ship to tow her into a place of safety; or when a ship of war loses her masts in battle, and requires to be towed into a position where her services may be required to oppose an enemy's ship; it is then of some importance to know something of the theory of towing, in order to estimate the amount of assistance that one vessel may afford to another, when *time* and *space* are involved in the operation.

When a ship is either driven or drawn through the water with a uniform velocity, the resistance which she encounters is always equal to the motive power. The resistance increases with the velocity, and is proportional to its square; and since the propelling power and the resistance are equal and opposite, we may substitute the one for the

other in our computations. The rate at which a ship moves through the water will be as the square root of the power by which she is propelled. A sailing vessel, with 1,000 yards of canvass set, and trimmed to a given angle with the direction of the wind, may sail at the rate of five miles per hour; but in order to increase the rate of sailing to ten miles, 4,000 yards of canvass must be set; because the ship will then encounter a fourfold resistance in doubling her velocity, and a fourfold force must be employed to overcome it. When one ship takes another in tow, a portion of the propelling power of the wind upon the sails of the ship *ahead*, is transferred by the tow-rope to the ship *astern*. For example: a vessel going at the rate of five knots, with 1,000 yards of sail set; her resistance encountered and sail set balance each other; but if she take a similar ship in tow, her velocity will be diminished; let, however, another 1,000 yards of sail be properly set, and the velocity will again be increased to five knots. If *three similar ships* were all taken in tow at the same time, and 4,000 yards of sail set upon the headmost ship, the four vessels would go at the rate of five knots, because the resistance being fourfold, the propelling power, or sail set, would also be fourfold, and three-fourths of the propelling power exerted by the wind upon the sail set in the ship towing would be transferred by the tow-rope to the ships *astern*, and their united resistance would be measured by the tension on the tow-rope. Let, however, the tow-rope be cast off, and the ship *ahead* would increase her velocity to ten knots, and consequently quadruple her former resistance, all other things remaining equal.

In order to compute the rate at which one ship may tow another, it is necessary to know their magnitude, width, and form. The area of sail, and area of midship section below the water-line, must also be given. A large cutter of 160 tons, in a strong wind abeam, will tow a dismasted ship of 120 tons, at the rate of three miles an hour; and an eighteen-gun sloop at the rate of six knots: but the three-decker, in a breeze that would propel her 10 knots, would tow the *cutter* at the rate of $9\frac{1}{4}$ knots, and the *sloop* at the rate of 7 knots under similar circumstances.

Steam-vessels, in their passage through the water, are resisted in the same way as sailing-vessels, but instead of being propelled by the force of the wind impinging on their sails, they are urged through the water by forces resulting from the successive strokes of the paddle-boards, revolving through the fluid. Now, the actual resistance encountered by a steamer is just equal to the propelling power of her paddles; and since ship and paddles move in the same fluid, their relative velocities are directly proportional, so that in calm weather and smooth water, the number of revolutions of the paddle-wheel is a correct measure of the steamer's velocity, when all other things remain equal. The *horse-power* of a steam-vessel is measured by the size of her cylinders, the rate at which the piston travels, and the

expansive force of the steam acting upon the piston. Now, in order to double the velocity of a steam-vessel, the *horse-power* cannot be increased eight-fold; because, in doubling the velocity through the water, the vessel will experience a fourfold resistance, which the engine must overcome; and to do this, the velocity of the piston must be doubled, and the force exerted on its piston quadrupled. Hence it results that the velocity of steam-vessels is as the cube-root of their *horse-power*, when other things are equal among themselves: thus, a steam-vessel like the *Messenger*, may go at the rate of 8 knots with a power = 216 horse, and would be propelled at the rate of 4 knots by a force = 27 horse, under similar circumstances, and immersed to the same depth in the water. We see, then, that steam-vessels, when moving with small velocities, may have a very great power in reserve, *disposable*, and *transferable* by tow-ropes to ships requiring their assistance.

The weather may be so boisterous, that the whole power of a steamer may be insufficient to oppose the force of the wind and waves; and it frequently happens that the force of the wind upon a steamer, and upon the hull and rigging of a ship in tow, is only balanced by the power of the engines. The following table may be of use in practice: it was calculated on the supposition that the steamers would go nine knots through the water, if free to move alone, and clear of the *tow*, and that the wind and waves neither impeded nor accelerated the velocity. Although there are but few figures in the table itself, it is the result of a good deal of calculation, since all the elements of the different ships had to be obtained, and involved with those of the steam-vessels. In each case, the area of the midship section below the load water line, has been taken as a *measure* of the resistance encountered in passing through the water; and although this measure may not be strictly a correct one, it is yet so near the truth, that the velocity will seldom be found to deviate one-tenth of that set down in the table. This assertion does not rest on theory alone, but is the result of experience and observation.

TABLE,

Showing the Rate at which Steam-Vessels may Tow a Ship of each Class in the Navy, in a Calm, and when the Steamer can steam at the rate of Nine Miles an Hour, if the Ship be cast off.

Ships to be Towed, and Steamers Towing	120 guns.		92 guns.		84 guns.		78 guns.		74 guns.		Rasil 60 guns.		52 guns.		46 guns.		42 guns.		38 guns.		18 Ship.		16 Brig.		10 guns.		Cutter guns.	
	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles
Steam-vessels, 220 H.P.	5.6	5.8	6.1	6.2	6.4	6.5	6.7	6.8	7.2	7.6	7.8	7.9	8.1	8.3														
Steam-vessels, 160 "	5.0	5.2	5.5	5.6	5.8	5.9	6.1	6.2	6.7	7.1	7.3	7.4	7.6	7.8														
Steam-vessels, 100 "	4.6	4.7	4.9	5.0	5.2	5.3	5.5	5.6	6.2	6.6	6.8	7.0	7.2	7.3														

The table was calculated on the assumption that the velocity will be as the cube root of the horse-power of the engines, and the resistance encountered as the square of the velocity, and directly as the sum of the areas of the midship section of the ship in tow, and that of the steam-vessel. Suppose, for example, that a ship was in tow of a steamer, and the resistance encountered by the ship was three times that of a steamer: then the whole resistance to be overcome would be fourfold. The power of the steamer, divided by 4, and the cube root of the quotient will give a number proportional to the velocity with which the two vessels will proceed together. Admitting that *the engines* continue to work at their full power, the area of midship section of a first-rate is to that of a large steamer nearly 3 : 1 ; consequently $\sqrt[3]{220} : 9 \text{ knots} :: \sqrt[3]{\frac{220}{4}} : 5,7 \text{ knots}$.

W. W.

OBSERVATIONS ON EUROPEANS IN INDIA.

THE state of European Society in India, forms a curious subject for the consideration of an attentive observer. It cannot but be soon apparent to a stranger landing there, unaffected by that "esprit de corp" which possesses almost every one who, until lately, went to India, (namely, Company's servants,) and which continues yet to act upon the great bulk; how completely they are immediately lost in selfish considerations; how "exclusive" they become; what extravagant notions they entertain of their own importance and service; and, how effectually they abandon most of the previous (and in many views the most valuable) impressions instilled into them by the superior education, which most, if not all of them, have unquestionably received. There is surely no other part of the world where self so completely destroys all other considerations. Europeans go out, every one of them, professedly to obtain as quickly as possible, the largest amount of retiring annuity, and many of course with much more extravagant expectations; the civil servants also to accumulate from their appointments; and in the mean time whilst they abandon all interest whatever in what is passing in Europe, (if they have not left too early to have ever entertained any,) they take none in what passes under their own eyes beyond that which contributes to their own immediate advancement; the interests of their masters, "the Company," or the good of the country in which they are living, being considerations foreign to them: they indeed acknowledge the truth, so much of all this, as to render the remaining part only the natural inference. But that such a degree of pride, folly, and ignorance, should prevail among them generally, is the more surprising, when it is considered that they are taken undoubtedly from the best class of society in England; and that an excellent education is required, as a matter of course, particu-

larly with the civil service. The good stock indeed from which they spring is very apparent in observing the society at any large assembly; a ball for instance—so excellent a specimen of British youth will not be met with anywhere else, but that their energies are paralyzed on arrival in India is certain; and it will not, I think, be difficult to trace this effect to its true causes. As a proof of the fact, how many out of this assemblage of fine well educated young men who arrive annually in India, has the history of the Company recorded, as distinguished for genius and talent? If we apply this scrutiny to the military branch, the result will be still less in their favour.

Were I to repeat the instances of want of information that I have met with amongst them, they would appear almost incredible. I could hardly obtain an intelligent answer to the most common inquiries; to such questions as any tolerably educated person in Europe could not be ignorant of respecting the country in which he lived; so limited is their information respecting a country which they are sent out to govern and defend, that a servant of the Company on the Madras establishment for instance, knows no more about the other provinces, nor troubles himself more about what passes in them, (unless the events are likely to lead to prize-money, &c.,) than he does about Kamscatcka. And to what is all this apathy to be attributed?

A youth destined for India is generally early in life, either given or promised his appointments; he is taught to look upon India as a field where he is to get-rich without trouble or exertion; to pass a certain portion of his life there in the utmost luxury; and then, to return home "a Nabob." This is so much a matter of course, that it may be considered the dream of every youth sent to India. Who ever heard of the higher considerations of honour, proper ambition, &c., being mixed up with this preparatory education? Every one devoted to India has his mind thoroughly imbued with the notion, that it is a country where he is to make his fortune, at all events, and his reading of the manner in which this has been accomplished by those who have gone before him, tends by the palpable covering which is given to the exact rectitude of these proceedings, (but to which, if a faint light of the real nature of these should break through he is ready to shut his eyes,) not to induce him to be too particular as to the means he is to use for this purpose. Arrived in India, he no sooner sets his foot on shore, than he is initiated into the indolent habits of his predecessors. Be the season of the year ever so fine and cool—and though a walk from the shore to his place of lodging would be a luxury, this can by no means be permitted: under no possible circumstances can a gentleman be seen to walk in the open air.

Now India, for one half of the year, is a delightful climate; the other half is like the hot, or rainy season, of other tropical countries. I remember landing one fine afternoon at Calcutta, when I ventured

to be so singular as to walk across the Esplanade, (the Hyde-park of Calcutta,) about the fashionable time of driving there, and with the coolies (porters) carrying my baggage. What was the consequence? I was stared at much the same as an elephant would be in the streets of London. I would not be supposed, however, to advocate that ridiculous "foolhardiness" which induces a person to expose himself to unnecessary danger from climate, or any other cause. I would have a man that can afford it, use a palankeen, or any other such luxury, upon the same principle that he would get into a carriage in dirty bad weather in England, merely because he chooses so to do. But why create and exaggerate difficulties, which, though unpleasant enough, are not nearly so bad as they are made; and would be, in fact, thought much less of if the Company's servants know anything of anything else but India, which they do not, generally speaking. Walking is out of the question with your "proper Indians." To say nothing of the thing being absolutely vulgar, it is thought that any exposure to the sun must kill a European:—how soldiers (officers I mean) are made; under such circumstances, is truly astonishing, and how they are to undergo service in the field is more so. The fact is, that the natural spirit and bravery of the English gentleman do, upon cases of emergency, rule the ascendant, and enable him to go through what he did not before think himself capable of. But a campaign (which as regards the European officer must indeed be a curious affair,) is, notwithstanding, the pretty certain death of a great portion of them, owing to the exposure and privations (comparative and imaginative) which they undergo. They are sickly almost universally, doubtless from the dread they entertain of the climate, added to their habits of living and want of exercise. It would afford a curious contrast to compare the number of their sick and the number that go home (to Europe) on sick certificate, or die outright from the effect of their habits, added to this fear of the climate; with the officers of the King's regiments in India. The men of the latter are seen doing duty and taking their amusements in the open air, and their officers also bear the climate, and not fearing it, consequently suffer much less than those of the Company's regiments. In fact, the former arrive in India with very different feelings to those of the latter, and will continue on service there any length of time without ever imbibing them.

The readers of the *Nautical* will perhaps allow me to enter into some more detail respecting these "soldiers," as there is something about them quite unique; something so different to the notion an Englishman forms of a military man; and first, as to their manner of living, their diet, and my remarks, will apply to all the Europeans in India, it is unquestionably the very best in the world—I defy the most refined palate to find any fault with it. To a lover of the luxuries of the table, in their most exquisite style, it is worth a voyage to India, to remain there the fine season, to learn what real good

living is ; for let him come from where he may, he will find in India something to learn in the gastronomic art. Such a mode of living is, however, unquestionably the very worst for the constitution that could possibly be devised, especially when coupled with the dread of moving about, which prevents all classes from taking exercise. In the cool season exercise is mostly confined to a carriage ride in the evening, and sometimes early in the morning also, at which time the air is the most delicious that can be imagined. Some few, indeed, do venture during the season to get upon horseback ; but generally speaking, a state of listlessness and torpor exists throughout the whole European population. The system of advancement by seniority which exists in the Indian army, is the root of all this want of energy in the officers. A youth must, indeed, be very curiously constituted, who will take any pride in a profession in which the utmost talent and zeal will not avail for his promotion in it. Such a system precludes any exertion even of common gallantry ; and to expect enthusiasm, the spring of action, and the life and soul of all splendid deeds, under such circumstances, would display a total ignorance of human nature. No :—the European officer of the Company's troops, is, indeed, quite another person. He arrives in India, and instead of the art of war, he studies the tables of averages of deaths and retirements, and consequent advancement of the juniors, among whom he may be ; and once appointed to his regiment, he can calculate the probability to a nicety of the rank he *can* retire with after a certain time. This point made clear to his comprehension, he endeavours to dispose of his time in the easiest possible manner, till the period of his permitted furlough to Europe or the Cape ; and if he be tolerably prudent, he will just contrive to make his pay and allowances (which are sufficiently ample) keep him out of debt ; getting leave from his regiment to pass a gay season at the presidencies as often as he can, or to be as much as possible upon the sick list, which relieves him entirely from all exertion. So much for the first part of the picture of a Company's military officer in India.

It is not intended here to reflect on the policy which has established the system, respecting the military branch of the Indian Government ; however, detrimental it assuredly is to the individual character of the officers. True it is they make a splendid display, especially at the presidencies, where of course a great number are always congregated. It ensures, if not a very zealous, yet a set of very quiet and well disposed officers : no aspiring, troublesome, over-talented people, are amongst them : they have a certain time to pass in the service, and like prudent men, they enjoy themselves as much as they can. Perhaps in point of fact they contribute by the splendour of their dress, appearance, and manners, as effectually to keep the natives in awe, as if they led a more military life with their regiments. This mode of *preamble* government by the military, has no doubt been, in

the wisdom of the Company, well considered and determined on ; though it may be at the expense of the military character of their servants. It may be fairly presumed, that the Company contemplated effecting more by show than by military talent in the formation of their army, and that they do not require their officers even to know the language of the Sepoys ; besides many other things. That they do not know it, is sufficiently proved by there being an interpreter appointed to each regiment ; quarter-master and interpreter being combined as a staff appointment, which being a desirable one, induces some officer, who has so much application about him, to qualify himself for it. The general neglect of attaining the least knowledge of the native language, appears to arise from the most unaccountable apathy, and renders it wonderful how the duty of a regiment can be carried on.

The Company's civil servants are, undoubtedly, very superior men. There can be no finer young man than a Company's civil servant as he comes fresh out of college to commence his career. But here again the enervating luxurious life led by his predecessors is such an example, that the chances are fearfully against his ever being what his education would justify one to expect. The advancement too of this class has hitherto been too easy ; too much matter of course, to encourage that proper sort of ambition which would prompt a well-educated youth to distinguish himself. The system, probably, will be much amended in the new order of things effecting in India ; and as the ground-work is so good in the civil servants of the Company, everything is to be expected from them. Their promotion should, as little as possible be dependent upon interest, and, however unpalatable it may sound, (to them,) their appointments should be more moderately lucrative. Whilst the advancement of a civil servant is so easy, and the worst situation almost to be obtained by this class, so sufficiently abundant, it is no wonder that even their highly qualified men have not realized all that might have been expected from them.

The Company's regulations, which prevent their servants from holding any real property in India, have mainly prevented them from looking on their sojourn there as anything else but temporary ; and further than this, the measure has made them strangers, as it were, and indifferent about the country in which they are to pass the greater part of their lives. The consequence of this has further been to throw the whole of the landed property in the neighbourhood of the residences of Europeans into the hands of clever rich natives, who charge whatever they think proper for house-rent, and which is consequently enormously expensive in India. The hire of servants is as bad, and they have had the address to lay their masters under a heavy tax ; it being a rule that no one servant can do two things. The number of servants necessary in a large establishment is thus enormous ; as a European can absolutely do nothing for himself—not even fill his

glass with wine, or pass the bottle afterwards. I remember a captain in the army, living in a very moderate style, with a wife and young family, but with neither carriage nor horses, (a rare instance of economy,) who was obliged to keep fourteen servants in his bungalow, (a small cottage-like house,) and which cost him, with house-rent, two hundred per annum. The houses and ground being thus hired at high rents, and for the most part (altogether so by the military) for very uncertain periods, no care is taken of them by the tenants. They are generally laid out with great taste, but, like everything else in India, are looked upon as merely for the use of the day, and form, what I could not help thinking, a melancholy picture. The park-like style of the grounds and the gardens, all suffered to go to decay, as well as the houses; which splendid as they universally are in their construction, invariably have about them something that denotes the occupant to take no interest in them. Madras is altogether in the country. The houses stand apart, and are situated in different sized fine enclosures, which approach in many cases to what may be termed parks, of a considerable area, and well laid out. Many of the residences about Calcutta come under this description also, but not so generally. Now all this is, notwithstanding, in strict accordance with the Company's policy. They have objected to the colonization of India, and they have taken effectual means to prevent it, by not allowing their servants holding any stake or real property in it. Their object has been so far attained—but perhaps not without an injurious effect on the capacities and energies of their servants.

Perhaps the best informed part of the Indian community may be looked for amongst the merchants, planters, and a few mariners, as the old phrase went. These are all men of enterprise; and as few fools emigrate, even of these few, assuredly none will be found among these classes in India. They come out with liberal and enlarged views, and the style of their operations has not the too common effect—with money-making people—of narrowing them. There is, however, one terrible error they (in common with the whole of the Europeans in India) have not resolution to avoid; an evil, the opposite virtue to which is so essential, to all mercantile men especially, viz. extravagance! This evil has so thoroughly possessed every one in India, it belongs, as it were, to the system, by which the country is or has been governed, that it is the current belief, *that expense cannot be avoided*. There is, indeed, such a fascination about the Indian style, and the splendour that surrounds everything, that it is an error more to be blamed than to excite surprise; and it would be a bold undertaking for a Company's servant to attempt its reform. But the merchants, and classes above referred to, are under no necessity whatever to give way to this unbounded extravagance. It is contrary to every acknowledged maxim and rule that should guide commercial operations. To a cool observer, it is almost frightful to contemplate the splendour

of the mercantile establishments ; houses which, in comparison, but a few years before, were considered as absolutely nothing. What the establishments of the late great houses of agency (as they are designated) were, can only be surmised at the present time : but judging from the buildings they occupied, and other circumstances, to form any notion of them, it would be well to keep in view such companies as the East India, in Leadenhall-street, and the Bank of England, rather than to form an opinion for comparison with any ordinary mercantile establishments. The branches of these firms in London were outrageously extravagant, but can have been only humble copies of the India firms. The existing mercantile establishments, are generally conducted on a scale of expense which nothing can justify. Most of them consist of a number of partners, seldom less than three, generally more. Of one consisting of the former number, it is confidently asserted, that including the living of the three partners, the annual charge on their business was at least 10,000*l.* ; which sum was indeed said to be too low. Now this house, though considered very respectable, has no pretensions to any large capital. What their extent of legitimate business may be, of course, cannot be stated ; but certainly no one can believe it to be such as to justify a rate of expense so enormous. To say nothing of the propriety to the individuals themselves most immediately interested, this extravagance should be reformed. It seems necessary, for the benefit of the trade of India generally, that it should be conducted upon more solid principles ; the whole system has hitherto been decidedly bad ; all those most deeply involved in it have been ruined ; and in proportion to the number that continue to follow the same system, will be the number that must experience the same fate. Business, to be conducted with advantage and security, must be assumed as returning moderate profits and commissions. The late establishments could not, (nor will it be denied, looking at the above instance of expenditure, and which is by no means a singular one,) the present cannot, exist upon such returns. Now, if really sound and solid commercial establishments should be formed (I don't mean to say absolutely that there are no such) with proper application of a sufficient capital, and an economical expenditure, what might not be expected to be the effect upon such a productive country as India is ? In one word, it would effectually compete, if not undersell, every other port of the world ; and the consequent consumption of imports, through the increase thus effected of the people's means to buy, would be incalculable.

It may not, perhaps, appear quite plain, at first sight, how a steadier and more economical system of business, adopted by the European houses in India, should have such important effects. The fact is, that in most cases the produce of India, exportable to Europe, has been cultivated more or less under the influence of the houses of agency, whose system has been found so ruinous, or under that of the

Company, which was perhaps worse ; the management of the concern in the country having partaken naturally, in a great degree, of the extravagance of their supporters. Let us take indigo for an example, the culture of which has been a constant source of ruin to those engaged in it. The merchants have (and continue to do so) constantly made large allowances to the planters, with a view of course to monopolize their produce and influence the prices. The planters, generally speaking, if not needy men, absolutely are so in reference to the capital their undertakings require ; consequently as the disposition exists to make these advances, and the actual amount of them, so is the probable quantity of indigo produced, and under such influences are the prices governed. The planters are almost entirely Europeans, and when it is considered that they have very large sums of interest to pay, (at the rate, even now of 8 to 10 per cent.,) and seeing that the lender has in a material degree the power of fixing the price of what is produced, more need not be said to show the extreme risk of such undertakings. But it effectually deters the natives from entering into the pursuit, which were they induced to do, by steady prices, only influenced by natural causes, the market and the cost at which they could supply it, would, it is clear, be cultivated at a price so infinitely below what it is at present, that nothing could stand in competition with it. The economy of these people's habits, and their consequent good management, enables them to produce the commoner and grossest articles, at a rate that is not to be met with anywhere else, and would apply generally if trade had its free operation. A further very important effect would be produced upon the commerce of India generally, by the adoption of a better system by the European houses ; namely, the confidence that might be expected to arise between them and the native merchants. At present this is altogether wanting. The natives having had their eyes opened by the failure of the great houses of agency, have no faith whatever in those that remain ; their constant (and very natural) observation being that of surprise, how these expensive establishments are upheld. It is even said that there are very large sums of specie hidden, for want of safe means to invest them. To compare the habits of economy of the native merchants of India, with any class of persons in England is difficult ; indeed, those who have not seen something of the same kind in other countries, can have no conception of it.

The three classes thus remarked upon, and which embrace almost the whole European residents of British India, form, however, altogether, a very delightful society : they are liberal and hospitable in the extreme ; their houses are absolutely open to strangers, with proper introduction ; and it is here only where one class of people, namely, the commanders of ships, are treated with common consideration. This feeling towards the commander of a ship, he will observe to commence at the Cape, as the outport of India, and his reception in all

society as he gets eastward, from the governor's table downwards, he will find most flattering. He is here considered in the light, which, if he has the manners of a gentleman, he should be everywhere, one of a class that has unquestionably the means of the most extended information; the commander of a merchant ship in India, is, in fine, in his true position, and it will be his own fault if he has anything to complain of. The society of India, I have said, is delightful; it is fascinating, and I do not wonder that so many of all classes have been spoiled in it, that they have forgotten themselves; and that it has almost invariably led to extravagance. A person must indeed be of a cold pleghmatic habit, that can remain altogether uninfluenced by the intoxicating nature of the liberal, fine, gentlemanly habits of the residents of India; and it is only to be regretted that they should have such a dangerous effect upon the newly arrived youth.*

PADDLE WHEELS.—*Unshipping and Disconnecting.*

MR. EDITOR,—In the March number of the Nautical your correspondent Mercator having remarked on my letter of January, in which were some observations on the sailing qualities of steam-vessels, and having also asked some questions relative to that subject, you will oblige me by allowing me to give the following answer to his observations. Your correspondent first complains, that he has not been informed, or, as he expressess it, “we are left completely in the dark, how the wheels are disconnected, or the boards unshipped.” That can be explained in a very few sentences. It is first necessary to state, that there is a pawl, which acts by means of a lever, for each wheel, by means of which pawl, it can be rendered immovable. Now to connect or disconnect, if you have a good pawl fitted, and are in smooth water, move the wheel back or forwards as necessary, (which may be easily done by the assistance of a couple of capstan bars,) catching it by the pawl, until the engineers have removed or put in the crank-pins. If either the weather is bad, or the pawl cannot be depended on, move and steady the wheels until they are properly placed by means of two tackle, one leading forward and the other aft. To ship or unship the paddle-boards, pawl the wheels, and if way is intended to be kept on the vessel, pass a lashing as a preventive round the segment of the wheel and the beam of the paddle-box: then ship or unship the floats as the case requires; cast off the lashing and force back the pawls. It is quite evident that it is only necessary to remove the boards from the lower part of the wheel. The plan followed is to unship the upper floats, and then turn the wheels round.

We come now to the next query. “How does he contrive to ship the paddle-boards on threatening weather increasing to a gale?” It is

* The sequel in our next.

certainly quite impossible to define when this evolution can be performed, and when not; but the commander of the steamer must use his own discretion; and it must not be forgotten that in a sailing vessel, prudence is necessary, in taking in sail, getting down top-gallant yards, &c., upon the appearance of a gale coming on. The worst weather in which the paddle-boards were ever shipped on board the *Dee* was in the bay of Biscay, on the 13th of March, 1837. In the log, it is called strong breezes and squally, with a heavy swell. The wind was from the eastward, and very cold, not at all favourable to men who had been nearly three years in the West Indies. Under these circumstances there was not found any real difficulty, although of course the business was prolonged above the usual time, and those employed got very wet; but to state exactly how much worse the weather must have been, to have rendered it impossible, is beyond my power. However, this may safely be conceded, that with such a gale, accompanied by the usual quantity of swell, in which a frigate would take in her fore and mizen topsails, no steam-vessel could ship or unship her paddle-boards. At the same time it ought to be recollected, that improvements in steam navigation are still going on, and that as yet the great difficulty in bad weather of placing the paddle-boards, has arisen from their size. But that is now much lessened by Mr. Field's new plan of having them in two parts (indeed both the parts are not so large as the old float by one-third.) This being the case, may we not expect such further improvements, so as to enable those concerned, to perform this evolution in anything short of a very severe gale, accompanied by a heavy sea?

Let us now examine what Mercator further says upon this subject; his words are, "another objection to this unshipping of paddle-boards is, the great difficulty in keeping them fast in their places, when fitted under the most favourable circumstances; that is to say, the vessel in a state of quiet, and the work deliberately done by engineers,—the same security could not be attained by a hasty replacing of them at sea." This has been advanced before, by others; but it is an entire mistake, which has arisen from not being acquainted with the details of the engineer's work. For it ought to be borne in mind that the great difficulty in bad weather, is to place the boards in their proper position. When this is effected it is very easy to tighten the screw bolts, by means of their nuts; indeed it may be asserted! that nothing is more likely to keep the paddle-wheels all right, than the frequent removal of the floats, because by so doing the engineers are in a manner forced to have the screws, &c., in a perfect state of repair. Now let us see if experience verifies this statement. During upwards of two years that the *Dee* was on the West India station, the paddle-boards must have been shipped or unshipped at sea, perhaps nearly a hundred times—sometimes at night, and although the steam was repeatedly up for six days, once for ten days, without

stopping, yet we never knew a float-work loose. Again, a very intelligent officer who served with me in the *Dee*, and who belonged to H.M.S.V. *Pluto*, while stationed on the coast of Africa, for nearly three years, informed me that their constant practice was to cruise with the paddle-boards off, and when they saw a strange sail, to get the steam up and ship. Yet no accident ever happened to their wheels. I think all this fully shows that this objection of your correspondent is imaginary.

Mercator goes on to state that, in certain situations, he sees no objection to the unshipping of the paddle-boards, and afterwards laments that there is no way of converting a steamer into a sailing vessel instantly; and further on we find him saying, "I can conceive no position a ship can be placed in, so trying as a steamer becoming suddenly disabled in her machinery, in a heavy gale, 'unshipping or disconnecting' (according to present fitting) being nearly out of the question." There is no doubt that all this is quite true. At the same time I have much pleasure in informing such of your readers who are in the habit of making steam trips, and are not much acquainted with the nature of machinery, that during very bad weather, as the engine would be going slow, it is the most unlikely time for an accident to happen; if a break down takes place, it will be most probably in light winds, when a great number of revolutions are made.

Mercator next proceeds to remark upon some observations of mine, relative to the advantages of removing the floats, in preference to disconnecting, in very light winds. He then uses the following sentence: "The commander is in error in supposing any great effort necessary to turn round the wheels when 'disconnected'—any one at all conversant with mechanics, would, I think, tell him, that if he had practised this mode, ('disconnecting') (which he acknowledges he has not done,) he would have found, the least imaginable effort applied to propel the ship, would move them round, however large, (perhaps the larger the easier moved,) and less, even next to nothing, would serve to keep them in motion." In answer to all this, allow me to observe, first, in my communication I supposed the wind to be so very light, that the vessel had not sufficient way to turn the wheels;—to effect this, it requires what sailors call a two-knot breeze. The difficulty that arises from this lightness of wind is fully entered into, in a letter from Mr. Peacock, Master of H.M.S.V. *Medea*, which appeared in your last November number. It is there proposed under these circumstances to turn the wheels by manual labour. Secondly, that if "any one acquainted with mechanics," had told me what Mercator has, he would have advanced that which is erroneous. The mechanical law is, that it requires the same power to keep up the motion of the wheels as to move them at first, and if the velocity of the ship increases, the resistance to the wheel increases according to the square of the increased velocity. Certainly upon a road where

the resistance of the air is almost nothing, after having overcome the first inertia, all that afterwards impedes the carriage is the friction; but motion in fluids is quite different, and is governed by that law which I have already stated. Any one who wishes to enter more upon this subject, will find it fully explained in Tredgold's well known work upon the steam engine, or still clearer in Whewell's "First Principles of Mechanics," a work which I strongly recommend to all my younger brother officers.

We now arrive at a recommendation to the surveyor, Sir William Symonds, to notice that a vessel like the *Dee*, spreading so little canvass, should sail best in light winds. Now I rather think, that the men-of-war steam-vessels spread more canvass in fine weather, going off the wind, than is generally supposed. But putting that on one side, it will be plainly seen, when I mention the *Dee*'s dimensions, that with the slightest smattering of naval architecture, it only was what might have been expected; the deck of the *Dee* was 170 feet long, extreme breadth only 30 feet, draught of water, with coals, stores, &c., on board, 12 feet, added to which her bow was very sharp. In the next paragraph of Mercator's letter he rather returns upon the subject which he had commenced with; and goes on to express his opinion that a man-of-war-steam vessel ought to be able to disconnect in one minute, at the very most. I believe, on board the *Medea*, both wheels have been thrown out of gear in three or four minutes. He concludes his communication by proposing a plan for steadying the wheels, by which he hopes to throw them out of gear instantly. I must say, that I cannot see how his proposal would at all effect that object. The pawl at present in use, if only a little improved upon, would do all that his rather cumbrous machinery is expected to perform; and he appears to me to forget what are the causes which create difficulties in connecting or disconnecting,—there are two principal ones:—First, it is necessary that the wheels be in one particular position when the crank pins are removed or put in. Secondly, that only one wheel be thrown out of gear at the same time. Such being the arrangements, no extra machinery applied to the shaft, (which is what Mercator proposes,) can be of any advantage, unless by it the wheels can not only be stopped, but moved, at pleasure. Of course it is evident that these remarks do not apply to shipping or unshipping; when that plan is adopted, it is only necessary to secure the wheels; their positions can be of no consequence.

WM. RAMSAY, Com., R. N.

J. W. S. Club.

TABLE XXXI.

For reducing Norwegian feet to English feet, and English feet to Norwegian.

1 Norwegian foot = 1·0293582 English foot.

1 English foot = 0·9714791 Norwegian foot.

Norweg. or Eng. Feet.	English Feet and Dec. parts.	Norwegian Feet and Dec. parts.	Norweg. or Eng. Feet.	English Feet and Dec. parts.	Norwegian Feet and Dec. parts.	Norweg. or Eng. Feet.	English Feet and Dec. parts.	Norwegian Feet and Dec. parts.
1	1·029	0·971	40	41·174	38·859	79	81·319	76·747
2	2·059	1·943	41	42·204	39·831	80	82·349	77·718
3	3·088	2·914	42	43·233	40·802	81	83·378	78·690
4	4·117	3·886	43	44·262	41·774	82	84·407	79·661
5	5·147	4·857	44	45·292	42·745	83	85·437	80·633
6	6·176	5·829	45	46·321	43·717	84	86·466	81·604
7	7·206	6·800	46	47·350	44·688	85	87·495	82·576
8	8·235	7·772	47	48·380	45·660	86	88·525	83·547
9	9·264	8·743	48	49·409	46·631	87	89·554	84·519
10	10·294	9·715	49	50·439	47·602	88	90·583	85·490
11	11·323	10·686	50	51·468	48·574	89	91·613	86·462
12	12·352	11·657	51	52·497	49·545	90	92·642	87·433
13	13·382	12·629	52	53·527	50·517	91	93·672	88·405
14	14·411	13·601	53	54·556	51·488	92	94·701	89·376
15	15·440	14·572	54	55·585	52·460	93	95·730	90·348
16	16·470	15·545	55	56·614	53·431	94	96·760	91·319
17	17·499	16·515	56	57·644	54·403	95	97·789	92·290
18	18·528	17·487	57	58·673	55·374	96	98·818	93·262
19	19·558	18·458	58	59·703	56·346	97	99·848	94·233
20	20·587	19·430	59	60·732	57·317	98	100·877	95·205
21	21·617	20·401	60	61·761	58·289	99	101·906	96·176
22	22·646	21·372	61	62·791	59·260	100	102·936	97·148
23	23·675	22·344	62	63·820	60·232	150	154·403	145·722
24	24·705	23·315	63	64·850	61·203	200	205·872	194·296
25	25·734	24·287	64	65·879	62·175	250	257·339	242·870
26	26·763	25·258	65	66·908	63·146	300	308·807	291·444
27	27·793	26·230	66	67·938	64·118	350	360·275	340·018
28	28·822	27·201	67	68·967	65·089	400	411·743	388·592
29	29·851	28·173	68	69·996	66·060	450	463·211	437·166
30	30·881	29·144	69	71·026	67·032	500	514·679	485·740
31	31·910	30·116	70	72·055	68·004	550	566·147	534·314
32	32·939	31·087	71	73·084	68·975	600	617·615	582·887
33	33·969	32·059	72	74·114	69·946	650	669·082	631·461
34	34·998	33·030	73	75·143	70·918	700	720·551	680·035
35	36·028	34·002	74	76·172	71·889	750	772·018	728·609
36	37·057	34·973	75	77·202	72·861	800	823·487	777·183
37	38·086	35·945	76	78·231	73·832	850	874·954	825·757
38	39·116	36·916	77	79·261	74·804	900	926·422	874·331
39	40·145	37·888	78	80·290	75·775	1000	1029·358	971·479

NAUTICAL LIBRARIES.

[We find the following interesting paper on the libraries of the naval and colonial departments in a recent number of the "*Annales Maritimes*."—ED. N. M.]

THE *Annales Maritimes* for 1836 contained several official reports relating to the renovation of the naval libraries.* Since that period nothing has been neglected to improve these establishments.

The naval prefects of Brest, Toulon, Rochefort, Lorient, and Cherbourg, following the steps which were prescribed to them, have transmitted the reports of the commissioners on the books which were still wanting, as well as on the materials necessary to form a general catalogue; which appears to consist now of 20,000 articles, besides a constant progressive increase.

The idea has also been conceived of annexing to this catalogue a naval bibliography, as no such work at present exists, although we possess several other special bibliographies, such as the astronomical bibliography of Lalande, the agricultural bibliography of Musset, &c.

From very remote epochs to the present time, a multitude of works, more or less important, have been published in other countries upon navigation, and a complete knowledge of them cannot be gained except by means of a *catalogue raisonné*, which should include them all. And as such an inquiry ought not to be confined to France,—for navigation belongs to all countries,—the minister wrote to all the French consuls residing in foreign countries, requesting them to cooperate in this useful undertaking, by sending him not only such catalogues on this subject as they could procure, but also the titles of all such books as they could collect in public or in private libraries. It was not doubted that their enlightened possessors would eagerly associate themselves with us in a work, the publicity of which would render its advantages common to all maritime and commercial nations. Our consuls at Geneva and Madrid have already accepted this invitation. From London several documents have been received, and others are expected; and yet England, specially maritime as she is, does not seem able to assist us to so great an extent as might have been expected. There is only one great public library in London, that of the British Museum, and yet its catalogue (of which there are two copies in the Royal Library at Paris,) has not been entirely completed. As to the collection of books at the Admiralty, it cannot even be called a library; for it contains only a small collection of voyages, and a very few

* 1st. A report to the minister of marine upon the naval libraries. 2nd. A letter from the minister to the five naval prefects, inviting them to appoint proper persons to discharge the functions of conservators of those libraries. 3rd. A letter approving the choice made by the prefects. 4th. A decree of the minister appointing the conservators. 5th. An *ordonnance du Roi*, nominating the conservator of the government library, and charging him with the general superintendence of all the naval and colonial libraries.

hydrographic works, besides the charts, &c., which are published there. Notwithstanding these difficulties, M. de Gerin-Roze, interpreter and translator to the minister of the marine, was able, during two months' residence there, to collect a tolerably large quantity of valuable documents. The Consul-general, at Amsterdam, has concerted, with the director of the naval library of the Netherlands, the means of obtaining a list of all the naval works which have been produced in Holland. Similar measures will be taken also at Copenhagen, Stockholm, Berlin, Lisbon, St. Petersburg, Constantinople, and Venice; and M. Gaimar, president of the scientific commission for Iceland and Greenland, has received instructions to examine all the bibliography of the north.

Nor has Germany, that classic land of every species of erudition, withheld her labours in clearing part of that vast field which it is here proposed to cultivate. There appeared at Hamburg, forty-five years ago, a marine dictionary in eight languages, Dutch, French, English, Swedish, Danish, Italian, Spanish, and Portuguese, in 3 vols. 4to, and one volume of plates. The first 300 pages contain, in chronologic order, the titles of works published in Europe upon the science and art of navigation, between 1484 (an epoch long subsequent to the discovery of printing) and 1793, that is to say, during the space of three centuries. This list, which comprises more than 1,200 articles, accompanied by notes, and another list taken from the chapter on "*Scientia Navalis*," of a book published in 1806, at Göttingen, by the Aulic counsellor Reiss, under the title of "*Repertorium commentationum à societatibus literariis editum*," require, undoubtedly, to be reviewed and completed; but they will not be the less valuable for the bibliography which we are now preparing.* That important work will moreover have to fill up the gap of the thirty years which have elapsed since 1806, during which both the art and science of navigation have made so much progress, and have produced such a multiplicity of publications in all the countries connected with the sea. Thus, a maritime bibliography will assist the general catalogue of books composing the present libraries of the naval department; it will show not only the riches they possess, but the amount of their wants.

In order to reduce the number of these wants, the minister, in his report to the King upon the budget of 1830, demands that an end should be put to the insufficiency of the fund destined to the purchase of books for the naval ports; "an insufficiency," he adds, "which is evidently mischievous." And in unison with those laudable views, the reporter of the commission of finance, announced to the Chamber of Deputies that, "The commissioners saw with pleasure that the minister had at length decided upon what the interest of both art and

* Amongst other omissions may be mentioned, that of the *ordonnance organique de la Marine Militaire*, de 1689, sous Louis XIV.

science had long prescribed to him ; and that they had not hesitated in granting the increased demand for 1838, stipulating only that the new purchases were to consist of works of acknowledged utility, though too expensive for private means." At Paris, the *Depôt general des Cartes*, has one of the most complete libraries of nautical works, especially of voyages ; it consists of 18,000 volumes ; and as that office has been placed this year in a building expressly contrived for securing against fire its hydrographic riches, which are valued at several millions of francs, it will at the same time answer better for the preservation of the books, and be more within reach of those who consult them.

In one of the courts of that edifice, a large building has been fitted for the reception of the Archives of Versailles, which contain all the important papers of the colonial and marine departments, since the ministry of Cardinal Richelieu ; that is to say, during 220 years.

At the same time, the naval library of Toulon has been enlarged, and that of Lorient more suitably arranged. At Brest, the library of the port is composed of 8,000 volumes, which, when lately visited, were found in perfect order ; but its situation among the forges and workshops, requires some interference. The library there of the medical officers, maintained partly at their own expenses, will be soon removed to the new hospital, which will be very advantageous.

At Rochefort, the hospital library is a special collection of medical and scientific works, but less remarkable for their number, than for their choice and fine preservation. It is composed of ten thousand volumes, costly and uniformly bound, and forming a noble fund of instruction in both art and science for all those who belong to that school. Having commenced only with the present century, its rapid increase has arisen from the contributions which the pupils have imposed upon themselves at their entrance, as well as those of the medical officers at each step of their promotion. These contributions, since 1806, have amounted to 53,000 francs ; and yet the library belongs to the state, which in the same period has not expended upon it more than 5,000 francs. The library of the port is less considerable, and is placed in the building formerly occupied by the naval students, and by the marine tribunals.

The same course has taken place in the libraries of the port, and of the hospital at Cherbourg. It was at first intended to unite them, but from official considerations, they have been kept distinct. The house, which had belonged to the captain of the port, has been appropriated to the port library. Thus in all the naval ports the instruction which the state, if its interests be well understood, ought to procure for its servants, will be offered in a convenient manner, to all the officers of the navy, in the several works required for each branch of the service. But these libraries must not be left deficient of such other works as may enable the officers to keep up an acquaintance

with the many branches of knowledge which are necessary to illustrate their professional studies.

The eleven* naval libraries which have been mentioned, originated in different ways, and at different times. That belonging to the *depôt général des cartes*, is not only the most numerous, but the most ancient of all, since it commenced with the depôt, in 1720.† That of Brest was erected in 1752, at the same time as the naval academy, the memoirs of which, however, did not appear till 1773.

* Besides these eleven libraries, there are three others, but less considerable; that of the Artillery School at Toulon; that of the Royal Forges at Chaussade; and that of that of the Foundry, at Indret.

† The *Depôt de la Marine et des Colonies* was established in 1688, under Colbert. But in 1720 it was represented to the Regent, Philippe d'Orleans, that the charts, plans, journals, and nautical memoirs, had been hitherto so mixed in the archives with the other papers concerning the navy, that although they were arranged with the utmost care, little use could be made of them. The Regent, therefore, ordered them to be removed from the archives, and to be placed in charge of a naval officer capable of examining and appreciating them. The prince chose for that important duty the Chevalier de Luynes, capitaine de Vaisseau. The personal establishment of the *Depôt des Cartes* was at first very modest; one only assistant draftsman was given to the chevalier, with a salary of 1,200 francs. This was Bellin, whose name has become so celebrated, but who till then had never occupied himself with hydrography; a science which, it must be confessed, had been abandoned in France since the seventeenth century. No one had devoted himself to that pursuit, and after the publication, in 1693, of *Le Neptune Français*, which was a work by different hands, the French were authors of no naval charts. But Bellin, applying himself with ardour to the study of hydrography, and carefully sifting all the materials which he was employed to arrange, at the end of sixteen years of labour thought himself able to offer the results to the public. In 1737, he brought out his first chart of the Mediterranean; and in 1758, he completed his collection of the sixty charts, which was called the *Hydrographie Française*, and which was soon substituted for the *Neptune Française*. A copy of this work was supplied to all vessels employed in the public service from that period, till the appearance of the truly beautiful charts, which we owe to that skilful and modest corps, the hydrographic engineers, and above all to its illustrious chief, M. Beautemps Beaupré.

The Chevalier de Luynes was succeeded in 1722 by M. de la Blandiniere, capitaine de Vaisseau; in 1734 the Chevalier d'Albert, commodore; in 1749, M. de la Galissonniere, the conqueror of the unfortunate Byng; in 1756, M. Perier de Salvert; and in 1757, M. de Bompar, both commodores, as well as the Marquis de Chabert, who was appointed to the Depôt in 1758, and became Inspector-general, until 1792; up to which period, the scientific depôts of the army and navy had been mixed together. Since that time, the *Depôt General des Cartes et Plans* has had for directors the Vice-admiral Comte de Rosily, the Chevalier de Rossel, the Vice-admiral Comte de Gourdon; and now the Rear-admiral Baron Hamelin, under whose management it sustains its reputation, and is acknowledged by foreigners to be the greatest hydrographic establishment in Europe.

In the last session, M. Arago, after dwelling with his usual talent and energy on the important services of the Corps des Ingenieurs-Hydrographes, said, "I have only to mention the individuals of whom it was composed, for their names are known not only to the navy, but to the whole world." L'Ingenieur-en-chef is M. Beautemps Beaupré, his associate, M. Daussy, &c.

Those of Toulon, of Rochefort, and of Lorient, were formed in virtue of a decree of the national convention of February 7, 1794. That of Cherbourg dates only from 1821. The libraries of the naval hospitals at the ports of Brest, Toulon, Rochefort, and Cherbourg, were instituted by the executive directory, in February, 1798.

After the naval libraries in France, we will enumerate those belonging to our ultra-marine establishments. It will be learned with some surprise, that there never were any public libraries in our colonies, even in the time of their greatest prosperity, until 1826; when that wise and enlightened statesman, M. le Comte de Chabrol-Crouzol, felt that it was wrong to deprive our colonial establishments of the literary and scientific resources with which the metropolis abounded. He perceived that the circulation there of the standard works of our language, was the best method of encouraging that noblest branch of commerce—the exchange of ideas; and that by cultivating an identity of thought and sentiment, we should most effectually strengthen the ties of mutual interest.

Some attempts had been already made, especially at Cayenne, in 1824, under the administration of M. le Baron Milius, to collect from the archives, the multitude of memoirs and documents on the different branches of commerce, and on rural and domestic economy, as well as all the periodical works which had been transmitted by government, so as to keep the knowledge of the colonists on a par with the discoveries which every day brought forth in the arts. Other efforts were made in other places, and at length the young creoles who had been sent into France by their parents in order to receive a university education, and who had frequented the libraries of our large towns, carried back to their native soil the laudable desire of founding there, establishments analogous to those of the mother country. The minister of that day was not backward in seconding these generous impulses; nor will he, at least, have to be reproached for not having satisfied the national wishes.

In the course of 1827, Martinique, Guadeloupe, and Guiane, Senegal, Bourbon, and Pondichéry, witnessed the formation of public libraries, composed of all the books which were found in the archives, or which had been dispersed among the various branches of the military, civil, and judicial services, as well as of all those which were despatched from France by the desire of the authorities. Pondichéry, which is the most distant of all the colonial libraries, is the most considerable; it contains not less than 20,000 volumes.

That at Guadeloupe possesses a large number of useful and instructive works; it is much frequented, and is kept open every day from nine o'clock in the morning till three in the afternoon. So likewise is that recently established at Senegal; and the management of both these libraries is entirely under the direction of the local authorities.

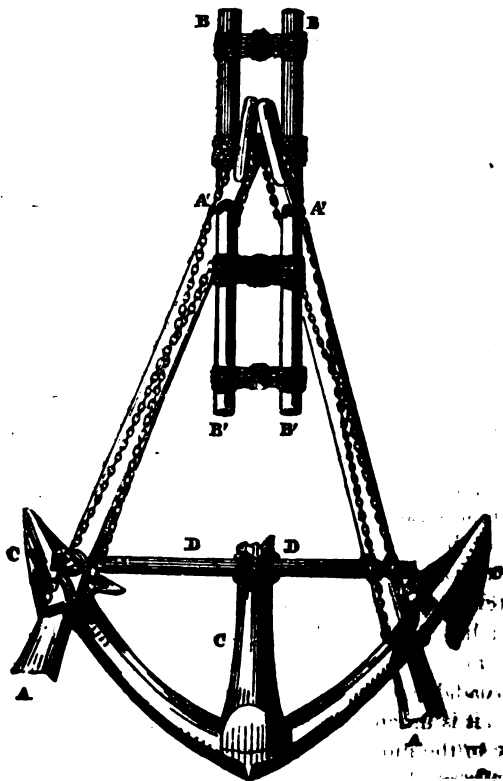
It still remains to collect regular catalogues from all the colonial libraries like those which have been transmitted from the ports of France. Similar models for that purpose have been addressed to the colonies; and in time all will be comprised in one general catalogue, like that of the naval libraries.

Signed, BAJOT,
Commissaire honoraire de la Marine, chargé de la
surveillance générale des bibliothèques.

JURY-ANCHOR.—BY COMMANDER A. MILNE, OF H.M.S. SNAKE.

H.M.S. Snake, Port-Royal, February, 1838.

WHEN Her Majesty's sloop Snake lost three anchors, all broken in the shank, on the bank of Campeche, near the Sisal shoal, at the time of the Cayman hurricane in October, 1837; and when she had parted her fourth, and only remaining anchor, the following make-shift, or jury-anchor, was formed with two broken shanks, and a pair of arms recovered from one of the broken anchors.



Explanation:—AA, the broken shanks. BB, the iron stocks of the same. C, broken shank and arms. DD, a cross bar, securing the remaining part of the broken shank, with the arms to the two shanks AA.

The two shanks were carried close out to the palms of the anchor, on opposite sides, and then lashed with the topsail sheet chains. The two stocks were hooked together by chains of the same description. These being all hove turt, and wedged up, a crop-bar, D, was lashed across the shanks, securing in the centre the remaining piece of the shank attached to the arms.

A length of the stream chain was then passed through the rings of the anchors, down along the shanks, with a round turn round each palm and shank, then back, and secured. By this means, when any strain comes on the arms, it is thrown on the chain by the shanks being inclined to draw through the small lashings; while, in so doing, the stream chain acts as a vice, and the more the shank draws, the firmer is the arm grasped by the round turn of the stream cable, whilst the stream cable prevents the shanks from drawing out altogether.

This anchor was found to answer; and H.M.S. Snake rode by it for some time, and came to with it on her arrival at Port-Royal, Jamaica, in December.

I am, Sir, your obedient servant,

A. M.

GROUND TACKLE OF SHIPS OF WAR.

London, March, 1838.

MR. EDITOR,—Last month, during a gale at Gibraltar, H.M. ships of the line, Bellerophon, Minden, Russell, and Talavera, were lying there. They were nearly all adrift, and more than one of them nearly lost:—the Bellerophon having struck, and broke her rudder; and the Russell upon the point of cutting away her masts, which was only prevented by a sudden shift, or flaw of wind, from off the rock, rendering it unnecessary.

I have pointed out more than once, through your Magazine, the questionable state of the ground tackle of our men-of-war, and I shall not cease doing so, with a view to prevent that loss of lives, which will assuredly occur before long, if H.M. ships are to be suffered to depend upon such anchors and cables as they have from the dock-yards.

In the same situation as these ships were, the Pembroke, of the line, was nearly lost, about a year ago; and I will venture to say, that if an extract was taken from the logs of these five line-of-battle ships, of their proceedings during these two periods of danger, and their *breakage of anchors and cables*, fairly published to the world, that it

would form an *exposé* of the *wisdom* of the dock-yard people of this great naval country, of which no one need be particularly proud.

I am, Sir, your obedient servant,

MERCATOR.

Naval Chronicle.

MONTHLY GOSSIP ON NAUTICALS. — Speaking of nauticals, Mr. Editor, reminds me of your own little pet, which I find has won for itself the golden title of “ True Blue ” among the blue jackets, and “ Blue Ruin ” among a certain class of long shore gentry. “ Excuse my freedom ; ” but I am in honour bound to tell you all the secrets, be they bitter as gall, or sweet as honey. I shall leave your readers to guess the origin of your pet’s nicknames, but I have a strange notion that it may be found in the old saying, “ What’s one man’s meat is another man’s poison. ” Knowledge is always desirable, Mr. Editor ; and good sound hydrographical knowledge is among seamen’s first wants ; and they seem to know that you can give it them, if I may judge from what I hear, and the number of ships in which I find the little “ Blue Nautical. ” But it won’t go down with the long togs everywhere, as you shall hear. A reading-room and library was established in the north of England the other day, at an obscure sea-port on the eastern coast, the members of it being for the most part merchants, ship-owners, ship-builders, &c. ; and among the periodicals proposed to be taken was the *Nautical Magazine*. But the *Nautical*, Mr. Editor, was rejected ; yes, verily discarded, discharged, turned out ; for though no one objected to it, no one supported it—a kind of neutral way of swamping it. I have been turning over in my mind ever since, whether your extravagant price could have produced this friendly lukewarmness, but that I thought impossible ; and I wondered why a set of men should reject a periodical which gives the kind of information so valuable to their sailing captains, till I came across certain articles on marine insurance, and other secrets, and certain long tables of the wrecks of British shipping, showing up the tricks of trade, and the frightful amount of British capital and British lives consigned to the shades below every day ! Your last number, I perceive, enumerates 138,* a tolerable number to begin the present year with, considering that 109 days of it only are passed over ; and though your accounts of rocks and shoals may be very acceptable to sailors, the number of vessels lost on them, is gall to their employers ; ruin inevitable, Mr. Editor, and served up in the *Nautical*, is “ Blue ruin ” itself. But you are right, Mr. Editor, quite right ; and I hope you will prefer telling the truth to John Bull to seeking the favours of all the reading-rooms of ship-owners in the kingdom. And now let me rub my eyes, and tell you of other matters.

And first, the lion of the day, the Nelson Memorial—another work levied from art, to remind us, that “ the paths of glory lead but to the grave. ” Many long heads are at work about designs for a suitable one to perpetuate the memory of him whose laurels were gained in the

* Our friend “ Argus ” will find this amount augmented not a little in our present Number.—ED.

troughs of the sea, and several thousand pounds are already subscribed towards it. It is gratifying to find that the subscription goes on bravely. How could it be otherwise, when at the head of it is the great general of the age, the Duke of Wellington, assisting with his experience. It is just where he ought to be, and he knows and feels it. Considering that royalty, nobility, and gentry of high degree, are all engaged in this national work, with army and navy, let us hope that we shall have something more becoming a *maritime* nation than the National Gallery, opposite to which it is to stand in Trafalgar-square—a building which has been mistaken by our facetious neighbours across the channel as an asylum for the blind! And of all things, let us hope that it will be no unmeaning pillar, surmounted by an effigy of the hero, standing, as it were, in pillory. Of course you are aware that advertisements are out for designs, to cost from 25,000*l.* to 30,000*l.*, the latter being the cost of the Duke of York's tall stand in Waterloo-place. But what think you of a gallant captain of the United States' navy subscribing five guineas to it? His name is Uriah P——. Levy, and every blue jacket, fore and aft the country, should know it.

Another warning voice has been lifted up about proper nurseries for seamen. Captain Lihou, he of rudder celebrity, has sent forth a pamphlet, with the hopes of producing that attention to the subject of our seamen, which no one who has gone before him, has succeeded in gaining. Pray, read it, Mr. Editor; the cause is a worthy one; and I see that a Mr. Kennish, carpenter, B. N., has just produced a book on his method of concentrating the fire of a ship's broadside. They say it is something *twice-laid*, having been served up to the committee of Naval Inventions of 1832. Pray, let us know whether it has anything particular to recommend it; and, *en passant*, let us know if that committee I mentioned are ever to lay their heads together again?

So, the Great Western steam-ship, after her burning in the Thames, proceeding, it is said, only from her *over-heated* ardour to get into her own domain, the Atlantic, is steaming away gallantly for New York, preceded by a herald-star, the Sirius. The former left Bristol on the 8th, and the latter departed a week before from Cork, determined both to give the lie direct, as their course will be, to the luminous rhapsodies of the learned Dr. Lardner, and to prove physically the contrary to that which he has demonstrated to be mathematically impossible. What will old Neptune think of the reform which these craft will bring about in his territories? Perhaps he will take the loan of their spinning-wheels now and then, as modern improvements, to his car. By the way, could he tell us what has become of the poor Briseis, with her gallant crew and commander, as good a sailor, aye, every inch of him, as ever stepped the quarter-deck. You know she left Falmouth, for Halifax, on the 6th of January, and has not been heard of since. Let us hope for the best, and that she may turn up before long from the southward, though it may be with wet jackets, if we are to judge by the weather which the Inconstant had. Talking of packets, I see they have tugged the poor Ranger off the rocks at Falmouth, by main strength, and docked her at Halifax, as a specimen of the manner in which men-of-war are put together. No slop-work there, I guess, Mr. Editor,—something different to a post-office steamer purchased the other day at Liverpool, that got such a

shaking in the first gale she was in, that they were obliged to dock her, and drive about a thousand new bolts into her, to keep her together! So report says. How is it that Falmouth is retained as a packet station, when there is no protection in the roads, and no communication can be had with the shore when it is blowing hard? There was her commander, Lieutenant Turner, looking at her, while the acting master, Mr. H. Hunter, could do nothing for want of hands, and yet he was dismissed the service for it by the court-martial. This is a disgrace to Falmouth; and if report be true, they think so, for it appears, that they are *going* to improve their harbour!

Another word about packets. What think you of the old Camden, which has traversed the Atlantic so often with her Majesty's mails, finding her way into the Pacific, with a far more important mail than she has ever carried before? She has been purchased, by the assistance of some excellent men, subjects of this favoured land, to spread the truths of the Gospel among the ignorant natives of the Pacific islands, before the seeds of Romanism are sown among them. Earl Fitzwilliam's family gave 300*l.*; the Duke of Devonshire, 150*l.*; the Corporation of London, 500*l.*, and several other subscriptions, too numerous to mention, were contributed, and the old Camden was purchased, and placed in the charge of that indefatigable, excellent missionary, the Rev. J. Williams, so well known for his devotion to the sacred cause in which he has long since embarked. At the conclusion of a simple, but solemn ceremony, the Camden sailed from the river on the 11th of April, with Mr. Williams, and several other missionaries, and carried with her the blessings and prayers of assembled multitudes. *On dit*, that one of the steam-boat companies, I think it is the London and Westminster, actually intend to try Captain Hall's plan of having the steering-wheel forward, like the Yankees. I am rather surprised it was not done before; but you know John Bull is a stubborn animal and fond of old fashions. Query: A coachman, with four in hand, would be just where he ought to be in the guard's seat, wouldn't he?

And what think you of steam navigation in the Thames, Mr. Editor? Shall we have as many capsizings and sinkings this summer as usual? There'll be some work for the lawyers, I guess; for I see that the worshipful company of watermen and lightermen, and that genus, have declared open legal warfare against all steamers going above five knots between London Bridge and Limehouse-reach, (East-end.) Query: Do they mean through the water, or over the ground? What a nice point for the long wigs to debate over! I think, somehow, that the railway companies between those limits have been urging this. Who would travel at the rate of five miles per hour by a steamer, when they can go fifty by the railroad? The short trip steam-boats will not last long.

This brings me, by the way, to the Greenwich steam-boat docks just proposed: a most excellent plan. Only imagine the classical ground on which the annual *lifting* and *eating of tansy puddings* at Greenwich fair with all the rest of the cockney buffoonery which is carried on there, being converted into wet docks! I venture to predict that they will do more good than has been done on all the fair days which Greenwich has seen put together, and some of them I ween were foul enough. But the docks are only half the scheme. There is to be a railroad to Charing-cross, to whisk passengers from the river to the

West-end at once, without undergoing the glorious confusion of landing at the general Steam-packet Company's wharf, and hackney coaching it through the city. Go it, John Bull: go ahead with brother Jonathan; this will be noble work. What are the Thames haven people about?—I don't think they have broken ground yet—Greenwich will be before them. But don't despair, haveners, there's room for you both in these luxurious days. At all events the river lays between you, and you can't squabble. I heard of some squabbling the other day, Mr. Editor, about a floating pier on the east side of Waterloo-bridge, belonging to some poor watermen, being ordered away by the conservators of the river, (query, who are they?) while they winked at those of the Hungerford-stairs, and some others.—O, John Bull, thou art a perverse animal. Here is your first river, muddy and filthy though it be, thronged with boats of all kinds, and you see floating piers in the shape of barges, thrust out from the banks, and moored there, to the interruption of the navigation, to serve as landing places for thousands of passengers daily, reproaching you for your want of proper wharfs and quays;—a beautiful and perfect system of drainage offered you by your countryman, Mr. Martin, which would afford you the manifold advantages of keeping your river clean, of turning the filth daily emptied into it by the sewers of your great metropolis to an immense profit, while the means by which it might be done would afford you magnificent terraces and walks, and quays to adorn and embellish its banks; and you see paltry, petty companies, plying steam-boats, squabbling about landing places, all for self-interest—and you talk of your conservators of *your* river. Shame—shame, on thee, honest John! When, when will you call for one of the eyes of Argus, to see the sorry, disreputable, miserly figure you are exhibiting yourself to your own countrymen, and to the foreigners who visit you! Look at the first river of your favoured land, and then say, what have you done to deserve it? Besides, where is the Apollo steamer?

I am afraid, Mr. Editor, I am becoming prosy, but to leave this digression on the subject of piers, I see the Deal people are bestirring themselves in earnest. Besides constructing a pier, they are to have a daily steamer of one of the companies from London to come to it, and return from it, and Deal will yet vie with Margate, Ramsgate, and Dover, in its attractions for visiters and their means of visiting. There is a certain place called Rye, once on the Sussex coast, going to frenchify its citizens with the Boulognese, by means of two steamers to run between that place and Boulogne, in a voyage of three hours and a half. Much is to be done at Boulogne, they say, by looking *sharp*. Are the people of Rye going to learn the trade?—so, some one has discovered that the new light at Cape Grinez has been the cause of disaster, and has lighted vessels to their destruction instead of their safety. I never saw the official account of this light in your pages, Mr. Editor, only the British Admiralty one.—Where is that* generally issued from the office of the *Phares et Fanaux*? The old saw has it, that it is "never too late to mend;" and it is reported that an additional smaller and revolving light will be placed fifty metres W.N.W. of the present Grinez light, not so high by about eight yards, and not visible for half the distance. But you will perhaps illuminate

[* We have never yet seen it, nor the new announcement of our correspondent.—
ED. N. M.]

us on this subject, Mr. Editor. At all events, it is civil and polite, as usual, on the part of the French authorities. They know more about constructing lights than we do; at least, so Alan Stevenson thinks—they go scientifically to work, whereas, John Bull—never mind, honest John will mend in time. But what lights has he got to compare with the French?—not a word about the Forelands—Oh, not for the world. By the bye, I find that the Ballast-office of Dublin, are appealed to for a light on St. John's Point, at the entrance of Dundrum Bay. A small light is also asked for on Cairn point of Loch Ryan; and they say that the present lights at Aberdeen, too diminutive to be of use to vessels passing Girdleness, will shortly be eclipsed by a new lighthouse, to be erected on the north quay, at Aberdeen. What are the commissioners of Northern Lights about, that they do not at once erect a beacon on Noss Head, (Caithness,) to put a stop to the danger so frequently incurred, by vessels mistaking it for Duncansby Head, and running on shore in Sinclair's bay, when they consider themselves standing through the Pentland Frith. True it is, the Skerrie's light is sufficient at night; but in hazy weather, when the loom of the land is just visible by day, and the lighthouse is not seen, to distinguish Noss Head from Duncansby Head, requires more than the hundred eyes of your obedient servant

ARGUS.

Oh! Mr. Editor, another parting line. I had almost forgotten to tell you that the big ships are nearly all gone to Canada; and that the governor of the Hudson's-bay country, in that part of the world, has, in a very quiet masterly manner, completed the coast line of the Arctic Ocean between points Beechey and Franklin, not far from Bhering Straits, by the enterprize of two of the Company's servants, Messrs. Dease and Simpson. It was all along guessed by the knowing "uns," that the discovery would turn out as it has done; but one fact is worth a thousand guesses, and these gentlemen have settled the business in a quiet masterly manner without any puffery of preparation so often rung in our ears on these occasions. This summer they are to give the *Coup de grâce* to the whole of that affair, the coast line of the Arctic basin, on which the great bugbear of the N. W. passage has hung since the days of Cabot; and either Sir John Ross's north-eastern extreme of America, or Captain Back's Strait, west of the mouth of his last new river Back, must go where — has gone before it—it must evaporate—vanish—one or the other: and should Captain Sir John, lose his north-east extreme of America, he can console himself with his curtailed Boothia Felix. Talk of gaining laurels, Mr. Editor, why, what are those of the Duke of Wellington himself to the glory of cutting this gordian knot of the geographers? It is said, the Geographical Society are in extasies on the subject, which is not very kindhearted either, considering that one of the gallant Captains must defeat the other, *Nous verrons, Au revoir*, Mr. Editor, &c.

20th April.

ARGUS.

The Lords Commissioners of the Admiralty have, by a recent regulation, directed that in future all master's assistants shall have served three years in the navy, or five in the merchants' service, and to be sixteen years of age prior to receiving such appointment.

By the following Parliamentary return, we find, that since the 1st February, 1836, our men-of-war on the African coast and in the West Indies have captured twenty-eight slave vessels, only nine of which had slaves on board, (2,305 in number;) the remaining nineteen were captured because they were fitted for the reception of slaves, and were seized under the authority of what is technically called "The Equipment Article."

A Return of all Slave Vessels captured under the late Spanish Treaty, by Her Majesty's Ships, since the 1st day of February, 1836; distinguishing whether having Slaves on board, or under the Equipment Article, to the latest date for which the same can be prepared, and stating the name of the vessel by which each was captured.

Name of Slave Vessel.	Date of Capture.	Whether having Slaves on Board, or under the Equipment Article.	By what Vessel Captured.
Matilde	5 Feb. 36	under Equipment Article	Charybdis.
Hosea	6 ... 36	Ditto	Britomart.
Seis Hermanos	8 ... 36	189 slaves on board.....	Thalia & Waterwitch
Louisa	9 ... 36	under Equipment Article	Forester.
Golandrina	9 ... 36	Ditto	Do.
Tridente	19 .. 36	Ditto	Charybdis.
El Mismo	4 Mar. 36	Ditto	Do.
Jose Fleximan.....	7 ... 36	Ditto	Britomart.
General Mina	7 ... 36	Ditto	Do.
Mariposa	13 ... 36	Ditto	Fair Rosamond.
Galava Josifa	13 ... 36	Ditto	Waterwitch.
Joven Maria	4 ... 36	Ditto	Do.
Felicia	3 July 36	401 slaves on board	Buzzard.
Famosa Primeira	6 ... 36	under Equipment Article	Do.
Preciosa	13 ... 36	287 slaves on board	Pincher.
Atalayo	19 Sept. 36	119 slaves on board	Thalia and Buzzard.
Louisita	25 Nov. 36	under Equipment Article	Rolla.
Gata	5 Dec. 36	111 slaves on board	Scout.
San Nicolas.....	8 ... 36	under Equipment Article	Rolla.
General Laborde	16 ... 36	Ditto	Pincher.
Experimento	31 ... 36	Ditto	Rolla.
Lechuguino.....	31 ... 36	49 slaves on board	Do.
Pacquete de Capo Verde	11 Jan. 37	576 slaves on board	Scout.
Descubierta.....	14 ... 37	under Equipment Article	Do.
Cinco Amigos.....	30 Mar. 37	Ditto	Bonetta.
Dolores	19 April 37	314 slaves on board	Dolphin.
General Ricafort	26 June 37	under Equipment Article	Charybdis.
Mathilde	4 Dec. 37	259 slaves on board	Snake.

H. F. AMEDROZ, Chief Clerk.

Admiralty, 12th March, 1838.

The following midshipmen have passed for lieutenants at the Naval College since our last:—Mr. C. H. May, *Actæon*; Mr. J. E. Bridges, *Britannia*; Lord Frederick H. Kerr, *Inconstant*; Mr. A. R. Dunlop, Mr. T. C. Hodgson, and Mr. P. G. Nettleton, no ship; Mr. Geo. Le G. Bowyear, *Andromache*.

NAVAL OFFICERS.—On the recent discussion in Parliament, respect-

ing the charges of Lord Brougham against naval officers employed in suppressing the slave trade, Mr. C. Wood said, he most gladly availed himself of the opportunity which his hon. and gallant friend afforded him of stating his complete conviction that there was not the slightest shadow of foundation for the charges to which his hon. friend had adverted. (Hear, hear.) He believed it to be impossible that any person bearing a commission in Her Majesty's service could be guilty of such dishonourable acts as those alluded to. He was still happier in being able to say, that from the knowledge which the Admiralty had of the officers employed under them, he did not believe there was a single instance upon record of even any attempt having been made on the part of any one of those officers that could justify the charges which had been made against them. In considering the conduct of officers of the navy acting under those circumstances, the House must recollect, that previous to the treaty with Spain, there was great danger and difficulty attending the duties which they had to perform, and even now there was risk and loss if they seized vessels, however notoriously engaged in the trade, unless at the time they actually had slaves on board; more than one instance could be referred to of officers sustaining severe loss from so seizing vessels. It had been stated that they were known in some cases to have put one slave on board for the purpose of entitling themselves to seize. Now, the mere circulation of such a statement showed the impression existing on men's minds in that part of the world. With respect to the returns for which his own and gallant friend had moved, he should support the motion for them with the greatest pleasure, for there could not be a shadow of doubt that those returns would prove in the clearest manner possible that ever since the requisite power had been granted to officers of the navy, that power had been used for the complete extinction of the slave trade under the Spanish flag. Consenting fully to the motion before the House, he still did not wish to sit down without bearing the most unequivocal testimony to the very praiseworthy conduct, on all occasions, of the officers engaged in the suppression of that trade, a duty attended by a great variety of very painful circumstances.

Sir C. Adam fully concurred in the favourable testimony to the conduct of the officers of the navy borne by the last speaker.

Sir T. Troubridge said, there never had been a more unwarrantable attack than that made upon the character of the navy in reference to the slave trade. Nothing could exceed the gallantry manifested by them on the coast of Africa, or the vigilance with which they attended to the health of the crews committed to their charge, and he sincerely trusted that they would be rewarded as they deserved.

The motion was then agreed to.

MARINE INSURANCE.—It has been proposed lately to improve the harbour of Wexford, and a gentleman, resident, who appears to take great interest in it has addressed a letter to the *Wexford Independent*, of which the following are the concluding paragraphs:—

“Let the following fact be considered: An insurance company (I shall not say where) were applied to to aid our subscription, (pray, Messrs. Editors, do not let the types drop from the composing sticks—don't let your tender partners view astonishment in every feature of your honest countenances, fearing they might be — alarmed,)

their reply was to this effect: 'We charge a higher premium on vessels to and from Wexford, than to any other port; and would be material losers by having a *free* port at Wexford. We, therefore, pray to be excused.' Does not this speak trumpet-tongued? I wish, old as I am, I had lungs of thunder, to rattle it in the ears of those who,—but I write as I speak, in good-humour; and shall not finish the sentence. Hoping the exposition I have, with (I trust) kind feelings given, will induce my townsmen 'to lend a helping-hand,' and unite with us in doing what every honourable mind, every lover of his country must approve—'an endeavour to benefit that, his own native isle.'

"For the assistance you have given to the subscribers, by fearlessly maintaining their intentions, pray accept their thanks, and those of your friend. ————— "ARTHUR MEADOWS."

BOYD'S IMPERVIOUS TAR PAINT.—We perceive that Mr. Kyan has at length found a rival in the preservative art; and from what we hear of Mr. Boyd's impervious tar paint and antiputrescent, its trial can be safely recommended. We shall allude to it in a future number.

Law Proceedings.

CHARLES CAIN.—*Manslaughter.*—Commander of the barque Kingston was indicted for the manslaughter of an unhappy Krooman, in the service of the vessel as steward, on the 20th of May last, in the Calabar river. It appeared in the evidence that a disrespect for the feelings of the steward, followed by a blow, led to the commission of an act of insubordination on his part, which, in its consequences, produced his death in the most brutal and tyrannical manner, viz., by flogging, under the hands of his own countrymen. We have had occasion in a former number to express our opinion on matters of this description, and with all our anxiety for the character and respectability of the officers of our mercantile marine, we very much deplore the occurrence of such events as this, which, in its details, is too revolting to be related. The commander of the Kingston was fortunate that his crime was considered as manslaughter by a jury of his countrymen, for which he was sentenced to two years' imprisonment in the Penitentiary.

THE TRANSIT.*—*Collision.*—A question involving the construction of the Pilot Act.—The smack Duke of York, at anchor in the Downs, (bound to the coast of Africa,) was run foul of in the night of the 9th of January, 1837, by the Transit steamer, of the Peninsular Steam Navigation Company, on her voyage from Falmouth to London, having a licensed pilot on board. The question was whether the liability of a vessel occasioning damage was not limited to amount of pilot's bond. Transit arrested for amount of damage, 800*l.* Contended for the Transit, under protest that she being bound to take pilot on board to whom sole guidance of vessel was transferred, vessel should not be liable for damage occasioned to another during the time she was under pilot's control, and no action could be sustained against owners; this the first action of the kind where both vessels and their owners were British. Reply for the smack, that the statute had not removed the remedy of action, though foreign vessels had been exonerated. British vessels were not. Unreasonable to except steamers, particularly as it would encourage recklessness. They were not absolved, by having a pilot in charge, from keeping a look-out, which was not pilot's duty, and had occasioned collision. 1st Feb. stood over for consideration 17th March. Sir John Nichol stated, this was a case of great importance, the question being whether the owners of vessels receiving damage by collision with others, the vessel doing the damage being in charge of a licensed pilot, have remedy against such vessel and cargo, or against pilot. Protest overruled. Court considered that pilot being on board did not absolve master or owners from responsibility from damage by collision, as they had to see that a proper look-out was kept, that the directions of the pilot might be properly attended to. No negligence attributed to pilot. The smack was at anchor; the steamer in motion. Were her owners liable or not? Lord Stowell had decided a case in point—that of the Neptune the

* Commenced in page 211.

Second, in which it was argued the pilot was liable; and his lordship had decided that the owners of the damaged vessel were entitled to remedy against owners of vessel doing damage, and not against pilot. Sir John Nichol could not act in contradiction to so high an authority, and proceeded to state provisions of the modern law, which limited the responsibility of owners of vessels doing damage to value of ship and freight only, the ancient law having made them responsible to full amount of their property. Justice and common sense, gave right to owners of vessels damaged, to proceed against owners of vessels damaging, to value of ship and freight. He held, without doubt or hesitation, that to the extent of the ship and freight the owner of her was liable, unless damage was shown to be purely accidental and unavoidable, and he recommended the policy of a mutual arrangement between the parties.

[The captains and owners of vessels will see by this decision that it is the duty of the pilot to keep them clear of dangers under water only, while it is theirs to keep them clear of dangers above water always.]

THE GLADIATOR.—*Collision.*—An American vessel, from New York to London, received licensed pilot at Cowes, as obliged, and came in collision with Agnes. The American appeared now under protest, defence being that vessel was in charge of pilot, and that he alone by law was responsible. In support of protest, stated the object was to disencumber the case of disputed facts in order to submit the point of law to judicial committee of Privy Council. If vessel was not in charge of licensed pilot, protest should be supported. Answered—that protest must be to jurisdiction of court, which was not in question; collision averred, and defence required. Sir John Nichol overruled protest as innovating on the jurisdiction of the court, which would not abdicate its power, notwithstanding the difference between it and the municipal courts on the point of law.—*Admiralty Court, 15th June.*

NEW BOOKS.

LIFE AND CORRESPONDENCE OF JOHN EARL OF ST. VINCENT, G.C.B.,
Admiral of the Fleet, &c. By Edward Pelham Brenton, Capt.
R.N. Two Volumes. London: Henry Colburn.

The biographer here has not been left unreminded of the difficulties of his task, and assuredly, that of recording the life and services of so eminent an individual, embracing the eventful period of the last half century, is one by no means free from them. Partiality is the prevailing charge against biographers, and we would not say that Captain Brenton is free from it; though we are content to take his work as filling a most important gap in our naval biography. The memory of Earl St. Vincent demanded the performance of the task which is here executed. Some account of the sterling value of his character was looked for as a matter of right by his country; and the quaint and extraordinary traits of that character, with the moving scenes in which they were displayed, served well to complete the interesting and instructive picture which Captain Brenton has drawn of his *original*.

THE COMPLETE NAUTICAL AND GENERAL NAVIGATION TABLES; including every table required, with the Nautical Almanac, in finding latitude and longitude. By T. Kerigan. Two Volumes. London: Simpkin and Marshall.

Mr. Kerigan's has long been a favourite work among our nautical youth; and he owes this advantage to his being a practical man, and the familiar explanation he has given of the construction of his tables, as well as the excellency of the tables themselves. The present is a second edition, and has the recommendation of being adapted to the new improvements of the Nautical Almanac.

SCANDINAVIA, ANCIENT AND MODERN; *being a History of Denmark, Sweden, Norway, &c.* By A. Crichton, and H. Wheaton, L.L.D. Two Volumes. Edinburgh: Oliver and Boyd; Simpkin and Marshall, London.

The same good taste, the same judgment, and the same fidelity of history that has distinguished the Edinburgh Cabinet Library is observable in these little volumes; and we cordially recommend them as fit companions to their predecessors in that popular and instructive work.

TOPSAIL-SHEET BLOCKS; or, *the Naval Foundling.* By the Old Sailor. Three Volumes. Bentley, London.

There is something of a nautical caste in the title of this production of the Old Sailor's, which we find well preserved throughout. The hero of the tale, a foundling, dignified with the above *purser's* name, and that of "ten thousand" before it, is cleverly introduced. His nautical career serves to interest the reader with scenes and incidents of the sea, no less acceptable as being subjects of history, in which the characters of some of our naval officers of the old school are clearly perceptible. The work abounds with a variety of ludicrous and stirring scenes, and will be found a very interesting and amusing companion.

BAROMETRIC TABLES, *for the Use of Engineers, Geologists, and Scientific Travellers.* By W. Galbraith, M.A. Stirling and Kennedy, Edinburgh; Cary, London.

We have not had an opportunity of comparing these tables with others, but their compact form, and the close corrections which Mr. Galbraith has attended to, are sufficient to enable us to recommend them to the attention of our readers.

COCKNEY AQUATICS.—"The decks of the Royal Adelaide and the Magnet, Margate steam-boats, were crowded with anxious faces; for the Monday's steam-boat race is as great an event as a Derby; and a cockney would as lief lay on an outside horse, as patronise a boat that was likely to let another pass her. Nay, so high is the enthusiasm carried, that books are regularly made on the occasion; and there is as much clamour for bets as in the ring at Epsom or Newmarket. 'Tomkins! I'll lay you a dinner—for three—Royal Adelaide against the Magnet!' bawled Jenkins from the former boat. 'Done!' cries Tomkins. 'The Magnet, for a bottle of port!' bawled out another. 'A white-bait dinner, for two, the Magnet reaches Greenwich first.' 'What should you know about the Magnet?' inquires the mate of the Royal Adelaide. 'Vy, I think I should know something about nauticals, too, for Lord St. Wincent was my godfather.' 'I'll lay a pair of crimping-irons against five shillings the Magnet beats the Royal Adelaide;' bellowed out Green, who, having come on board, mounted the paddle-box. 'I say, Green! I'll lay you an even five, if you like.' 'Vell, five pounds,' cries Green. 'No, shillings;' says his friend. 'Never bet shillings,' replies Green, pulling up his shirt-collar. 'I'll bet fifty pounds,' he adds, getting valiant; 'I'll bet a hundred pounds, a thousand pounds, a million pounds, half the national debt, if you like.'—From "*Jorrocks's Jaunts and Jollities*,"* a renowned sporting citizen of St. Botolph-lane.

WRECKS OF BRITISH SHIPPING—CONTINUED FROM THE SHIPPING
GAZETTE.

[Continued from page 283.]

VESSELS' NAMES,	WHERE BELONGING	MASTERS' NAMES.	WHERE FROM.	WHERE TO	WHERE WRECKED.	WHEN	PARTICULARS.
140 Abcona			Jersey	Glasgow	Portaferry	26 Feb.	
Active			Newcastle	Corsick	Off Lizard	16 Feb.	Crew saved.
Andromeda	Dartmouth	George Latimer	Truro	Aberavon	Llanely	28 Feb.	One drowned.
Ann	Newcastle	Watts	Papers and	wreck wash-	ed ashore	28 July	3 drowned.
Betsy schooner	Whitby	Tate	Whitby	London	Blacktail B.	26 Feb.	
145 Betsy	Portmadoc	Howth				20 Mar.	Crew saved.
Britannia	Seen water-	logged and	abandoned	by Black Cat		16 Feb.	
Brunswick	Sunderland	and			Gunfleet	16 Feb.	
Cams Delight	Run foul of	foundered			Liverpool		Crew saved.
Ceres	Aberdeen	Spence			Dunbar	19 Feb.	Crew drowned.
150 Cervantes			Liverpool	Vera Cruz	Vera Cruz	16 Dec.	
Clydesdale			Liverpool	Newfoundland	Sligo	25 Feb.	
Derwent					Whitby	18 Feb.	
Douglas	Sunderland	Parker			Blacksoot B.	18 Jan.	Crew saved.
Dunbarton Castle			Trinidad	London	Crew & pas svd by Pericles	12 Feb.	
155 Eagle			Dublin	F. William	C. Ireland	20 Feb.	
Edgar	Blyth	Davison	Blyth	London	Humber	24 Feb.	Crew saved.
Edmund	St. Ives	Harry	Crew saved	by Victoria	Capt. Roseland	Feb.	
Elizabeth Caroline			St. Andrews	Jamaica	49° N. 35° W. 7	Mar.	Abandoned.
Elizabeth	Llanely	Sunk off	Lundy	Island		20 Jan.	Crew saved.
160 Elizabeth & Mary		Fawcner	Bristol	Honduras	S. Lay reefs	20 Jan.	
Euphemia			Clare	Glasgow	Barra	Mar.	Crew drowned.
Favourite Nancy			Portglaise	Aberavon	Aberystwith	April	Crew saved.
Francis		Rees	Newcastle	Gibraltar	Labrita P.	4 March	Crew saved.
165 Friends	Dublin	Smith	Duncan	Gloucester	C. Ireland	Feb.	Crew saved.
Francis schooner					Sunderland	Feb.	Crew drowned.
Friend-ship	Sunderland				Sunderland	27 Feb.	
Gen. Coffin	St. John NB		St. John	S Domingo	Turks I.	29 Nov.	
Gleaner			Sunderland	Fraserburgh	Fraserburgh	24 Feb.	
170 Glenegarry	Buchanan	Dublin	Cork	Dungrvon B	S. Michaels	Feb.	Crew saved.
Happy Return		Davidson	Guernsey		not hrd of since	16 Dec.	
Harriet schooner		Cardiff			Algarve	9 Feb.	Crew saved.
Holland	Sunderland				Seaborn	17 Mar.	One lost.
Hope	Ipswich				Off Corton	21 Mar.	Two saved
175 Industry		Atkinson	Whitehaven	Dublin	I. Man	26 Mar.	
Industry	(Crew saved	by Isabella)	Gloucester	St. Jn's N.B.	Abandoned	19 Mar.	Run down.
Janus		Longridge	Sunderland	Charente	Off Beachy H	6 Mar.	Crew saved.
Jane			Bally-shan	Glasgow	Newton	25 Feb.	Two drowned.
Jenny	N. Shields	Christey	[non	London	Bar of Ballysh	24 Mar.	
180 Jeremlah					Worms Hd	30 Mar.	Crew saved.
John & Ann	Shields					16 Feb.	
John & Eliza sch.	Pwllhely				Youghal	17 Feb.	
Kennedy	Balbriggan				Ardglass	20 Mar.	Onedrowned.
185 Latona		Waters	Langhorne	Bristol	Hook S.	21 Nov.	
Liberty	Shields	Mann	Cuba	London	since	24 Feb.	Crew saved.
Liberty	Henderson	Henderson	Shields	London	Humber	12 Mar.	Crew drowned.
Liverpool	Henderson		Newcastle	Yarmouth	N. Sea	23 Mar.	
Mary	Name on a	barque seen	abandoned	in 42° N. 11°	W.	10 Feb.	13 drowned.
190 Mary-ann			Demerara	Shetland	Foundered	26 Feb.	Crew saved.
Melantho			Peterhead		S. Head		
Mermaid			London		Vera Cruz		
Oak brig	Montrose				Holy I.	17 Mar.	Crew saved.
Palmra	Poole				Shields Entr.	Feb.	Crew saved.
195 Peril			Holyhead	Lancaster	Rossall Pt.	10 Mar.	Crew saved.
Providence	Blyth	Hedley	Sunderland	London	Weser	1 April.	Crew saved.
Providence			Blyth	Dublin	Humber	24 Feb.	Crew lost.
Relief		Cuming	St. Ubes		Abandoned	17 Mar.	
Resolution	Sunderland	Heppel	Sunderland		Portugal C.	1 March	Five saved
200 Rowena	Belfast				Redcar	Feb.	Crew drown.
Sea-lark	Plymouth		Azores		Skerries	24 Feb.	
Sedulous	Sunderland				Penzance	24 Feb.	Crew saved
Sir C. M'Carthy	Liverpool	Duff			Sheringham		
205 Susanna & Mary			Aberdorey	at Madras for	Holdfast B	17 Sept.	Crew saved.
Thalia		Biden	Wreck sold	6000 rupees	Panamayo		
Thomas		Armstrong	Liverpool	Teresa	Lough Foyle		
Two Brothers		Michelson	Newcastle	Lisbon	Tercera	22 Feb.	Crew saved.
Tyro		Smith	Arglass	Liverpool	Cascaes B.	22 Mar.	
210 Victoria	Exeter	Adams	Newport	Newcastle	C. Ireland	15 Feb.	Crew saved
Vigilant		Penrice	Newport	Bristol	Scilly	17 Mar.	Crew saved.
Volusia	Salcombe	Grant			Foundered	Feb.	Crew drowned
Wasbeck brig	Sunderland	Smith	Cork	Swansea	Skerries	9 Feb.	
Wellington			Halifax	Berbice	Bideford	19 Jan.	

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

RETIRED COMMANDERS, at 8s. 6d. per diem:—T. Solway, W. Jameson, T. Leach, G. Fisher, J. Mant, Edward Starley, D. Chambers, A. Stirling, W. Hertridge.—Retired Commander, James Brockinan to the out-pension of Greenwich Hospital.

APPOINTMENTS.

PROMOTED WITHOUT APPOINTMENTS:—*Capt.*, T. Shepherd; *Master*, J. Saunders; *Lieut.*, P. Galloway, to be *Flag-Lieut.* to Admiral Sir R. Otway; T. Skinner, Com. ANDROMACHE, 28,—*Clerk*, J. Sadler. APOLLO, *troop-ship*,—*Second Master*, H. D. Burney; *Clerk*, R. Doyle; *Assistant-Surgeon*, T. Jewell. ARROW, *cutter*,—*Lieut.* to command, B. Sullivan; *Assistant-Surgeon*, J. Findlay; *Clerk in charge*, J. Archer. ASIA, 84,—*Com.* F. Newell. ATHOL, *troop-ship*,—*Second Master*, R. Mudge. BADGER,—*Lieut.* to command, R. Percival. BELLEROPHON, 80,—*Captain*, C. J. Austen. BRITANNIA, 120,—*Captain*, H. Dundas; *Mates*, R. Syngé, Hon. T. Spencer; *Assistant-Surgeons*, W. F. Carter, W. Roberts, J. Caldwell. BRITOMART, 10,—*Clk.*, T. Brooman. CARRON, *St. V.*,—*Lieut.* (acting) M. Thomas. CALLIOPE, 28,—*Purser*, W. Drake. COAST GUARD,—*Commanders*, Sir B. Hagan, R. F. Gambier, T. Mathias, F. E. Parlyb, G. A. Holsted, Charles Walcott, J. M'Hardy, J. Maynard, J. Morgan; *Lieuts.*, R. Littlewirth, J. Foord, T. J. Yates, T. Lavington, J. Rendall. COLUMBIA, *St. V.*,—*Master* to command, M. A. Thompson; *Second-Master*, C. H. Miller. CONFIANCE, *St. V.*,—*Lieut.* to command, E. Stopford. CORNWALLIS, 74,—*Assist.-Surgeons*, D. Browne, C. Kinnear, C. Daniell Rodger, — Caldwell. CRUISER, 16,—*Com.* R. H. King. DEE, *St. V.*,—*Lieutenant*, J. Mottley. DIDO, 18,—*Master*, W. Emeé. EXCELLENT, *As.-Surg.* H. Baker; *Mas.*, H. Craven; *Mates*, G. Hamilton, R. Moreman. GOLDFINCH, *Packet*—*Assist.-Surgeon*, R. Chambers. HASLAR HOSPITAL.—*Assistant-Surgeons*, W. Roberts, W. F. Carter. HASTINGS, 74.—*Mate*, G. Moyle; *Mids. Hon.*, E. Elliot, F. B. Quin, R. T. Bedford, R. D. Courey; *Vol. 1st class*, C. Adam; *Clerk*, J. J. Winsom. HOWE, 120,—*Clerk*, W. Weaver. LILY, 10.—*Purser*, J. Wickham. MADAGASCAR, 46.—*Captain*, P. Wallis; *Lieut.*, G. C. Adams; *Second Master*, J. Gallon; *Assist.-Surgeon*, H. Slight. MALABAR, 74.—*Com.* W. P. Stanley; *Lieuts.*, H. White, G. Kenyon, G. Harper, W. Metcalfe, A. Little, G. Dixon; *Master*, J. Thomas; *Mate*, C. Powell; *Mids.*, D. Miller; *Naval Instructor*, G. Gillham; *Chaplain*, Rev. J. Cooper; *Surgeon*, W. Bell, (a); *Assistant-Surgeons*, W. Lambert, John Minter; *Purser*, J. Walker. MEDEA, *St. V.*—*Com.* J. Nott; *Surgeon*, J. Syme; *Purser*, J. C. Phillips; *Assistant Surgeon*, Housely. MELVILLE, 74.—*Extra Mate*, G. Rutherford; *Col. Vol.*, F. Lloyd. METEOR, *St. V.*—*Mate*, A. B. Dawes. ORESTES, 18—*Com.* W. Holt. PANTALOOON, 10.—*Assistant-Surgeon*, H. Morris. PEMBROKE DOCKYARD.—*Superintendent Captain*, S. Jackson. PICKLE, 5.—*Assistant-Surgeon*, W. Bayne. PRINCESS CHARLOTTE, 120.—*Lieutenant*, W. B. Oliver; *Vol. 1st class*, W. Peel. ROYAL ADELAIDE, 120.—*Lieut.*, E. T. Smyth; *Second Master*, E. Moore; *Assistant Surgeons*, Dr. P. Lowry, G. St. George Bowden. ROYAL GEORGE Yacht.—*Assistant Surgeon*, H. Morris. SAVAGE, 10.—*Assist-Surg.*, A. B. Mc Pherson. SERINGAPATAM, 46.—*Lieut.* J. A. Riddell. SPARROWHAWK, 16.—*Com.*, G. Elliot. TALVERA, 74.—*Com.*, J. Grant. TALBOT, 28.—*Master*, J. Biddlecombe; *Second Master*, W. Mainprise; *Mates*, E. Heathcote, G. Pigot; *Mids.*, H. Ingram; *Clerk*, C. Syne; *Surgeon*, B. Maxwell; *Assistant Surgeon*, S. Donnelly; *Purser*, Dyer. TERMAGANT, 10.—*Lieutenants*, Woodford, J. Williams; *Mate*, W. Clayton; *Second Master*, Belleston Hancorn; *Assist.-Surgeons*, Cunningham, J. Mc Ilroy; *Clerk in charge*, Hemer. VICTORY, 104.—*Master*, J. Armstrong; *School-master*, H. Hunt. WINCHESTER, 52.—*Lieutenant*, F. Lowe.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ANDROMACHE, 28, *Captain* R. L. Baynes, fitting for West Indies. APOLLO, *troop ship*, Mr. E. Karley, Portsmouth. ATHOL, *troop-ship*, Mr C. Bellamy, 18th April, sailed for Quebec. BELLEROPHON, 80, *Captain* C. J. Austen, 9th April, arrived from Gibraltar; Portsmouth, fitting. CAMELEON, 10, *Lieut-Com.* J. Bradley, 5th April, arrived at Portsmouth; 17th, paid off. COLUMBIA, *St. V.*, 16th March, arrived at Portsmouth. CRUISER, 16, fitting at Chatham. DASHER, *St. V.*, fitting at Chatham. EDINBURGH, 74, *Captain* W. Henderson, 8th April, arrived at Portsmouth; 18th April, sailed for Quebec with troops. FAIRY, *sur. vessel*, *Capt.* W. Hewett, 2nd April, arrived at Harwich. HASTINGS, 74, *Captain* E. F. Loch, 13th April, arr. at Portsmouth to embark Lord Durham. INCONSTANT, *Capt.* D. Pring, 10th April, sailed for Halifax with troops. MADAGASCAR, 42, *Captain* Sir T. Peyton. (superseded through ill health, by *Captain* Wallis.) arrived at Portsmouth; 10th April, moored into harbour. MALABAR, 74, *Captain* Sir W. Montague, 9th April, sailed for Cork. MEGÆRA, *St. V.*, *Lieut.* H. C. Goldsmith, 4th April, sailed for Malta. MODESTE, 18, at Portsmouth, fitting. NAUTILUS, 10, *Lieut.* G. Beaufov, Plymouth, fitting. ORESTES, 18, *Com.* W. Holt, 8th April, arrived at Portsmouth; 19th, paid off. PANTALOOON, 10, *Lieut.* G. Mc Donnell, Portsmouth, fitting. TERMAGANT, 3, *Lieut.* W. J. Williams, at Portsmouth, fitting. Digitized by Google

ABROAD.

ALLIGATOR, 28, Captain Sir G. Bremer, 18th March, arrived at Teneriffe. ASIA, 84, Captain W. Fisher, 24th March, at Malta. BABHAM, 50, Captain A. L. Corry, 26th March, at Toulon. BEACON, Sur. V., Lieut. Graves, 2nd April, at Malta. BRITOMART, 10, Lieut. O. Stanley, 10th March, at Teneriffe. CALLIOPE, 28, Captain T. Herbert, 16th March, at Teneriffe. CARYSFORT, 28, Captain H. B. Martin, 28th March, left Smyrna for England. CHILDERS, 16, Com. Hon. H. Keppel, 10th Jan., in B. Benin. CLIO, 16, Com. W. Richardson, 13th March, arrived at Gibraltar; 2nd April, at Malta. COMUS, 18, Com. Hon. P. P. Carey, 26th Feb., arrived at Jamaica from Carthage. CURLEW, 10, Lieut.-Com. E. Norcott, 12th Feb. left Sierra Leone. DIDO, 18, Captain L. Davies, 2nd April, arrived at Gibraltar. DONEGAL, 78, Captain J. Drake, 22nd March, at Lisbon. EDINBURGH, 74, Captain W. H. Henderson, 22nd March, at Lisbon. FAVORITE, 18, Com. W. Croker, 12th Jan. arrived at Cape; 2nd Feb. remained. GRIFFON, Lieut. G. Dunbar, 27th Feb. arr. at Jamaica. HARPY, Lieut. H. S. George, 27th Feb. arr. at Jamaica. HORNET, 6, Lieut. Baillie, 9th Feb. arr. Jamaica, from Chagres. IMOGENE, 28, Capt. H. W. Bruce, 31st Oct. spoken in 7° S. and 154° W. LARNE, 18, Com. P. Blake, 10th Feb. left Calcutta for Rangoon. MAGICIENNE, 24, Captain J. Midway, 8th April, left Lisbon for Cadiz. MAOPIE, Lieut. T. S. Brock, 14th March, at Malta. MINDEN, 74, Captain A. R. Sharpe, C.B., 15th March, arrived at Madeira, with troops on way to Quebec. PEARL, 20, Captain Lord Clarence Paget, 7th March, arrived at Norfolk, W.S. from Bermuda. PEMBROKE, 74, Captain F. Moresby, 10th March, arrived at Malta; 2nd April remained. PIQUE, 36, Captain E. Boxer, 5th March, arrived at Halifax from the United States. PORTLAND, 52, Captain D. Price, 27th April, arrived at Gibraltar; 7th April, at Lisbon. PRINCESS CHARLOTTE, 104, Captain A. Fanshawe, 2nd April, at Malta. PYLADES, 18, Com. W. L. Castle, 2nd Feb. at Cape; arrived 23rd Jan. RACEHORSE, 18, Com. H. W. Crawford, 18th Feb. left Lisbon. RACER, 16, Commander J. Hope, 10th February, arrived at Jamaica. RAINBOW, 28, Captain T. Bennet, 25th February, arrived at Jamaica from Vera Cruz. RAPID, 10, Lieut. Hon. D. R. Kinnaird, 2nd April, at Malta. RATTLE-SNAKE, 20, Captain W. Hobson, 10th Feb. left Calcutta for Rangoon. RODNEY, 92, Captain H. Parker, 2nd April, at Malta. ROVER, 18, Com. C. Eden, 25th Dec. left Valparaiso for Quilla. RUSSEL, 74, Captain Sir W. H. Dillon, 27th March, left Malta for England. SAPHO, 16, Com. T. Fraser, 24th Feb. arrived at Jamaica. SATELLITE, 18, Com. J. Robb, 11th Feb. arrived at Halifax. SCORPION, 10, Lieut.-Com. C. Gayton, 25th March, left Malta for Barcelona. SCOUT, 18, Com. R. Craigie, 13th Jan. arrived at Ascension. SCYLLA, 16, Com. Hon. J. Denman, 22nd March, at Lisbon. SERINGAPATAM, 46, Captain J. Leith, 15th Feb. arrived at Jamaica from Barbados. SERPENT, 16, Com. R. L. Warren, 10th Feb. left Jamaica. SNAKE, 16, Com. A. Milne, 16th Feb. arrived at Jamaica; 3rd March, sailed for Carthage. THALIA, 46, Captain R. Wauchop, 2nd Feb. at Cape. THUNDER, Sur. Ves., Lieut. E. Barnett, 10th Feb. arr. at Nassau. TRINCULO, 16, Com., H.E. Coffin, 22nd Mar., at Lisbon. TYNE, 28, Captain J. Townsend, 2nd March, arrived at Malta. VANGUARD, 30, Captain Sir T. Fellowes, 2nd April, at Malta. VICTOR, 16, Com. R. Crozier, 7th Feb. arrived at Calcutta from Madras. WANDERER, 16, Com. T. Beechby, 14th Feb. arrived at Jamaica. WASP, 16, Lieut. Crozier, 26th March, left Malta for Naples. WELLESLEY, 74, Captain Sir F. Maitland, 24th Jan. arrived at Ceylon. WOLF, 10, Com. E. Stanley, 12th Dec. arrived at Trincomalee. WOLVERLYNE, 16, Com. Hon. E. Howard, 5th April, arrived at Gibraltar. ZEBRA, 16, Com. R. Mc Crea, 1st Jan. left Calcutta for Penang.

Births.

At St. Lawrence, Isle of Wight, the lady of Lieut. Keane, R.N., of a son and heir.

At Southfield, Ryde, Isle of Wight, on Friday, 26th January, the lady of Lieut. Jas. Geo. Mackenzie, R.N., of a son.

At Southsea, the wife of Jason Lardner, Esq., surgeon, R.N., of a daughter.

At Weymouth, on the 26th March, the lady of Lt. Keatley, R.N., of a son.

At Southsea, on the 20th March, the wife of Lt. C. Holbrook, R.N., of a son.

At Titchfield, on the 19th March, the lady of George Young, Esq., Commander R.N., of a son.

At Haslar, on the 20th inst., Mrs. Lee, wife of Lieut. W. V. Lee, of H.M.S. Victory, of a son.

Marriages.

At Plymouth, Alfred Howard, Esq., of Melbury-terrace, Dorset-square, London, to Emily, daughter of Captain Sir J. J. Gordon Bremer, R.N., of Compton, Devon.

At Ringwoud, Kent, on the 7th April, Lieut. H. E. Wingrove, R.N., to Sarah, youngest daughter of the late John Morris, Esq., of the Archbishop's Palace, Canterbury.

At Quebec, Lieut. J. Orlebar, R.N., to Harriet, daughter of — Hale, Esq., Receiver-General of Lower Canada, granddaughter of Lord Amherst.

At Bideford, North Devon, on the 26th March, the Rev. Francis Richard Begbie, Fellow of Pembroke College, Cambridge, and Vicar of Diseworah, Leicestershire, to Elizabeth Jane, youngest daughter of Vice-Admiral H. R. Glynn, of Bideford.

At Gibraltar, on the 9th Feb., by the Rev. J. Buchanan, Chaplain to the Forces, Mr. Charles F. Stevens, of H.M.S. Minden, to Mary Eliza, daughter of the late Captain J. Mullenger, of the 10th Infantry.

At Poole, by the Rev. P. W. Jolliffe, W. Overell, Esq., solicitor of Ringwood, to Fanny, eldest daughter of the late Captain Deen, R.N., of the former place.

At Fordham church, by the Rev. M. Dodd, Lieut. R. C. Tomlinson, R.N., of Braintree, Essex, to Mary Penelope, eldest daughter of the Rev. M. Dodd, Rector of Fordham, Essex.

At Bath, Captain W. Robertson, R.N., to Elizabeth, daughter of the late H. Pater, Esq., of Bristol.

At Clifton, on the 20th March, Thos. Foreman Gape, Esq., of St. Albans, to Fanny Louisa, eldest daughter of the late Vice-Admiral Thomas Woolley.

At Greenwich, John Taylor, eldest son of the late John Bracey, Esq., of North Yarmouth, to Elizabeth Holden, second daughter of Lieut. De Montmorency, R.N., of Greenwich Hospital, and grand niece of the late Lord Viscount Frankfort de Montmorency.

At Maitland, New South Wales, Robt. Pringle, Esq., of Carrington-park, Hunter's-river, to Miss Inches, eldest daughter of John Inches, Esq., R.N., and surgeon to the Australian Agricultural Company.

At Freshford, L. H. Wray, Esq., Commander, R.N., to Charlotte Eliza; and at the same time, Walter Etrick, Esq., son of the Rev. W. Etrick, of High Barnes Park, in the county of Durham, to Sophia Cumberland, eldest and third daughters of Commander E. Burt, R.N.

At Turnworth, on the 16th April, by the Rev. Thomas Tyrwhitt, Lieutenant J. Groves, R.N., of Upway, to Harriett, daughter of the late Mr. Levi Groves, of Minterne, Dorset.

On the 7th April, at Ringwoud, Kent, Lieut. H. E. Wingrove, royal navy, to Sarah, youngest daughter of the late John Monius, Esq., of the Archbishop's Palace, Canterbury.

Deaths.

At Southsea, aged 71, Rear-Admiral John Hayes, C.B.

At Tudor Lodge, Cheltenham, Jan. 21, Rear-Admiral Robert O'Brien, on the retired list.

At Teignmouth, in Devonshire, on the 10th March, Rear Admiral George Tobin, C.B.

At Stainton, Yorkshire, R. Worsley, Esq., Vice-Admiral of the White, aged 70.

On the 21st March, Vice-Admiral Hon. Philip Wodehouse.

At New York, suddenly, on the 30th January, Captain Thomas Barclay, of the royal navy, (1834,) in 45th year of his age.

At his residence, in St. Thomas, aged 69, Captain John Greenway, R.N.

In Cornwall, on the 23rd March, John, only son of Captain Thos. Searle, C.B., of her Majesty's ship Victory.

At Florence, on the 10th March, Captain Lord Selsey, in his 61st year.

At West Lodge, Bexley-heath, Kent, on the 30th March, Selina, wife of Capt. Badcock, R.N.

On 25th Feb. in the Naval Hospital, Malta, Lieut. Wm. Arlett, who commanded her Majesty's steamer Confiance.

At Bath, on the 17th March, Captain Henry Haynes, royal navy, aged 61.

On his passage to England, on the 14th March, Captain Southey, R.N., late harbour-master of Demerara.

At Chichester, lately, Commander Geo. F. Dixon, lately serving in H.M. ship Caledonia.

At Maidstone, Ann, relict of Lieut. Pearson Boys, R.N.

At West Cowes, on the 20th March, of consumption, Ellen, youngest daughter of Mr. John Bates, R.N., Secretary of the Royal Yacht Squadron, aged 19.

At Gorticross, County Down, Alexander Gilfillan, Esq., surgeon, R.N., in his 45th year.

On the 28th March, after a few days' illness, Rufaue Appleby, sixth son of Commander Pritchard, of H.M.S. Donegal, aged five years.

At Heath, near Wakefield, on the 20th of January, W. Mills, Esq., Lieut. of the R.N. of Wellington, Durham, aged 41.

At Antigua, Lieut. Owen, commanding the Carron steam-vessel.

At Farleigh Priory, Maidstone, on the 21st March, in his 75th year, Sir John Deas Thomson, K.C.H., F.R.S., and F.L.S., late Commissioner and Accountant-General of the Navy.

A few days since, Captain Parkinson, R.N., 1808.

Lately at his residence, Teddington, Middlesex, John Weymouth Esq., M.D., formerly a surgeon in the navy.

Lately, at Alphington, Commander William Notter, R.N., retired.

At Chew Magna, Somersetshire, on the 24th ult., Alexander White, Esq., surgeon, R.N.

In France, Lieut. Isaac Haberfield, R.N.

On the 11th March, at 17, Portugal-street, Lincoln's-inn, John Elias, eldest son of the late Lieut. W. Drew, R.N., of consumption, in his 16th year.

At Cheltenham, Commander C. S. Timins, R.N., in his 66th year.

At her residence, Brighton, on the 16th

April, Sarah Isabella, eldest daughter of the late Admiral John Brisbane.

At Stonehaven, in his 63rd year, Wm. Donaldson, Esq., surgeon, R.N.

At Clifton, on the 10th April, Henrietta Barwell, second daughter of Captain Peter Rye, R.N.

At Deal, Commander John Clayson, aged 70.

At Taunton, Commander C. Spencer, R.N., aged 85.

Lately, at Mile-end, Portsea, Mrs. E. H. Jeans, aged 50, widow of the late Lieut. Jeans, R.N.

METEOROLOGICAL REGISTER,

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

MARCH, 1838.													
Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	W.	In. Dec. 29.37	In. Dec. 29.35	40	48	32	49	S.W.	S.W.	8	7	Qb.	Qbch. (3)
22	Th.	29.50	29.53	38	38	30	39	N.W.	N.W.	5	5	Qo.	Qo.
23	F.	29.55	29.51	33	37	28	38	N.W.	N.W.	5	4	Qb.	Bcps. (3)
24	S.	29.56	29.52	38	46	33	47	S.W.	S.W.	3	4	Bc.	Od. (4)
25	Su.	29.80	29.92	40	50	34	51	W.	W.	5	4	Qbc.	Qbc.
26	M.	30.12	30.12	42	54	29	55	S.E.	S.E.	1	1	Bm.	O.
27	Tu.	30.30	30.33	43	52	32	54	E.	N.E.	2	2	B	Bm.
28	W.	30.51	30.52	42	51	35	52	N.E.	E.	3	2	B.	Bm.
29	Th.	30.51	30.51	41	54	36	55	E.	E.	1	2	Bf.	B.
30	F.	30.47	30.40	43	54	45	57	N.	S.W.	1	1	Bcm.	Bc.
31	S.	30.16	30.12	45	44	40	50	N.	N.	3	4	O.	Os. (4)

MARCH—Mean height of the Barometer=29.799 inches; Mean Temperature=41.8 degrees; Depth of Rain fallen=0.95 inches.

APRIL, 1838.

1	Su.	30.18	30.18	34	41	27	42	N.	N.	4	4	Bcps. (2)	Bcps. (3)
2	M.	30.00	29.96	34	42	21	44	W.	W.	3	4	B.	Bc
3	Tu.	29.96	29.93	36	43	30	43	N.W.	W.	2	2	B.	Bc.
4	W.	29.91	29.96	47	53	38	53	N.	N.W.	4	4	Bc.	O.
5	Th.	30.01	29.96	50	57	41	57	W.	S.W.	5	6	B.	Bc.
6	F.	29.70	29.73	52	58	47	59	S.W.	S.W.	4	4	O.	O.
7	S.	29.55	29.35	51	52	49	53	S.W.	S.W.	5	6	Qor. (1) (2)	Qor. (3)
8	Su.	29.18	29.31	40	47	39	48	W.	N.W.	6	6	Qor. (2)	Qbcph. (3)
9	M.	29.74	29.80	42	46	37	49	N.W.	N.	4	4	B.	Bc.
10	Tu.	30.05	30.07	52	60	37	60	S.W.	S.W.	3	3	Bcm.	O.
11	W.	30.17	30.16	53	63	45	64	S.	S.W.	3	3	B.	B.
12	Th.	30.19	30.21	46	54	40	55	N.W.	N.W.	5	6	B.	Qb.
13	F.	30.25	30.22	42	48	35	49	N.W.	N.	4	4	Bc.	Bc.
14	S.	29.96	30.00	47	48	40	49	W.	N.W.	1	1	O.	O.
15	Su.	29.82	29.70	45	55	42	56	S.W.	N.W.	4	6	Or. (2)	Qbcph (4)
16	M.	29.70	29.66	40	40	36	42	N.W.	N.W.	8	10	Qbchl. (2)	Qbc.
17	Tu.	29.60	29.64	39	43	30	44	N.W.	N.W.	6	4	Qbc.	Oprh. (3)
18	W.	29.67	29.69	36	42	34	43	N.W.	N.W.	5	4	Qos. (2)	O.
19	Th.	29.71	29.71	34	40	32	42	N.W.	N.	5	5	Os. (2)	Oprh (3)
20	F.	29.74	29.72	41	38	34	42	N.	N.	3	3	Dcps. (2)	Os. (3)

ORIGINAL PAPERS.

JUNE, 1838.

SUBMARINE VOLCANO NEAR THE EQUATOR.—*Atlantic Ocean.*

THE attention of the Academy of Sciences at Paris has been lately occupied by the subject of submarine volcanos in the Atlantic ocean. We find in the *Comptes Rendus* for April last, a paper by M. Daussy, read on the 5th March, containing a collection of the statements which have been made from time to time by different vessels, and from which he concludes that the shocks experienced by them about twenty miles south of the equator, on the meridian of 20° or 22° W. longitude, indicate the existence there of a submarine volcano. M. Daussy alludes to the appearance of these phenomena near the Western Islands, and the more recent one of the present Graham shoal in the Mediterranean, in justification of his conclusions; and makes some remarks respecting the difficulty of erasing the numerous *vigias* from the charts, in which we perfectly coincide. The authority for erasing these bugbears, to seamen, must be founded on strict and frequent search—such as that commenced in our chart of the “Eight Stones,” a danger which may be considered as one of that genus. At the same time that we rejoice to see so interesting and important a subject in such able hands as those of M. Daussy, we are relieved from the necessity of translating his paper, by referring our readers to our volume for 1835, (No. 4, first series,) in which they will find enumerated seven of the instances adduced by him, in a communication from our valuable correspondent, Mr. Purdy, whose attention was directed to this subject by the extraordinary instance related (in p. 577, same vol.) by Captain Middleton, which occurred to the barque “Crown,” of Liverpool. The effect of a submarine eruption on a ship is described, by those seamen who have experienced it, to be similar to that of dragging the ship bodily along a roughly paved road; or like that violent shaking which the chain cable produces when running through the hawse; and this effect appears to have been felt in a greater or less degree in the various instances now brought forward. The following are two further accounts respecting this submarine volcano, which M. Daussy has added to those in the *Nautical Magazine*. The first is from the journal of Captain Jager, commanding *La Philantropie*, of Bordeaux.

“On the 25th January, 1836, at nine in the evening, being in about $0^{\circ} 40'$ S. latitude, and $20^{\circ} 10'$ W. longitude, we felt an earthquake, which made the vessel shake during three minutes, as if she were scraping along a bank, and to such a degree that I was certain she was aground.” Further on, he says, “From the 13th to the 16th of March, we were in sight of an American vessel, the *St. Paul*, of Salem, going to Manilla. This vessel which we had seen on the line, had felt the same earthquake that we had experienced, and at the same hour.”

The last is from the Journal of the Asiatic Society, for 1836, as follows:—

“Mr. T. L. Huntley presents some volcanic ashes, collected at sea by Captain Ferguson, of the ship ‘*Henry Tanner*.’ These ashes were black, and had the same consistence as those of coal. The spot where they were picked up was $0^{\circ} 35'$ S. and $15^{\circ} 50'$ W., the sea being in a violent agitation.” In a former voyage, made by the same officer, and almost in the same place, lat. $1^{\circ} 35'$ S. and $20^{\circ} 27'$ W., he had been alarmed by hearing a very great noise. The captain and officers thought the ship had struck on a coral rock; but in sounding they could not reach the bottom.

The notices of this singular phenomenon having been brought under the attention of the hydrographer to the Admiralty, the *Beagle*, (Captain Wickham,) on her way to her surveying ground on the north coast of Australia, was directed to try for soundings in that neighbourhood; and we have the track of the *Beagle* across the position, with no bottom, in two places with 190 fathoms; one in $0^{\circ} 55'$ S., $22^{\circ} 52'$ W.; and the other in the same latitude, in $23^{\circ} 23'$ W., the vessel's course being due west between them.

We cannot leave this interesting subject, without expressing the hope, if any of our nautical readers can throw additional light on it, by any new facts, that they will communicate them to us; and if they should ever pass the equator, near the above-mentioned longitude, that they will keep a look-out for any of the indications alluded to; and that, if opportunity should offer, they will also obtain a deep cast of the lead.

NOVA SCOTIA LIGHTHOUSES.

[The following important caution to vessels navigating the coast of Nova Scotia, has been addressed to Captain Beaufort, R.N., hydrographer to the Admiralty, by Lieutenant E. N. Kendall, R.N.]

SIR,—I beg to communicate for your information, a circumstance which has often caused serious loss and damage to vessels navigating the coasts of Nova Scotia and New Brunswick; in the spring months, as a caution inserted in the Admiralty charts may apprise navigators of the mistakes they may otherwise, and fatally, commit.

The farms fronting the sea coast are separated by worm fences, which in most cases are at right angles to the coast line; and when their direction happens to be such that the prevalent snow storms in winter cause a deposition, often several feet in height, to leeward of them, which continues some weeks after the disappearance of the snow from the fields themselves, they are exactly similar in appearance to the lighthouses on the coast, which latter are mostly built of wood, and painted white; and so perfect is the resemblance, that the masters of coasters, and persons well acquainted with the coast, are themselves often misled. I believe it is in contemplation by the commissioners of lighthouses to paint some distinguishing marks on them, by which these errors may be avoided.

I have the honour to be, &c.,

E. N. KENDALL, *Lieut. R. N.*

NOTES ON CURACAO,

By Lieutenant A. W. B. Greevelink, of the Swedish Royal Navy.

THIS island is moderately high, and can be seen at a considerable distance from sea. The *table mount* situated near the S.E. end, Ronde Klije (round rock) towards the N.E., and *table mount, St. Hieronymus*, with St. Christopher's mountain in the west, are the most elevated parts of it; the latter being about 400 yards in perpendicular height.

The soil, formed of a calcareous rocky substance, but thinly covered with strata of fertile earth, is rendered still more barren by long series of dry weather, and a total want of running water, so that at present it only produces maize, some sorts of pot-herbs, earth-roots, and a tolerable quantity of fruits, renowned for their excellence. A few species of wood, like campeche, mahogany, yellow, and mansanille trees, grow here and there, though in small quantities, besides an abundance of cactus, aloë, and other shrubs. The only productions still exported are salt and lime, which with the occupation of breeding large herds of cattle, and raising vegetables, form the pursuits of the country people. The population in 1833, according to a published statement, was 15,027; of whom 2,602 were whites, 6,531 coloured, and 5,894 black people. The climate is healthy, and even favourable for the cure of some diseases. The wind, nearly always from the E.N.E. and E.S.E., blowing with a fresh breeze, very seldom increases to a storm. The periods at which it has its greatest force are when the sun has greatest

north and south declination, increasing with the rising, and diminishing with the setting, of the sun. The whole atmosphere is thickened by the mist which it brings from the sea: but during night, when there is only a gentle breeze, the air is pure and fresh, and the sky, with its millions of glittering stars, extremely beautiful. Hurricanes do not reach so far as Curacao in general, although they now and then have crossed this way. Earthquakes are unknown here.* Although destitute of rivers there is plenty of good well-water; and rain-water, collected in cisterns, is also to be obtained.

The coasts of Curacao may be considered clean, though you are obliged to keep at least half a mile from shore, along the south side, on account of a bank of sand and coral, extending about a cable's length off. To the north the coast is everywhere bluff and clean, and its rocky shores almost overhang the sea. On the southern side there are several harbours, the principal of which is that called St. Anne, situated 14 miles from the east point, (point Canon,) and indisputably one of the finest in the West Indies. Its entrance, formed by two very low tongues of land, strongly fortified, is narrowed inward, like the neck of a goglet, and between the batteries not more than 110 yards wide. On the eastern side stands fort Amsterdam, and the principal town, named Willemstadt, containing 1,900 inhabitants. On the west side stands Rif fort, and a part of the town formerly occupied only by Spaniards, and distinguished by the name of Otrabande (other side.) Having passed the narrow entrance, you are in that part of the bay called the haven, on the quays of which are warehouses and stores, and excellent shelter, where ships of every size may careen or refit. From the haven extends the inner part of the bay, called Schottegat, where a hundred ships may ride in perfect safety.

Ships bound to the harbour of St. Ann, ought to make point Canon, and run down the coast at one or two miles distance, so as to avoid getting to leeward of the entrance of the harbour, as the current sets strongly to the westward. At a mile to windward the pilot or master-attendant, will be found generally in his gig. He directs every necessary precaution, the most common of which is, to have a hawser ready to carry on shore, and an anchor to let go in case the hawser should not reach it in due time, a boat to be lowered, and your sails to be cleared up in a moment, especially when blowing hard from the N.E. With the breeze large, or from the S.E. quarter, entering the harbour is much facilitated; because, by standing off a little you may luff up gradually, but on the other hand, with northerly winds, you are obliged to keep close along the reef, which

* The magnetic variation, according to my observations, agreeing with those of other officers mentioned, is 4° E.

stretches a cable's length off from the east-point of the harbour. The best mark in coming down, is to keep the westernmost point of the Rif fort, directly under the sharp point of *Priest-mount*, and the moment you see from the fore-castle, the crane or crab situated on an elevated spot, coming forth from behind Fort Amsterdam, you must luff up boldly, and stand in, keeping a little to the windward-side of the channel. Be careful that your yards are braced up sharp, previous to coming in, and to be ready to clue up your square sails in a moment as soon as they fall aback, otherwise, with strong gusts, you may be driven on the lee shore of the harbour, which is not so clean as the opposite.

This island was delivered over to Captain Frederick Watkins, by a treaty the 13th September, 1800, to protect it, (although in open war with the Batavian government,) against a number of French banditti, who, under one Bresseau, were plundering and ravaging the country; and it was restored in 1803. Such events of honourable confidence in the character of an enemy, shown by governor Lauffer, and of unrestrained generosity to protect the feeble, although an enemy against an oppressor on the other hand, are worthy of preservation.*

A. W. BISCHOP GREEVELINK.

ADDITIONAL LIGHT ON CAPE GRINEZ, *on the South Side of the Strait of Dover.*

[Received from the French Government.]

Hydrographic Office, Admiralty, May 2nd, 1838.

In November, 1837, a fixed light was placed on Cape Grinez, at the south-west entrance of Dover Strait, in latitude $50^{\circ} 52' 10''$ N., longitude $1^{\circ} 35' 9''$ E., and some accidents which have since taken place have been attributed to the mistaking of this light for the similar light on Dungeness, which bears from it N. 84° W. (N. 61° W. magnetic,) distant eight leagues.

The French government, being desirous to remove all chance of such a dangerous mistake in future, has ordered that a small additional light shall be shown on Cape Grinez from the 1st of October next. It will be placed fifty-five yards W.N.W. from the present light-house, but not so high by twenty-six feet. This additional light will be varied by a flash shown every three minutes, and each flash will be preceded and followed by short eclipses. It will not be visible more than half as far off as the present light, that is to say, in ordinary weather the new light will appear in sight at the distance of three or four leagues.

* This I mention because erroneously stated in the Col. Nav., page 82. Yet the island was taken by surprise on new year's morning, 1807, with four or five ships, under the late rear-admiral, Sir Charles Brisbane, and restored in 1835.

ATLANTIC OCEAN, JAQUET ISLAND.—*Vigia*.

Leadenhall Street, April 20th, 1838.

SIR,—By inserting the following in your valuable magazine, you will oblige your obedient servant,

J. W. NORIE.

ATLANTIC, JAQUET ISLAND.—A letter from Mr. John Scott, dated Jersey, 3rd April, 1838, and addressed to Mr. Norie, states that Jaquet Island, in about latitude $4^{\circ} 53'$ N., and longitude $39^{\circ} 29'$ W. was seen by the brig *Seaflower*, of Jersey, at 5 A.M., on the 25th April, 1836. On seeing the isle the vessel hove to and sounded, but no bottom was found at 100 fathoms. The isle is half a mile in length, and about 300 feet or 100 yards high, above the surface of the sea. Rocks may be seen extending a cable's length from the S.S.E. cape, which appears to be the highest land, with a vast number of birds, such as are seen on the banks of Newfoundland. By the ship's course and distance, run from 6 A.M. to noon, the isle is estimated to lie in the position above mentioned.

Mr. Thomas Le Gros, mate of the *Seaflower*, sketched the appearance when the isle bore between E.N.E. $\frac{3}{4}$ E., and E. $\frac{1}{4}$ S. by compass; *is sure that it is not an iceberg*. Latitude at noon, $46^{\circ} 50'$; course after 6 A.M. to noon, W.N.W., or W. $\frac{1}{4}$ S. true forty-eight miles. Ship's longitude at noon, by dead reckoning, (having no chronometer,) about $40^{\circ} 41'$ W.

In Purdy's Memoir on the Atlantic, page 370, the position assigned to the isle is, latitude $46^{\circ} 55'$, longitude $39^{\circ} 30'$.

ARROWSMITH BANK.—*West Indies*.

13, Green's Row, Chelsea, 30th May, 1838.

[The following account of a bank of considerable extent, which has not yet made its appearance in our charts, will be read with much interest by our West India cruisers, who are indebted for it to the attention of Captain John Arrowsmith, of the barque *Rosalind*.]

SIR,—I beg leave to inform you of the existence of a bank, of which I have seen no prior notice, nor its appearance on any chart. This bank I crossed on the 18th June, 1836, in the barque *Rosalind*, on my passage to Belize Honduras, in my track south of the Pedro bank and shoals; I sounded from 11 A.M. till 1 P.M. in fifteen, and found ten fathoms, the least water on it, although there may be less in some parts; the bottom coarse corally sand. The discoloured water was seen from the mast-head as far as the eye could discern to the northward and southward of the ship's track, and the extent of it in an eastern and western direction was about six leagues.

This bank may be confounded with one placed on the last Admiralty chart, called *Thunder Knowl*, in the same latitude, 1° further west, but having left St. John's, Antigua, only five days previous, and arriving at Belize, three days after the 18th, I could not be mistaken in the longitude, which may be depended upon within $\frac{1}{8}$ th of a degree.

In giving an opinion to ship-masters taking this unfrequented track, time may be saved and the distance shortened by it otherwise lost in hauling up to sight the east end of Jamaica; but I should recommend it to none but those well practised in night observations for latitude. In passing to the southward of these shoals the current frequently sets strongly towards them to the northward, and again in proceeding westward at times, in the direction of the rocks, off *cape Gracias a Dios*, particularly in the season of the norths, between November and March, during which season it is extremely hazardous for want of clear weather, therefore, it ought not to be attempted at the said period by merchant ships. These remarks are extracted from journals, kept during twenty-nine successive voyages.

I remain, sir, your most obedient servant,

JOHN ARROWSMITH.

Latitude of ship's track across the bank $16^{\circ} 28' N.$
 Longitude, about $80 28 W.$

NEW LIGHT IN WATERFORD HARBOUR.

Ballast Office, Dublin, 15th March, 1838.

THE Corporation for preserving and improving the Port of Dublin, hereby give notice, that an additional lighthouse has been erected near *Duncannon Fort*, from which a light will be shown on the evening of the 1st June, 1838, and thenceforth will be lighted from sun-set to sun-rise.

Specification given of the position and appearance of the tower, &c., by Mr. Halpin, the inspector of lighthouses.

The new lighthouse tower is situate on the eastern side of Waterford harbour, and bears N.N.E. $\frac{3}{4}$ E. from the Duncannon Fort lighthouse, distant $5\frac{1}{2}$ cables' length. Those two lights kept in line, will lead in the best channel across the bar. The north lighthouse, bears
 From East buoy of bar N.N.E. $\frac{1}{4}$ E. distant $1\frac{1}{2}$ nautic miles.
 — West buoy of bar N.E. $\frac{1}{3}$ N. " 2 "
 — Creden head N.E. $\frac{3}{4}$ N. " 3 "

The light will be a fixed bright light. The tower is circular—coloured white; and the lantern elevated 121 feet over the mean level of the sea. All the bearings are magnetic. Var. $28^{\circ} 30'$.

NOTE.—After the 1st of June next, the lower light now shown towards the bar, from the present Fort lighthouse, will be exhibited only from time of half flood to half ebb, the upper light in same tower, and that towards the anchorage of passage as heretofore.

By order,

H. VEREKER, Sec.

RANDOM RAMBLES.—*The Steam Boat.*

By way of avoiding the annoyance of disturbing the inmates of a large house, at an early hour in the morning, besides the delay of parting from friends and the inconvenience of conveying luggage on board at so unreasonable a time of the day for London vehicles, I settled all this the evening before my departure, and slept on board the steam-packet in which I had taken my passage. Having embarked late, I found my way straight to my berth, after a few words of recognition from the steward, who appeared to be one of those busy active kind of beings well fitted for his station. Everything was quiet on board; a solitary lamp shed just sufficient light to show the darkness around it, and the ripple of the tide against the vessel's side, or the occasional splash of an oar, was all that broke on my ear as I composed myself for rest.

Early in the morning I was awakened by a stunning noise, the most unpleasant I ever experienced. The cause which produced it appeared to shake the whole vessel, and the sound re-echoed from the beams of the cabin over my head in a manner most distressing to hear. Being unaccustomed to steam-vessels I attributed it to something concerning the engine, but soon found from my friend, the steward, that it was occasioned by getting up the steam. This then was the signal for starting; the day had just dawned, and I was quickly tempted by the fineness of the weather to make my appearance on deck, and unobserved, to observe the confusion and hurry of those who had not been so provident as myself in embarking for their passage overnight. Making my way as I could through lanes of port-manteaus, carpet-bags, and boxes of all kinds, intermixed promiscuously with their owners, I retired to a snug corner where I seated myself not far from the place of the helmsman.

"Good morning, Mr. Seaward," said the captain of the vessel, following me to my retreat—"good morning, sir; a fine morning for our work." I had scarcely time to acknowledge the recognition of the worthy old tar by a hearty shake of the hand, than he was summoned away to adjust some matter to which his presence was indispensable. Jack Weatherall, the captain of the vessel, was the very beau ideal of a sailor. Honesty, happiness, and good nature, sat in his weather-beaten countenance; his frame was stout and athletic, well adapted to meet the arduous duties of his station, and the truck-shaped hat on his head, the low crown of which was overcome by its broad flat rim, displayed a polish from the tar-brush which would almost rival Mr. Warren's best, and dubbed him at once one of Neptune's own.

The confusion on deck began to subside; the motley collection of trunks, &c., had disappeared, and some parties quietly arranged them-

selves on the seats prepared for them, while others, in groups, were engaged discussing among other matters the prospects of the voyage before them; and here and there were one or two parading the deck in what they thought true nautical style. Suddenly all conversation ceased, the attention of every one was directed to the engine as it gradually acquired motion, the paddles soon attained their full velocity, and amidst the waving of handkerchiefs and hats on shore and on board, we set out on our voyage.

It was one of the finest mornings in the month of June, the muddy face of the Thames was undisturbed, but for the service of man, while the face of nature rejoiced in the serenity of the weather, and animation and hilarity prevailed among all on board. As we passed down the river I could not help feeling a kind of satisfaction at that good taste of his late Majesty, which induced him, when he was Lord High Admiral, to order the removal of certain pirates who were hung in chains on the bank of the river. They remained dangling about in the air, disgusting objects to behold, at once destroying the beauties of the scenery, a reproach to Englishmen from every foreigner who passed them.

“That’s a noble establishment, Mr. Seaward,” said Captain Weatherall to me, as he turned from a group of his passengers to whom he had been pointing out the Seamen’s Hospital, called the Dreadnought. There she lay floating like a huge mountain on her own element, brightly painted and decorated with the motto,—“SUPPORTED BY VOLUNTARY CONTRIBUTIONS.” “Yes, Captain, Englishmen may look on her with pride, said I, and when foreigners pointed to the gibbet they could point to her as one of those glorious institutions which reflect honour on the character of Englishmen.” “She was first placed there, Mr. Seaward, in 1821, and a deal of good has been done by her since. You see, sir, the benefit of the hospital is open to seamen of all nations; and the poor fellows are not only cured but allowed to remain on board a reasonable time till they have found a berth with health and strength enough to keep it.”

We were now off Greenwich, the vessel’s way being stopped to receive some passengers, and the position in which we lay was perhaps the most favourable that could have been chosen for viewing that noble fabric, the asylum of our naval veterans. “Ah,” said Captain Weatherall to me, “there’s as tight a fellow laid by among the tars there, Mr. Seaward, as ever screwed up a weather-eye. I mean Sir Jahleel Brenton, sir, the lieutenant-governor. I had the honour of sailing with him when he lost the *Minerva*; and if he had taken the finest frigate in the French navy, he could not have behaved more nobly. May be, sir, you may not have heard the rights of the story.” As Captain Weatherall said this his attention was attracted by a boat just come alongside with passengers, which only raised my curiosity the more until he was enabled to rejoin me, when he thus commenced:—

“It was on 2nd July, sir, 1802,”* said Captain Weatherall, returning to me, having given orders to proceed on our voyage, “when that affair happened, and at about nine in the evening, when we grounded on one of the cones that the French were building to form the breakwater off Cherbourg. It was a thick fog at the time, and we had no sooner grounded, with the ebb tide running, when away cleared the fog, and showed us, as we lay, like a lame duck in a gutter, within half gun-shot of Fort la Liberte, within range of a battery of 100 guns, and twenty-five mortars, on isle Pelee, and two gun brigs about three cables’ length ahead of us. Well, sir, what was to be done, but to get off as well as we could; and Jonny Frenchman lost no time in serving it out to us from every gun he could bring to bear. Never was a poor unfortunate ship so mauled, and we could do nothing in return for their favours, sir, but give them a shot or two from our fore-castle guns.

“Well, sir, as I was saying, this was all very fine fun for Johnny, but the skipper was not for letting him have it all his own way, so while some were lightening the ship abaft, and getting some guns on the fore-castle, the launch was hoisted out and sent with her cannonade to exchange a few compliments with the gun-brigs, by way of taking their attention off the frigate. But, sir, we wanted a craft big enough to carry out an anchor for us to heave off with; and as we had none of our own, why, the captain thought, sir, it would be just as well to borrow one of the Frenchmen, as they were dealing out their favours so lavishly upon us. So with that, sir, the barge and yawl were sent away under the command of one of the lieutenants, with orders to bring one out to us, and this he did, sir, in gallant style, from under the very batteries. Well, sir, when we got her alongside, she was full of stones, and it was necessary to lighten her, so she was veered astern that she might not make more shoal water for us; and by the time she was ready under the bows, for the anchor, it was midnight. Well, sir, in spite of the shot which hulled us continually, and the prize too, the carpenters plugging up the shot-holes as fast as they were made, the anchor was got into her, and she was towed out by all the boats to the proper position for the anchor to be laid in. They could see what we were at fast enough from the shore, and the gun-brigs and the batteries, kept a smart fire on the boats all the time; but they were all got alongside again safely after the work was done; and tight work, sir, it was too.

“Well, Mr. Seaward, as you may suppose, we had got into a precious mess. What with the fire from batteries and the brigs, which latter we should have taught how to behave themselves if we had not been

* This is an instance of inaccuracy in James’s Naval History, as I have since ascertained, who gives but a sorry account of the affair, and dates it in 1803. James, however, had many difficulties to contend with, and deserves great credit for what he has done.

hard and fast aground, things seemed to be getting worse; for though it was a start calm by three in the morning, the tide had not flowed sufficiently to allow of our heaving on the anchor, and Captain Brenton gave orders to prepare to burn the ship. The first thing to be done was to look after the wounded; so the French lugger was got alongside with the frigate between her and the guns; and we had no sooner got them into her, than away went both her masts, shot away by the guns of the batteries; the shot passing clean over our gangways. There was a bit of a breeze just springing up, too, but we had not a stick standing to make sail on in her, so we had to get the wounded back again to the cockpit, and set about getting the frigate under way, as the tide was rising high enough for us. Never shall I forget that night, sir. The ship's company were sent below, till we could heave at the capstan, for nothing more could be done, d'ye see, sir, but to lie still, for it was getting daylight, and seeing us more distinctly from the batteries, the Frenchmen had a better mark to aim at. Well, sir, about four in the morning, the bars were manned, and we kept heaving a heavy strain on the capstan, while some of our fine fellows were sent below, wounded. Nevertheless, I never saw men do their duty better. There was no flinching, sir; the men liked their captain, d'ye see, sir; and they did their duty steadily and nobly, like him, though they were dropping like larks nearly every minute.

"Well, sir, we had been heaving about for an hour in this way when at last she started off, and we made all the sail we could to a light breeze, with our head off shore. Well, d'ye see, Mr. Seaward, the ship had steerage-way—for we had cut away the lugger, and some of the boats went with her—and in a few minutes more we should have bid our friends good morning, when the wind gradually died away, and the flood-tide drifted us right into the harbour; and left us again on one of the cones, just as bad as we were before. There we lay, sir, with two fathoms under the main-chains, for the batteries to amuse themselves with, worse than ever. Ah! Mr. Seaward, if there had been such a craft in the way as this under our foot, we should have let them know a very different story. It was a fine morning, sir; the water was as smooth as glass; and the lift of the swell was just enough to help the tide to fix us well in the cone. A steamer, you know, Mr. Seaward, would have been just the thing to have helped us off; but in those days we had hot water enough, without steam, sir." "Yes, Captain Weatherall I suppose that the introduction of steam navigation will be the means of bringing matters to an issue more readily, in the event of this country being involved again in war." "No doubt, Mr. Seaward, gun-powder and steam together, will keep us all alive, sir, and our neighbours too; but people seem to have come to their senses, and have found something better to do than going to war." "Well, but let us hear how you got out of your scrape at Cherbourg, Captain Weatherall?" "Aye, Mr. Seaward, as I was a saying, and a precious scrape it was too!

I never passed such a night, neither before nor since. I was a younker then, sir; did'nt know the catheads from the boat's davits. As soon as the captain found how things were, he sent all the people below, and consulted his officers as to what was best to be done; and it was about an hour after that he determined to give up the ship, for the batteries were firing away all the time; and as we had no means of saving the crew now, it would have been throwing men's lives away, d'ye see, to have set fire to her. Well, sir, the colours were hauled down, and soon after a four-oared boat came to us from one of the brigs; and as soon as the captain had assured the officer in her we had struck our colours, he came on board, and had the honour of receiving his sword. Well, sir, there was a dispute afterwards, between him and the commandant of the batteries, as to which should have the captain's sword, and the captain was referred to by way of settling it. I shall not forget the answer he gave them, sir: the captain of the brig did not like it; but it was the truth, and just such an answer as he might have expected from a British seaman. The captain said, distinctly, sir: 'Had it not been for Fort la Liberte, with seventy-five guns and twenty mortars, and Fort de l'Isle Pelee, with one hundred guns and twenty-five mortars, I should have manned my boats, and taken possession of the two gun-brigs, to carry my people to England, in the event of it being necessary to destroy my ship.' And so it was, Mr. Seaward; why you know it was the batteries that captured the frigate. However, sir, they got her off the cone afterwards, and she was employed in the French service; and when Captain Brenton and his officers and crew returned to England, they were honourably acquitted for the affair."

Captain Weatherall had scarcely finished his story, when a fine little girl, which had been playing and running about the deck, to the amusement of some of the passengers, tripped over a rope, and fell headlong overboard through the gangway. All was consternation in a moment; the engines were stopped, and every one ran simultaneously to the side on which the accident had happened. But the foremost was a large Newfoundland dog, which seeing the child fall, instantly sprang after her, and caught her by the clothes, as she was struggling in the water. Happily a boat was towing astern of the vessel, when two or three active fellows jumped into her, and rescued the poor child from drowning. She was much exhausted when brought on board. As for the dog, he received caresses from every one. The feelings of the parents may be better imagined than described. If it was distressing and painful to see them while the life of the child was in imminent danger, the gratification of recovering her overcame the feelings of others besides them; and a tear of joy was shed by many at her deliverance. The incident served to introduce people to each other, they seemed to become better acquainted; the cold reserve which I had observed in some had vanished; and though a little

blame was murmured here and there, every countenance beamed with joy at the safety of the child, and we were once more steaming merrily down the river.

At this moment, Captain Weatherall came up to me, to point out the Centurion, Lord Anson's ship, in which he sailed round the world. "There she lays, Mr. Seaward," said he, pointing to a hulk lying moored alongside the dockyard at Woolwich; "and she has been a prison-ship, sir, these last twenty years. They say, sir, that her figure head was placed by his late Majesty in Windsor Castle." "He knew the worth of naval trophies, Captain Weatherall, for he has done his part towards gaining them."

"That's the place," said one of the passengers, to another near me, pointing to the entrance of the river Lea, as we passed it; "that's the place where the Thames Haven Company are about to construct docks and warehouses for steamers and vessels, from whence passengers and goods are to reach London by a railway, in about an hour or two, instead of being delayed by the intricate navigation of the river, and running foul of vessels passing up and down; besides the risk of running down boats, even at the reduced speed which they are obliged to adopt." "Aye, and a good scheme it is," added another, near the speaker, "for all the world knows enough of these accidents; they are too common a great deal." "But see the advantages," continued the first, "a quicker passage to town, all accidents of the river avoided; and when they become established, it will be the means of reducing also the number of vessels which crowd up the river, to the manifest inconvenience of every one, as well as to the disfigurement of it." Every one seemed to think the scheme a good one; and, considering the objects and advantages which it contemplated, I could not help thinking the same.

As we passed successively down the various reaches, as the day drew on, the wind freshened, and being more exposed than in the upper part of the river, its effects were more readily felt on the deck of the vessel. Although a fine day, the wind was searching, and some of the passengers who remained on deck began to wrap themselves up, and to find out a snug corner sheltered from the spray, as it was blown over the bows of the vessel. The odd remarks which were drawn forth at first, as each new object presented itself, gradually became less numerous; and as we approached the Nore, I found that even the musicians, who had with becoming perseverance stuck to their calling till now, laid aside their instruments, as their listeners seemed more inclined to attend to their own business than to their music. In fact, the vessel began to feel the effects of the ground-swell at the mouth of the river, and as the sea got up, the barometer of the animal spirits of those on board fell in the same ratio.

CHRONOMETER RATES.

Plymouth, 15th Feb., 1838.

SIR,—It has been to me a matter of astonishment that no well authenticated position has been publicly made known suitable for the purpose of rating chronometers on board ships in Plymouth Sound. I believe that even men-of-war are in the habit of proceeding to sea, with the errors and rates ascertained on shore, at Mr. Cox's, (agent for Government chronometers,) when it is well known that these rates are invariably altered on the chronometers being deposited on board ship.

Now, it happens that officers interested in the chronometers, have frequent opportunities of landing on the breakwater, between the times of receiving them and the sailing of their ship: if, therefore, they can depend upon the latitude and longitude of a particular spot on the breakwater, they may sail from Plymouth with a satisfactory error and rate, even should circumstances prevent their taking equal altitudes. As a position for this purpose, I beg to recommend the easternmost landing place, where are several large stones, three or four feet in height, (built up, I believe, to protect the landing place from the sea in bad weather,) well calculated for observing on. The latitude of these stones is $50^{\circ} 20' 3''\cdot3$, and longitude $16m. 32s. 25'$, for verification of which, I submit the following observations, trusting they may answer the purpose intended.

I remain, sir, your obedient servant,

T.

February 11th, P.M.

Time by (E.)	Twice ☉	Peak of Mew Stone.	
	alt. l.l.	☉ n.l.	
h. m. s.	o ' "	o ' "	o "
1 23 59 ...	29 11 40	☉ True bearings, S, 44 58 30 W	
25 5·7	90 31 00	Diff. of bearings, 90 52 30	
25 23	34 50		
25 40 6	38 40	Mew Stone S. 45 54 0 E.	
27 20·7 ...	28 26 40		
E. slow on G.M.T. 2h. 5m.			

Horizontal angles measured.

Mew Stone Peak ... }	115° 0' 0"	Drake's Island	} 104° 27' 0"
Penlee Beacon		Penlee Beacon.....	

By Trigon. survey of England.

	Latitude.	Longitude.
	o ' "	o ' "
Mew Stone.....	50 18 31	4 5 32 6
Penlee Beacon,	50 19 26·3	4 10 40·1
Drake's Island,	50 21 22·4	4 8 17·9

Working out the triangles, and taking each place as a station, the latitude and longitude of the landing place will be

	Latitude.	Longitude.
	° ' "	° ' "
Deducted from Penlee Beacon	50 20 3·3 ...	4 8 4·6
" Mew Stone ...	50 20 3·3 ...	4 8 2·4
" Drake's Island,	50 20 3·4 ...	4 8 4·5
	<hr/>	<hr/>
Mean...	50 20 3·3	4 8 3·8
	<hr/>	<hr/>

or 16m. 32·25s.

NOTE.—I understand Captain King's position was near this landing place, but the exact spot I am unable to find, the stone having been washed away several years ago. His longitude, according to Mr. Cox, was 16m. 31·54s.

THE APPROPRIATION OF SEAMEN'S DUES.

Peckham, 6th April, 1838.

THERE is no subject that more concerns the general body of Merchant Seamen, than that agitated in the last number of the *Nautical*, by a "BRITISH SHIP MASTER:"—namely, *the Appropriation of Seamen's Dues*.

So important is this question, and so little is it understood, that I feel it to be the duty of every British ship-master, to turn his attention to it, with a determination to obtain for the maritime community a control over the thousands of pounds which they are annually obliged to contribute:—a control which is enjoyed as a right, by the members of every other benefit club in the kingdom. To assist the inquiries of your correspondent, and to excite inquiry in others, probably the following statement will be sufficient; the remarks which follow will have the same tendency.

" Merchant seamen's office, No. 25, Birchin-lane, March 13, 1838. An account of the receipts and payments of the corporation for relief of seamen in the Merchant Service, their widows and children, pursuant to the 20th Geo. II., cap. 38, and 4 and 5, William IV., cap. 52, for the year 1837.

" INCOME.

" Balance, cash from 1836	£1,744 13 5
Duties, from London vessels	10,078 10 0
Out-ports, balance of accounts	2,340 10 9
Dead men's wages, forfeited	81 14 0
Interest of stock	1,617 0 0
Benefaction from David Salmon, Esq....	10 10 0
	<hr/>
	£16,873 3 2
	<hr/>

"EXPENDITURE.

" Pensions	£7,181	12	6
Temporary relief	782	12	3
Seamen's Hospital Society	461	14	4
Expenses of management	1,029	9	11
Consolidated 3 per cent. Annuities for 2,000 <i>l.</i>	1,810	0	0
Old South Sea Annuities for 3,000 <i>l.</i>	2,682	10	0

13,947 19 5

Balance..... 2,925 3 9

£16,873 3 2

" By order of the committee,

" W. WATSON, Sec."

This is all that the self-elected governors of the Seamen's Society think it necessary to communicate on the money affairs of the seamen of England. Upon what pretence think you, sir, is it considered sufficiently comprehensive? *Because it is held to be a charitable institution, receiving the bounty of voluntary subscribers!*

Income derived from seamen, 1837.....	£16,862	13	2
From benefactions	10	10	0

£16,873 3 2

Such is the argument supplied by Mr. Watson, the secretary,—the governors will not disown it, for they have published it, and it shows to demonstration, that the Seamen's society is a charitable institution, not a benefit society; that it is supported by **BENEFACCTIONS**, not **SEAMEN'S DUES**; and that, therefore, masters of British ships and British seamen, have no right whatever to be more inquisitive about the matter.

To admit that seamen are endowed with the common gift of reason, and then to palm upon them an imposition so gross as this, would be a master-piece of effrontery,—but the governors do not thus; they admit nothing of the kind; they believe seamen are *de facto* and *de jure*, incapable of thinking or acting for themselves. As I, however, have a different opinion of them, I will presently make, for the exercise of their faculties, a few comments on the "yearly account." In the mean time, let me return to your correspondent. He regrets that Mr. G. Lyall did not remain in Parliament, "to do more;" he means of course, *for merchant seamen*. This regret of the seaman is ill-founded. Had Mr. G. Lyall been able to carry out his own views, we should have been in a worse position than we are in now:—your correspondent should rather regret that the timely interference of Lord Auckland, had not been carried further; but for him, the only tangible and satisfactory item in the foregoing account would never

have had a place in it; I refer to that debited as paid to "the Seamen's Hospital, 461*l.* 14*s.* 4*d.*" This annual disbursement Mr. G. Lyall laboured ineffectually to withhold.

Up to the passing of the act, William IV., (your correspondent is no doubt aware,) no account had ever been given of the receipts and expenses of the Seamen's Society. When the act passed, and seamen were relieved of Greenwich dues to enable them to augment the funds of the society, the legislature insisted upon the publication of a yearly account, and in obedience, the annual has made its appearance in due season ever since—a thing of twelve lines, just sufficient in detail to answer the obligation of the law, and pervert its meaning. The House of Commons and the House of Lords both intended that seamen should be made clearly and fully aware of the appropriation of their funds—nor will they be satisfied until they are. The account rendered is insufficient; and although the self-elected governors are honourable men, these are no times "to run people down under the flag of infallibility."—"PENSIONS, 7,181*l.* 12*s.* 6*d.*" indeed! Who have they been given to?—how awarded? Are we to believe that the necessities of all these pensioners were so great, and their claims by servitude so strong, that those of the grey-headed seaman spoken of by your correspondent were considered trifling; or shall we be nearer the truth, if we imagine that the applicant's case was "deemed a hopeless one," because it had not the accompaniment of interest? But this is the question, and every seaman has a right to require an answer to it,—Have all the pensioners been merchant seamen and contributors?

"TEMPORARY RELIEF, 782*l.* 12*s.* 3*d.*"—It is not likely that this sum was sufficient to assist all the deserving persons who made petition in their distress. How much was given to each? "In sums of from — to —," might have been added surely, without imparting too much knowledge. Then comes "Expenses, 1,029*l.* 9*s.* 11*d.*" How are we to make this item out? No forced contributor knows how the officers share; the secretary is of course upon a good salary,—I put him down

At	£600	0	0
A clerk	150	0	0
A consulting or visiting doctor	100	0	0
A messenger	50	0	0
Rent of office,	50	0	0
Stationary, &c.	79	9	11

£1,029 9 11

the division is not to be depended upon, it may not be quite correct, but the amount is; and thus we may learn, that for taking care of the

7,964*l.* 4*s.* 9*d.*, and for making out the annual account, nearly the whole of the interest on invested capital is consumed.

Touching the "balance, 2,925*l.* 3*s.* 9*d.*"—where is it? It is usual with similar institutions, whether charities or benefit societies, to write

Cash in banker's hands.....

Cash in secretary's hands.....

A cash balance of 2,925*l.* 3*s.* 9*d.*, is a large provision for relief, which in a year does not exceed 782*l.* 12*s.* 3*d.* Well may your correspondent wish for a Joseph Humè to super-audit accounts like these!

But the whole affair is in improper hands; not three persons out of the list of governors will pretend that they are qualified for the office they hold. They should possess a knowledge, from practical observance, of the habits, wants, and emergencies of seamen; a knowledge, which can only be acquired during the course of a maritime service. Hatters, stationers, wine-merchants, ironmongers, ship-chandlers, sail-makers, &c., of along-shore notoriety, are not the men to be so entrusted, however respectable and humane they may be; but this is the more objectionable when they have no better assistance than they can find in a secretary as little qualified as themselves.

If there be amongst them, however, any disposed to give satisfaction in their governorship, what I append may give them a cue to the task. Let the secretary be ordered to prepare a list of pensioners, stating in columns, the name, age, port, service, recommendation, and pension of each, with the date of its grant. Let a stricter system be instituted to obtain knowledge of the death of a pensioner, lest it by and by be asserted, that to be placed on the society's pension list, is to have gained immortality. Let the governors revise and render less intricate the certificate they require from sick or distressed applicants. It should be a strict, but not a prohibitory one. Let the list of pensioners be printed, and annually corrected, with the account of temporary relief, receipts, expenses, &c., and published, and copies of such forms as may be considered necessary to be filled up for presentation by seamen.

These matters would be contained in a book of less size than the *Nautical Magazine*; and if sold at one shilling each, the publication would be a profit, not an expense. But there, Mr. Editor, what am I recommending? Make a pension list, and publish it!—they'll do no such thing, and your correspondent will need no ghost to tell him why.

I am, Sir, your's respectfully,

A SEAMAN.

COLLIER'S BOILERS.

"Ah me! what perils do environ
The man who meddles with cold iron."

MR. EDITOR, — It has been my intention for some time past to address you a few lines on various inventions!! of the *present* day; but a multiplicity of engagements has prevented it.

Before proceeding, allow me to congratulate you upon the accession of a correspondent of whom you have need to be proud. I allude to Tubal Cain, who, in a spirit as philosophical and scientific as it is correct in fact, has unveiled the mystery which was attempted to be imposed upon the public with regard to the logs of the Indian vessels, *Atalanta* and *Berenice*. I do not mean to insinuate that such results were put before the world with a cognizance of their incorrectness; but even ignorance is culpable on such an occasion; though I confess, from a knowledge of the *revisers* of these precious documents, I have too great an opinion of their merit to give them the benefit of the latter supposition. Tubal has proved, that instead of their performance being great, it is very common-place; in fact, about on a par with Her Majesty's vessels, where from bad management and worse enginemen, the results are generally ten to fifteen per cent. below well managed private vessels.

It appears that Tubal and myself are embarked in the same cause, as just as it is honest and disinterested, to uphold the really deserving and *modest* schemer, but to declare war against all empirics. But now to the consideration of our present subject—"Collier's Boilers." The first time these boilers were brought under my notice was on board Her Majesty's steamer *Meteor*, in 1834, when they were fitting to that vessel on an experimental trial: and in order that we may have the subject perfectly before us, a few words may not be thrown away on their dimensions, construction, and qualities, as regards surface, the general test employed in boilers of common description.

The *Meteor's* engines are of the collective power of 100 horses, by Boulton and Watt, having a cylinder of $39\frac{1}{2}$ inches diameter, and 3ft. 6in. stroke; the calculated speed being 27 revolutions per minute. Mr. Collier's boilers were 10ft. fore and aft by 13ft. 4in. athwart, and 8ft. 10in. high; and I may refer the reader to the lithographic print and pamphlet published as an advertisement in the *Nautical** (December, 1837,) for their general construction. Their absorbent surface correctly calculated was (to the water's edge)—

* The *Meteor's* boilers were not exactly like this lithograph shows, the flame after passing between the chambers, went *directly up the chimney*; whereas, it is shown to have a "flue," and a "bridge," as in old boilers, to which the reader will see this alteration is an approximation; the writer infers the new boiler for the "*Glasgow*" will possess these supposed improvements.

Surface of the boiler — 607·8 sq. feet.
 Surface of the chambers — 726·5

Total 1334·0 sq. feet.

Grate surface — 79·4 sq. feet.
 Chimney, 30 in. — 70·6 area.

Here then we have a surface of 1,334 square feet for a power of 100 horses, with a grate surface of 79ft. 4in.

I need scarcely say to the scientific reader, that we have a great surplus of absorbent power, and that if a failure occurs, it must be owing to some defective principle of the construction only; or, in other words, that 1,334 square feet of surface, applied in the usual way, would supply a superabundance of steam for a pair of 50 horse, nay, even for a pair of 60 horse engines.

The vessel was finished, and ordered to Lisbon; and, as we are told in the advertisement before-mentioned, Mr. Collier was directed to accompany his boiler on its trial.

It is also notified the engines made eighteen strokes in the basin, and did sundry other things of an assumed novel nature; such as beating the Firebrand, (which is evidently a mistake,) with which the boiler had as much to do as the main-mast; for surely it is not meant to be implied the former boilers *did not* produce sufficient steam for the engine's use, for that could be proved by a multitude.

To what cause, then, is the novelty attributed? Had it never occurred to the authors of this laudatory pamphlet that it must have been a difference in the displacement of the two vessels, the one loaded, the other light, or some such cause, entirely removed from the influence of the boiler; for if the engines were fully supplied, it matters not by what means. We are also gravely informed this vessel went ten knots; this, verified, would be acceptable to her present commander. She never, in her palmiest days, went faster than ten statute miles, or 8·70 knots per hour.

I shall omit to notice how she reached Lisbon, or how she got back to Falmouth, both being of little importance, although the impression on my mind is, that a result far from satisfactory took place. If not, what was the cause of her being ordered to Woolwich from Falmouth, and *the boilers immediately removed*, and others of common construction put in? Is it, or is it not true, that these boilers cost the Government 1,400*l.*, and after a few months were re-sold to Mr. Collier for about 200*l.*?

I proceed now to quote from his pamphlet: "But a saving also of 50 tons in weight, as in these patent boilers, on account of their diminished size, so much less water is required; there is a saving of 50 per cent. in weight, room, and fuel—no heat can radiate from the boil-

ers. Boiler supplied with hot feeding water, causing a saving of 10 to 15 per cent. Safety or breathing pipe."

Let us consider these as they stand.

The boilers, which were worn out and removed from the Meteor, previous to the introduction of the patent ones under consideration, were 15 feet 3 inches forward and aft; 13 feet 6 inches athwart, and 8 feet 0 inches high; covering a superficial area of 206 feet, and a cubical content of 1,647 feet. Mr. Collier's, by the same rule, covered $133\frac{1}{2}$ square feet, and had a cubical content of 1,179, a superficial saving of 35 per cent., and a cubical of $29\frac{1}{4}$ per cent. So much for room saved.

The weight of the common boiler, with its apparatus, chimney, grate bars, complete, was 27 tons, and the water 12 tons—39 tons total. This may be relied on, as it is taken from the official documents sent in by the manufacturers.

Unfortunately, we have no such means of ascertaining that of Mr. Collier's, but having a very accurate drawing, taken when they were erecting on board, this problem becomes a matter of easy determination. Assuming the plates were no thicker than those used in common construction of boilers, and that the chambers were of uniform thickness, which was not the case, we can easily determine the weight. By an accurate calculation, it will be found to contain about 2172 square feet of plate.

Or a weight of tons 21 7 cwt. for the shells and chambers.
 Grate bars and apparatus, do. 1 15
 Chimney case, & water in do. 1 18

Tons 25 0

25 tons, or a saving in the boiler of 2 tons!!!

The water, by the same simple deduction, will be found at 12 inches over the flues to be 423 cubic feet, which, at 62.5 lbs. per

foot $\frac{423 \times 62.5}{2440} = 11$ tons 16 cwt., a saving of 4 cwt. on the water!!

or two tons 4 cwt. on the whole complete, or less than *one-eighteenth*. or $5\frac{3}{4}$ per cent.; plainly showing that the decrease in weight is less than the space they occupy, and, consequently, that they are much *heavier* in proportion to their cubical content, or superficial area than the common boilers.

Having thus disposed of the saving of 50 per cent. in weight and room, let us turn our attention to the "fuel,"—the only peg on which to hang an argument remaining, for it will be generally observed, that if room, and especially weight, be reduced so little, there must be some great advantage in the economy of this arrangement of absorbent surface, to enable the patentees to put forth such wonderful results in their advertisements, with any honesty of purpose.

So long as such persons as Thomas Rapson, engineer!!! Thomas Savage, and Henry Poole, × his mark, were brought forward to support this scheme, so long it was unnecessary to notice it in print; but when we have some tangibility, something like data, and names are mentioned of respectability, more especially such men as Dr. Wm. Ritchie and Professor Brand, as having witnessed the performance of this boiler, and spoken in favour of it, it is highly necessary some notice should be taken; in fact as these circumstances are well known in the profession, it will give the patentees an opportunity of explaining them, if they have the power, and also show the before-mentioned gentlemen that the experiments they witnessed are not quite so favourable as they appear to imagine.

An advertisement, published in the last September and October Numbers of the *Nautical*, with extracts of various letters on this subject, is now before me, and I think we may reasonably conclude, that this contains a statement of *all* the improvement, it having emanated from the Globe factory so lately.

To that signed "Charles Manby, C.E.," I wish to draw attention. It recounts an experiment made by this gentleman on the evaporating power of a *25 horse patent boiler*.

Thus: June 29, 1837. "Got up steam to 4 and $4\frac{1}{2}$ in the guage; in nine hours consumed 872 lbs. of coal; evaporated 836 gallons of water." Mr. Manby will attest this fact. This we accept, but reject his conclusion and deductions.

Let us examine this performance. 836 gallons evaporated in nine hours is equal to 134·18 cubic feet, or 14·89 feet per hour, with 97 lbs. of coals, or equal to 17·0 cubic feet per cwt. of coal.

If we take 17 cubic feet evaporated with a cwt. of coal, as proof of the economy of these boilers, it is a usual result with boilers of the old kind, of good construction, supposing the coal used to be of inferior quality, as Welsh or Staffordshire, but if it was the best Newcastle, and it is reasonable to suppose such would be used, the result must be reduced accordingly. Again, this was perhaps a minimum performance, or an experiment in which the fires were husbanded and made the most of; in other words, the boiler was only exerting half its power, as I shall now show. Or if it was a maximum experiment, in which the fires were forced to their full extent, it proves that the power of this machine, in proportion to surface, is very inferior to the old plan.

We have, as before stated, 14·89 cube feet evaporated per hour with a *25 horse boiler*. As Mr. Collier, in his pamphlet, has appended to his cognomen the honourable appellation of "civil engineer," it would be superfluous to tell him that each horse power requires about 35 cubic feet of steam per minute for its full supply; or reducing this to water will be 1·23 cubic feet per hour; and as we evaporated 14·89 cubic feet in that time, we have $\frac{14\cdot89}{1\cdot23} = 12\cdot10$ horses, or steam

sufficient to supply an engine of that power only, without any allowance for waste and condensation in the pipe and cylinder casings.

This is an important fact, and one deduced from the parties' own data, which I have exactly copied to prevent cavil. It demonstratively proves that the 25 horse power boilers tried at the Globe factory, instead of saving 50 per cent., are not equal to their work by that quantity; and by the same rule, their powers, size, and surface, must be doubled; and then, may I ask, where would be the saving in weight, room, or fuel?

We have examined the theoretical and experimental facts connected with this matter, we shall now see how practical results bear them out.

The statistical details of the Meteor's patent boiler have been given, as well as the fact of its having been removed from the vessel after *one* voyage to Lisbon and back. Why was this done? Was there no cause? If all went on well, as we are told in the pamphlet, to the satisfaction of many individuals, engineers, stokers, and *officers of the vessel*; if so, I ask, why was the commander's name not produced, as attesting the fact of plenty of steam, and a small consumption?

Let it be observed, that Mr. Collier carefully avoids stating they had *sufficient steam* during the passage out and home. One of the stokers states, "We never lost our steam." There is certainly some difficulty in losing that which you never possessed! Did the great expansion of the chambers cause the complete destruction of their material, producing leaks so extensive, that water could not be contained in them? Why were they condemned?

But, fortunately, we have a more recent case to refer to. The *same* boilers, tried in the Meteor, were put into the Commercial Company's steamer "Glasgow," about three months since, and have been tried. Were they not a failure? And are they not now to be removed to make way for new ones of improved construction? On the merits of the former we are entitled and enabled to decide; the latter, of course, remains in abeyance; but we shall take an opportunity of investigating the results, and will forward you the particulars for your information, and that of the public.

The "Glasgow" received the boilers of the "Meteor," with their apparatus—"slow-conducting medium," "breathing pipe," and all. She made two trips from Havre-de-Grace, *via* Southampton; came back to London; was laid up where she now remains, in the East India-dock. Her engines are of the collective power of 100 horses, by D. Napier, of Glasgow.

The consumption of coal, was it not fully equal to that of the old boiler, of common construction?—if any difference, greater? And could they procure steam sufficient only to work the engines sixteen to seventeen strokes average per minute? whereas, the old boilers would produce thirty to thirty-one strokes, the proper speed for such

an engine. If so, it agrees with what I have detailed of the twenty-five horse boiler at the factory, that we are burning as much coal as before, but only doing *half the work*. In fact, how can it be expected otherwise, when a considerable portion of the heat goes up the chimney, and is expended on the atmosphere, in the shape of three yards of fine flame at its top? An examination will show this. It was fresh painted on starting—it is now completely oxidated, arising from the spray dashing thereon, and being immediately evaporated by the great heat.

The chamber might be split and patched in all directions; but more particularly below, where the greatest action of the fire impinges; plainly showing the circulation of the water cannot be kept up properly.

With regard to these boilers being supplied with hot feeding water, by a casing round the chimney—it is absolutely necessary, or the chimney would soon become red hot; and, as before observed, had it been advanced in favour of this scheme, that it would do away all chance of collision at sea by the beacon formed at its top, it would have been its best recommendation. As far back as 1817, the plan of chimney *water-cases* were common, and was continued to 1826; but being found very injurious to it, a nuisance to passengers, frequently, and totally useless as a saving of fuel, they were discontinued. That ten or fifteen per cent. is saved by this plan, is below my notice; for, added to the fifty, we have sixty-five, leaving only thirty-five per cent. to do the work of the old plan. This statement alone degenerates the whole set of advertisements into contemptible puffs. The “slow conducting medium” is undoubtedly good in principle; but are there no practical defects in its employment? and surely the patentees claim no novelty in this matter. Felt, put on with a thick layer of red lead, has been used for years, and is of great service, preventing radiation considerably; and also has not the same objection urged against it in case of a leak, as an outside casing filled with pulverized charcoal, saw-dust, or other matter, would have. In the former case it could, perhaps, be discovered and stopped; a most difficult thing in the latter. Other objections exist, such as corrosion of the boiler below the coating, by the introduction of water externally; but which are, however, in my opinion, not of so much importance, and much counterbalanced by the advantages derived from its use. The patentees' plan, then, appears neither novel in its nature, nor useful in its character.

The “safety, or breathing pipe,” has even less claim to originality and usefulness. We are told they may be applied on land or water. Has it never occurred to any one that the *common damper pipe* on land boilers, is one and the same with their safety affair, (in its most important point, that of preventing explosion by working under an open column,) effects the same purpose, and also feeds the boiler?

In marine boilers many years since it was used for the purpose of waking the stokers, had they slept on duty, and let the water low; by which means the steam rushed out through a "whistle," and soon brought them to their senses. But all such "toys" vanished as experience gained ground; with a "reverse valve," to prevent compression, and the "safety valves" made as sketches by your correspondent "Archimedes," in your last June number, all danger of either mishap ended. For it is matter of fact, all explosions have occurred where 'steel-yard safety valves' have been used only, as at Hull and Glasgow; and in the former case, instead of bringing a poor ignorant man to the criminal bar of his country, it would have been more consonant with justice to have placed those in that position, who, aware of a full and simple prevention, put a dangerous power under his control, which, in the moment of excitement, in the heat of the race, he might force too far, without thinking of the awful results which must follow. By a singular coincidence, I had just penned the foregoing, when news was brought of the melancholy accident on board the *Victoria*. It is so much to the point, that I need say nothing more in explanation of my views. I take this opportunity to bring your attention to a note inserted by you in page 813, vol. I. enlarged series, appended to the letter of "S," on steam navigation.

You are pleased to say, some portion of my first communication regarding the extent of expansion* used by various engineers, was foreign to the subject. And, with all deference, it was most pertinent, as the detail proved. I wished to show that any calculations formed on "nominal powers," would only be approximative.

If "S." reads attentively, he will see *actual power* is the proper expression. It does imply the actual pressure on the piston, as shown by the indicator. In my calculations, the friction of the machine itself is deduced, and then we have the "actual mechanical power," propelling the vessel. "Gross power" would be proper when the friction is included; and when comparing, the consumption of coals should of course be taken.

I also reply to the oblique hit given me by the "Two Old Commanders of Steamers," (in whom I recognise your friends, who doubtless intend it as a *quid pro quo*, for the notice I took of their attainments, in my last letter.) See page 51, January, vol. 1838.

If to argue a subject in a fair manner to bring forth facts—diagrams and calculations lay me open to the designation of an "interested caviller," I then plead guilty, not otherwise; contented to leave the decision to the readers of the *Nautical*. But a word or two with these "old gentlemen."

We have a new ground given by them for the introduction and use

of Morgan's wheels, as novel as absurd. They are best calculated to get vessels off coral reefs during hurricanes, as if this was a matter of every day occurrence. But I deny the truth of the statement. From the great diameter of these wheels, to *wholly submerge* them, the vessel must not only lie on beam-ends, but *on her side*; and to develop their assumed properties she must have so remained for some seconds at least. Now suppose what would have become of the boiler and engines, particularly the former, in that case. This proves the statement to be either false, or grossly exaggerated. But Massey's wheels are coupled with them, as if there was analogy between the two in construction and principle, instead of being *extremes*.

Their objection also to weight, with regard to coals, as if measure was a better criterion than gravity, even by their own data, plainly shows us that we must "respect the aged."

My letter to you, of the 10th of November, 1837, having failed in producing the experiments made on the African, I conclude and believe the results "to be futile;" and if it meets your approbation, will shortly address you a paper on what has been done in other of her Majesty's vessels; in which I shall be able to prove the *nearer they approximated* to the old wheel, so was it better; and that my opinion is correct as before expressed—less shake and tremor, at the expense of speed.

I am, Sir,

Your obedient servant,

HIRAM.

MANAGEMENT OF CHRONOMETERS.

Greenwich, May 9, 1838.

MR. EDITOR,—I am desirous of calling the attention of persons having the charge of chronometers, to the very serious amount of error arising from suspending them either in *cots*, or on those *swinging tables* to which horizontal rotary motion is easily communicated.

I did not intend making any communication at present on this subject, until I had completed other experiments connected with it; but as I find these methods of suspension are by some persons still tenaciously persevered in, I am induced to send you the following extract from my experiments; which if not sufficient to satisfy such persons of the existence and amount of such errors, will at least be sufficient to induce them to make similar experiments, and satisfy themselves; particularly as their own credit and safety so frequently depend upon the performance of these invaluable machines.

In experiments F the box chronometers, Nos. 1, 2, and 3, were placed in squares, marked out for them with pencil, on a strong table, screwed to the floor, in one of the rooms of the naval asylum, Greenwich.

In experiments S the same chronometers were suspended from a strong frame, on swinging tables, the point of suspension of each being nine inches above the face of the chronometers, and the bottoms of their boxes half an inch above the table on which they were placed in experiments F, and immediately above their respective positions in those experiments, and therefore in the same positions with respect to the magnetic meridian.

Experiments.	Date.	Rate of No. 1.	Rate of No. 2.	Rate of No. 3.
F	1837. Dec. 11	s.	s.	s.
	12	- 1.0	+ 4.1	- 0.6
	13	- 1.3	+ 4.2	- 0.9
	14	- 1.0	+ 3.6	- 1.0
	15	- 0.8	+ 3.9	- 1.4
	16	- 0.9	+ 4.2	- 0.7
S	16			
	17	+ 4.4	+ 7.3	+ 3.7
	18	+ 4.0	+ 7.0	+ 3.9
F	18			
	19	+ 0.7	+ 4.3	+ 0.3
	20	+ 0.7	+ 4.0	+ 0.5
S	20			
	21	+ 5.0	+ 7.1	+ 4.6
	22	+ 5.2	+ 7.0	+ 4.2
F	22			
	23	- 0.4	+ 2.9	+ 0.1
	24	+ 0.5	+ 3.9	+ 0.9
	25	+ 0.5	+ 4.1	+ 0.9
S	25			
	26	+ 5.2	+ 7.1	+ 4.9
	27	+ 5.1	+ 6.9	+ 4.8
	28	+ 5.2	+ 7.2	+ 5.0
F	28			
	29	+ 0.5	+ 3.3	+ 0.8
	30	+ 0.8	+ 4.3	+ 1.0
	31	+ 0.6	+ 3.7	+ 0.7
S	31			
	1838. Jan. 1	+ 5.0	+ 6.9	+ 5.2
	2	+ 4.9	+ 7.3	+ 5.4
F	2			
	3	+ 1.1	+ 4.1	+ 1.3
	4	+ 1.0	+ 4.3	+ 1.3

The chronometers were wound up daily, and their rates determined by a comparison with a mean solar clock in the same room with them. The above table requires no explanation. It will be seen that the chronometers *gained* upon their previous rates by being placed on the swinging tables, by the following quantities:—

No. 1.	4·5s.	daily.
2.	3·2	„
3.	4·1	„

As a practical conclusion, we may observe, that the effect of a want of stability in any chronometer, is a minute (though in many cases very sensible) variation of the whole mass, arising from the motion of the balance, and depending as to quantity, on the inertia and freedom of motion of the mass on the plane of the balance. From hence also arises the necessity of keeping chronometers always firmly fixed in one place while on ship-board, (independent of other reasons,) unless the firing of guns, or other case of necessity, requires their removal for a time; since the usual methods of suspension, before mentioned, will not only introduce a material change in the rate of the chronometer, but in many of the chronometers the rates acquired will be extremely variable.

I am, Sir, &c.,

GEORGE FISHER.

THE TRINITY HOUSE OF "DEPTFORD STROND."—*Its Constitution.*

MR. EDITOR,—There is, perhaps, no institution of greater utility to this nation, as a maritime power, than that which is denominated the Trinity Company; that is, assuming that every duty which is entrusted to it be duly performed. No very heavy complaints of neglect have ever, I believe, been brought against it, and I shall consider, for the sake of argument, that it has proved hitherto, like many other institutions, efficient for the purposes for which it was founded; but, because it has been so, it will not be contended that it is capable of no improvement, or that our progress and greatness as a commercial and maritime country, do not require an equal advancement in all those institutions with which that progress and greatness is allied. Assuming this to be a point admitted, I have now to offer a few remarks on the corporation in question: I shall be able, perhaps, to open the case sufficiently for the subsequent treatment of your correspondent of No. 4, and peradventure, induce others to join in the discussion.

In the first place, it will be proper to understand what the corporation is, &c. History informs us, that "before the time of Henry the Eighth, the Trinity-house was only a kind of college at Deptford, a sort of company of seamen who had authority only from the sove-

reign to take knowledge of those who destroyed sea marks," &c. &c. ; but when, during Henry's reign, England became formidable at sea, and had need for an accumulating naval strength, he laid the foundation of the present navy ; instituted the admiralty and navy officers, appointed commissioners, and fixed the salaries of admirals, captains, and seamen : in short, in his time, the sea service became first a distinct and regular profession ; and amongst other things that Henry the Eighth did for navigation, ships, and seamen, he gave a charter to the Trinity company.

The charter of Henry was confirmed in 1546, by act 1st of Edward the Sixth : again, by Queen Mary in 1553, and by Queen Elizabeth in 1538, who, also, in the eighth year of her reign, granted larger powers to the Trinity corporation, "for the improvement of navigation and the security of ships," &c.—"for that," as it is recorded, "the masters, wardens, &c., of the Trinity-house of Deptford Strond were," in her day, "a company of the chiefest and most expert masters and governors of ships," and they were accordingly charged with "the conduct of the Queen's Majesty's navy royal, and bound to foresee the good increase and maintenance of ships, and all kinds of men, traded and brought up by water-craft most meet for her Majesty's marine service."

At this period, the duties of buoyage and beaconage were invested in the Lord High Admiral, but in the thirty-sixth year of Elizabeth, some dispute had arisen between the Admiralty and the Trinity Corporation, and these things were taken from the Lord High Admiral, Charles Lord Howard, and given to the corporation, "in trust for the maintenance of the widows and children of seamen ; and to improve the government of ships, and encourage navigation in this kingdom."

So it remained until the reign of James the First ; who finding the great use of such a body, and the service they might render the navy, and by regulating marines and sailors from their knowledge and experience in maritime affairs, was pleased to confirm their charter. "To direct, secure, &c., and to ask, demand, and receive certain tolls and duties in lieu and consideration for their charges and expenses in erecting and maintaining sea-marks, lighthouses, &c. &c. ; as also the ballastage, primage, buoyage, and beaconage, to apply the same for and towards the relief of old indigent seamen, their widows and orphans, as before granted by charter of several kings and queens." Subsequent charters were granted by Charles the Second, and James the Second, by whom it was incorporated, 1685, and the house on Tower-hill was erected in 1795. The corporation consists of a master, four wardens, eight assistants, and eighteen elder brethren. Younger brethren may be elected without limit, and from these the vacancies amongst the thirty-one elders are to be filled.

Besides the trust and the direction of pensions, the master, wardens,

&c., are to examine the mathematical children of Christ's hospital, examine masters for the navy, appoint pilots, erect lighthouses, sea-marks, &c. &c., prevent aliens from serving in English ships, punish seamen for desertion and mutiny in merchant ships; hear and determine complaints of officers and seamen of the latter service; clear the river, ballast, &c. &c., arduous duties which no man can be expected to perform for nothing;—there is, therefore, a salary. The Trinity-house has been attacked more than once upon the expenditure of its funds; it has even been asserted (by anonymous writers, it is true) that its monies have been made a source of patronage, used to provide for seamen, who being worn out, had claims to assistance from those, or the connexion of those, who had the power to grant partially to favoured individuals, what should have been impartially administered to all. It is not my intention, however, to reiterate charges of this nature, which I am in fact rather inclined to discredit; it is sufficient to allude to them, as the never-failing consequences of a close corporation—but I have to object to a far greater evil, which every one knows to exist under the present constitution of the Trinity-house, namely: the appointment of the elder brethren. It is well, I hold it, to elect illustrious persons as seniors of any institution. Such elections confer honour on the corporations which make them, but great men are not so honoured when the body of those with whom they become associates in title, are not chosen for their ability, but have acquired their distinction merely by the exertion of interest which more intelligent men have failed to obtain. In such a case, the title conferred as an honour, is an honour, in amount just equal to the interest which was exerted to place an unqualified candidate in his situation,—and no more: neither is it befitting, on the other hand, to elect too many honorary members, lest in this way a corporation be made ineffectual.

Besides the noble master, there are eight elder brethren, *not seamen*, amongst the present elders! The remainder, with but two exceptions, have been chosen from masters of the West India and East country trades, and commanders of the East India Company's service. The election of an elder, is with the elders; and they consider (so their elections prove) that seamen of no other service than those named are eligible to be of their corporation by professional acquirements; for amongst the younger brethren will be found individuals of all ranks waiting promotion, and amongst them officers of the royal navy itself. Waiting, I say, with a most commendable patience, and laudable degree of hope; but they see vacancy after vacancy filled up by the elections in strict conformity, of an East India officer by the East India interest, and a West India master by the West India interest; and not one other question is considered on such occasions, but the amount of influence the candidate can command. This is a fact, sir, that no elder brother will venture to contradict. But it is not a system of election which is

calculated to sustain either the respectability of the institution, or hand it down as one of efficiency worthy of England.

If the duties of the elder brethren consisted merely in a conservancy of the buoys and lighthouses, there is not a mate of any trading vessel employed upon our coast, who is not more qualified for the task than any amongst them: but there are other duties, and the dignity and importance of the corporation is to be maintained. Men superior to mates of coasters are required. "*That 'ere mark,*" and "*this 'ere buoy,*" may pass muster afloat, and be sufficient to express what the service may require; but it is not enough for the councils of a corporation. Men of more enlarged intellect and education are required: men who have a knowledge of hydrography, navigation, nautical astronomy, and who are besides conversant in some degree with the sciences which may be rendered advantageous to naval improvement. How many of the elder brethren will assert that they are practically acquainted with these? There are some who have never wandered beyond the limits of a dead *reckoning*, but have been content to solve the diurnal problem by seeking their argument in tables three or five, because Mackay, or Hamilton Moore, has willed it so. Nor have they ever stayed to find a better reason.

Yet such a man will sit down without the least alarm or misgiving to examine a pilot, a master of the royal navy, or a Christ church scholar, whose business it is on such occasions to answer interrogations only, *not to ask questions!* This is, by the by, a very wise arrangement;—it prevents confusion.

Officers of the royal navy may have an opinion of a master's abilities after he has passed muster, but before the aspirant has undergone their searching ordeal, and received the current stamp, no naval officer could by any possibility give even a guess at his ability.—So think the corporation. And this may be one reason why her Majesty's officers are considered unfit for elder brethren. If this be not an affront to every naval officer on the list of juniors, I am certainly at a loss to find any other term for it. It is literally sticking the fork in the table, and declaring that such a set of youngsters shall not be admitted to the mess. These remarks allude to their want of regard for scientific naval officers; but in making them, I must do the corporation the justice to admit, that the last two elders elected have been judiciously chosen; for they are both of them kind-hearted scientific commanders, good seamen, and gentlemen. But from the fraternity I might select one or two, who would lead you to imagine that the two last qualities were incompatible, and not to be found in the same person. The last election gives me reason to hope that the corporation will give the subject I am upon a dispassionate and patriotic consideration. It is not a hard task: they will readily, I am sure, make an inventory of all the nautical talent possessed by the majority, if they fail to arrive at a correct estimate

of that they lack. But they cannot do wrong, if, in future elections, they determine to value professional standing and skill at a higher rate than mere interest and assurance. In the mean time, naval officers being eligible, should have an eye to the corporation; they should be prepared to assert their claims: for there are amongst them those who possess, in an eminent degree, all those attainments which would render their services highly valuable to the institution, and tend to support its character for efficiency with independence and dignity, beyond the period, which, under existing circumstances, it is most likely doomed to endure.

It is well known that officers of the royal navy, when in commission, often find it their duty to act the magistrate, redressing grievances, and suppressing mutinies: still more frequently are they called upon to direct, protect, and assist, the mercantile navy; there can be no doubt, then, of their qualification; and I trust, that upon the next election of an elder brother, naval officers enough, of recognized ability, will be found amongst the candidates for an honour from which they have too long been excluded. It may not be very long before such an opportunity occurs, and it will be your duty, sir, if you feel any interest for the Trinity corporation, or the navy, to watch the result of the election, and to canvass freely the qualifications of the individual to whom the lot may fall. In doing which, believe me, you shall be heartily welcome to the feeble assistance of

Yours,

Always diligently and obediently to command,

ONE OF THE RECULVERS.

[Our correspondent will always find us ready to attend to his communications on this important subject.—Ed. N.M.]

OBSERVATIONS ON EUROPEANS IN INDIA.

[Concluded from page 334.]

WITH feelings such as I have expressed towards our European Indians, I may escape the charge of prejudice in the remarks which I have made (and have yet to make) on their deficiencies. In alluding to them, I may take them singly, somewhat in detail, or consider them merely as those of society generally; looking at them collectively, and, in some measure, rather avoiding reality. Doubtless it is far pleasanter to sail over the surface of life, as it were, taking that view of human nature which suits a casual sojourner, than to draw aside a veil, the removal of which will give pain. Such a course is adapted to the generality of mankind, who seldom go far beneath the surface: and in India, particularly, such is the seductive nature of the life every one leads, that there little inclination exists to look beyond the present moment. It is essential to keep in view this sort of distinction between reality and appearance, to reconcile what might otherwise seem a

contradiction to my estimate of the Europeans in India. Having set out with describing them as "selfish," "exclusive," &c. (and which I shall have to repeat,) feelings which may exist in our nature, and yet to a mere looker-on, *disposed to be pleased*, may be concealed under the most agreeable and seductive appearance, it would only be probing the infirmities of our poor nature (which, be it observed, is under similar influences the same in all parts of the world) to look further into this part of the subject, and examine motives. Suffice it to say, that everything, to a casual visiter, is such as I have described it—the society agreeable in the extreme. To those who may be inclined to look further, individuals will be found much as I have stated them necessarily to be, from the very nature of the government and institutions of the East India Company, the title to whose possessions, however politically unquestionable, being morally such as leads every one living under them rather to avoid too deep reflection, and to banish such unpleasant considerations in a life of gaiety and splendour.

Perhaps there is no opportunity so well calculated for arriving at the real character of individuals, as when passengers on board a ship on a long voyage; at all events, it affords an admirable means of coming to a true estimate of them; and if any commander of a ship has formed extravagant notions of the society he has mixed with during his stay in India, no better cure can be devised for it than to have a good mixture of them on board as passengers home. If he should have considered a residence in India to have given to the habits of Europeans anything beyond a mere superficial polish, and a liberality, that may, perhaps, be traced to ostentatious pride, carelessness, or perhaps ignorance of the value of money, the delusion will most assuredly vanish. Perhaps I may have been unfortunate; and I will suppose, for the credit of the "Indians," that I was so, in the sample which an occasion of this kind placed before me; but I must say, judging from that sample of their society, that I should be led to conclusions more unfavourable to the whole than I can possibly believe would be justifiable, from such means of judging.

To begin with the exceptions. The first of these was a worthy old gentleman, a civilian, who had seen nearly half a century of service in India. A finished gentleman he was, from head to foot, who with his lady enjoyed a disposition for amiability and kindness rarely equalled, and whose attentions to *one* will live in his latest memory. This excellent couple could not be surpassed in deeds of Christian worth. Two ladies, (widows,) and an amiable *young* lady, unaccountably returning single from India, complete (nearly) the party of whom I can possibly record anything favourable. Next, there was a young civilian, who landed at the Cape, where he had been to remain for his health. He is pretty well described under the general observations of this class. His conduct was altogether unexceptionable, and bespoke his good education as well as extraction. An officer

of a king's regiment, not being an "Indian," was about as poor a creature as the worst of our good old king's bad bargains were; but let me do him the justice to say, he was quite inoffensive. In addition to the above, besides myself, six officers of the Company's Madras army, from a major down to an ensign, formed the sample.

With regard to one of them (a captain) I would have the following remarks considerably qualified. The major was a bully, a sot, and altogether a vulgar fellow; a man whom to shun it was only necessary to know for a day or two. He had been a great many years in India, (thirty-five, I think;) had been, I believe, more than once all but turned out of his regiment; and only attained the step of major as a compromise, on condition that he went into an invalid regiment, and retired. He was a man altogether unfit for society, and a glutton at table. This disgusting personage, I don't think, wanted a fair portion of abilities, a concession which cannot be made in favour of the others, one of whom was also a sot. One of this party was so accomplished as to play a fair hand at whist, and it was said also played well at chess, (though I don't think there was any one on board a sufficient judge of this game to be able to give an opinion.) I don't suppose that a positive fool can do these two things well, otherwise I should say that the whole party came under this designation, excepting the major. These officers were such as a commonly sensible man could not do otherwise than hold in perfect contempt; their conduct at table, including the major as the worst of them, was so utterly disgusting, that I don't think any English gentleman who had not seen it, could either credit, or indeed form an idea of, by any description. Fastidiousness at the table, more or less, pervaded the whole party, not excepting even the ladies; and if a residence in India produces such habits when out of it, how are they borne with on their return to England?

But all this fastidiousness, and that of Europeans in India generally, arises from the notion they entertain, that nobody knows anything about good living but themselves; that they do really understand the culinary art to perfection. This I have already conceded to them. They told the captain of the ship, more than once, that though he might know very well how to treat passengers generally, yet that he might not understand the proper method with "India passengers." This had altogether reference to the table; the proper ordering of which, I believe, no one who knows the captain would ever doubt his having some experience in. But the fact is, that it is not possible to please these people, unless there is the same extravagance as at their own houses. No doubt this would be all very well, and they would have a perfect right to be indulged in it—if they would pay for it. This, however, they do not; as I shall more fully show, in alluding to the unwise practice of keeping the present rate of passage-money coupled with what is expected for it. Rude observations are passed

on what is on the table, or the quality of the wine, beer, &c. &c., such as no other set of people would venture to make, and which good manners would forbid. Of course, they waste fully as much as they eat. They send for everything at table; just turn it over, taste a little of it, and send it away, as unfit for their delicate stomachs! Of beer they take none, except from full bottles; and the same with claret, keeping a tumbler near them all dinner-time, to pour into it often nearly one-half the wine and beer, to be carried away wasted. Inspecting the plate, glass, knives, &c., to see if they be clean, is another process at meal-times; nay, I have even seen rudeness carried to such an excess at the commencement of a voyage. One at the table who thought the dinner not good enough for him, took a memorandum-book, and made a list of the dishes. The captain could not, of course, put up with this long, and an explanation stopped the vulgar and offensive proceeding.

Perhaps some little excuse may be made for the conduct of such persons at table, in their pampered habits. Their sickly stomachs seem to require the nicest delicacies to enable them to eat at all. But even where this excuse could not apply, the same habit existed in some of the party on board: the old major, for instance, who never lacked appetite, and who certainly, in addition to his own individual consumption, wasted more than would keep two or three. I cannot account for these abominable and disgusting manners in men who ought to know better; but disgusting and vulgar in the extreme they certainly are; and, with very few exceptions, they will be found more or less to pervade the practice of every "Indian" out of his own sphere. Perhaps they are to be pitied, as a fine child is that has been spoiled. They leave the roof of their parents before they can know anything of the world. They have been in the habit of being carried out in the most extravagant style in the Company's ships, or more extravagant free traders; and in their fancied important characters of writers and cadets, have been as much spoiled again as they well could be in the time that the passage lasted. On arrival, the first instruction a commander of a ship receives, is to prevent any of the servants of the Company from leaving the ship until an officer is sent for them, for fear, it may be presumed, they should take injury by exposure to the sun. Thus every want is anticipated and provided for; and their further advancement depends upon the rules of the Company's service, and the ordinary course of events. Thus, in their progress, from the day of their appointments to that of their death, they are never exposed to difficulty; that excellent, and perhaps only, school, whence to learn wisdom. They become spoiled grown-up children; for, compared with the mortals who have to gain their reputation and living by their own exertions, they may be considered little better. Providence, however, who has more evenly divided the good and ill of this life than is generally supposed, has no doubt wisely

visited them with disease, to bring them down to the level with others of human kind ; without this salutary arrangement, they would forget themselves altogether ; and with it, it unfortunately only serves to sour their tempers ; for although it no doubt, in the end, contributes materially to teach them self-knowledge ; in the interim, it only makes them more insufferable in their arrogance and behaviour towards others.

Having criticised the East Indians pretty severely, both ashore and afloat, I may now allude to the origin of these remarks. My object, in setting out, was to attempt to analyze the motives, and account, if possible, for the stupidity which people have been guilty of for years, (and which continues with unabated zeal,) in the anxiety which they evince, and the competition which they set up, to have the honour of carrying *such* passengers as I have described. If I could write down this madness, and the folly with which for the last twenty years people have been running a race, to try which could contract the greatest amount of debt, and ruin themselves the fastest for this *honour*, I should esteem myself as effecting some good to that considerable class of tradesmen who suffer by this mania. By so doing, I should be contributing to open a field for respectable people, who are not quite so deranged, in a service which may, by proper management, still be carried on in a style to render it the first and most desirable occupation for men of respectability and education, to be employed in at sea ; as well as affording advantageous employment for ships of the first rate accommodation and construction.

The rates of passage-money formerly paid to, and especially from, India, must never be looked for again, nor anything approaching to them ; nor do I think it ever desirable they should be. This is the first point to be clearly understood. Money is not made in India as it was formerly. The means are therefore curtailed. But with the contraction of people's means, it has occurred here, as everywhere else, that the established habits of extravagance notwithstanding, remain. and will not, till long afterwards, accommodate themselves to the *times*. Thus, when leaving India, the "ways and means" are not forthcoming to pay high rates of passage-money ; and the company has reduced the allowance to the military, (of which the greatest number of passengers will always consist), for their passages, both out and home ; so that the only alternative is, to accommodate the style and expense of conveying them, to such reduced means, and which must absolutely be done, if the ownership and command of the ships is to be made remunerative instead of the constant ruin that has hitherto attended such pursuits. It is astonishing that some people will not open their eyes to the absurdity that has prevailed ever since the opening of the India trade, in this mania that has ruined every one, almost without exception, who has entered thoroughly into the concern of what is called a "regular passenger ship." These ships have been commanded by a

set of unquestionably clever, gentlemanly men; and where is there one left that is solvent at the present day? Notwithstanding this, many are continuing the same system, immersed in debt and difficulty, out of which they have not the most distant chance of ever being extricated. That such men as command, and are, generally speaking, the owners of these ships, though upon borrowed money, should continue a system I have described to be fraught with certain ruin, must be accounted for, and I take the reason to be this: they are infatuated with the style and manner of the people in India, and flattering them by unbounded extravagance on board their ships, to accommodate their tastes, are, in their turn, flattered by the "Nabobs" and "Sodgers:" and once adopting this system, nothing but lack of the means to carry it on, puts a stop to it; they must excuse me charging them with their losing their senses, but this is the plain truth.

This view of the case at once renders the distinction so much coveted by skippers of "Favourite Captain" not much to be envied. However, their's is, at all events, a gentlemanly feeling, and they go on to ruin in gallant style, living like princes during the progress. How long is this ridiculous system to last? probably this season will "bring up" so many of them, that it may have a tendency to open people's eyes. Considerable must, unquestionably, have been the loss of the shipping this season, and to those who are owning them upon borrowed money, and paying extravagantly for their supplies, for want of the proper means, and often, either knowledge or inclination to do otherwise, I should expect it would cause a "wind-up." But, whether it will be a sufficient lesson not to attempt a resumption of the same plans, and whether they will find fools to give them the means, remains to be seen. Surely this system of bad management and extravagance must be drawing to a close, and when it does, there will be room for good ships and more prudent men, to find fair and profitable employment. For my part, I can see no particular pleasure that captains can derive from the conveying of passengers. The responsibility and anxiety (on many points) to a man of proper feeling, not to say actual trouble, especially of the establishment of steward, cook, servants, &c., requires something more than the mere credit a commander gets of being a "favourite," (with permission and encouragement to ruin himself as quickly as possible,) to compensate it. It is no trifling exertion to a man of middle age to take the head of a table of twenty or thirty people and "doing the honours" three times a day for months together. Such a post may be very well for a robust young man, but it imposes a task which it is not every one who would covet, especially when, after all that can be done to please, the chances are, that there still exists dissatisfaction. This indeed, from my observation, I defy any one to avoid, unless he abandons all notion of economy, and permits the unbounded extravagance that has hitherto prevailed.

The rates of passage-money, in comparison with what is expected

for it at present, and which I have said *will not be increased*, are altogether absurd as a compensation to the ships, considering the extravagance indulged on board the "passenger ships:" and yet they have just come to about that mark, that with good management, and a proper understanding as to what is to be looked for, might be remunerative. For instance, in the homeward voyage, 1,200 rupees for a single gentleman, without any servant, having a cabin below, with the usual conveniences. The value of the rupee will be henceforth steady at two shillings, which will render this sum, 120*l.* The poop accommodations of a ship of 500 to 600 tons, ought to be let for, from 1,500*l.* to 2,000*l.*, according to the extent of accommodations, and the number of persons requiring them. This amount for the poop is with difficulty obtained now, but would readily be so, if it were not for the foolish competition at present existing. Now, a commodious free-trader would obtain at this rate, (getting well paid for the large cabin below, and supposing some of the side cabins to be occupied by two or three children and a female servant, for 200*l.*) perhaps from 3,500*l.* to 4,000*l.*

It must be kept in view, that when such a ship is fitted for passengers, her means are curtailed of carrying cargo to the amount of about 200 tons. This, at 5*l.* per ton freight, reduces the sum actually available as passage-money, from 2,500*l.* to 3,000*l.* An excellent abundant table may be kept for the passage home for 1,000*l.*, which leaves 1,500*l.* to 2,000*l.*: take it at 1,800*l.*, one-third of this should go to the owners of the ship for expense of steward, servants, butchers, baker, &c., fuel, water-casks, and general increased expense of the establishment of the ship: one-third to pay the captain for the voyage, and then there remains 600*l.*, whilst the owners get beyond what they would have done, if the ship had been fitted with freight at 5*l.* per ton, and this is to compensate them for having built and fitted a ship at perhaps 5,000*l.* more cost than would have sufficed to have bought a mere-carrying ship of the same size, solely adapted for carrying cargo. It is evident that this is *not* compensation, and nothing would justify the building a new ship to be so employed; nothing but the captain being a party under consideration in such an undertaking (he getting in the above calculation 600*l.*.) and the purchasing of a ship fit for the purpose at a cheap rate, could make such an operation stand the test of figures in commercial calculation of profit and loss. This is a clear exposition of the case, and I am now writing it on board an expensive ship of 500 tons, built for the express purpose, and fitted for carrying passengers, and now full of them, on her way home. The amount of passage-money is 2,232*l.*! from which the agent in India receives 5 per cent., and the captain gets a better rate of passage-money than most ships of the season. Figures are stubborn things, and when made proper use of, defy contradiction. It would be well if they were used to a little better purpose than they have been heretofore, by those who undertake to fit out "crack passenger ships" for India.

When I insist upon a total reform in the manner of living on board these ships, I would be understood, that this consists only in the entire abolition of all *unnecessary* and *superfluous* expenses and habits. I would have a table kept in the English fashion, qualifying it sufficiently to Indian tastes, and abundantly supplied, and such as no private gentleman of England *could* be dissatisfied with. I would have good wines of sufficient variety, beer, &c., and consider of no limitation in their use; good attendance, cleanliness, &c., &c., and all this may be done, and every reasonable person rendered perfectly comfortable for the sum I have named above, as what the passage-money from India should be. But no French cook to make jellies and blanc-mange every day, which, however, is the least part of the expenses. Their existence on board implies extravagance in everything else. I have actually seen 30*l.* charged for *eggs* in one of these ships. In the usual proportion of eggs to other things a table requires, what must be the total expenditure for its supply? and when children and women-servants reject Cape wine from their table, what are we to expect the sum total to amount to when every whim and extravagance is freely indulged in? A steward told me, that in a ship, now on an India voyage, and with, I think, fewer passengers than in this, they had usually thirty-two dishes on the table at dinner! and he did not say this as being anything extraordinary, a thing he seemed to think quite of course. And be it remembered, that as respects the bulk of passengers, (military,) these airs are assumed by men actually poor; men who have nothing but their pay, and who, in England, will, in all probability, never see anything like so good a dinner as they sit down to every day on board ship, (except when they are fortunate enough to get an "invite,") till they embark to return to India.

I have now accomplished what was my object in committing to paper my ideas of the East Indians; giving them every credit for their hospitality, &c., when in their own domicile, exposed their insufferable vanity when out of it, and endeavoured to reform the extravagant and ruinous system so long pursued in the passenger ships that return them to England.

At Sea, 1837.

A LOOKER ON.

THE QUALIFICATIONS OF MASTERS AND MATES OF SHIPS.

March, 1838.

SIR,—I am happy to observe two articles in this month's Nautical, (March,) on the qualifications of masters and mates of vessels. In the proper and able remarks of a "London Trader," I perfectly agree. Nor do I differ from "Philo Nauticus," on the necessity of an examination into their qualifications. I doubt, however, the propriety of subjecting the masters and mates of merchant vessels, to an examination, by judges composed wholly of officers of the royal navy.

It would be as *incongruous* as is the practice of subjecting the masters of the royal navy, on whom it is well known the chief charge of navigating the ship devolves, to an examination by members of the Trinity House, consisting of retired ship-owners. There is an able article on this subject in the *Nautical*, for July, 1836, by J. A. S. The examiners, I conceive, should be partly officers of the royal navy, and partly retired, but not superannuated ship-owners. But I leave this point to be decided by wiser heads. Only let us get the principle introduced, that they are to be subjected to examination at all.

"Philo Nauticus," having commented on my article in your December number, with a view to invalidate my positions, I hope I shall be permitted a word in explanation. Having limited myself to the space of a sheet of writing paper, I have not room to quote his exact words. But I think he maintains that, shipwrecks are principally owing to the ignorance of navigation and seamanship, of the masters and mates of vessels, and not to the unseaworthiness or insufficiency of the vessels. I am still of opinion, that, in attributing one half of wrecks, my position, to the defective construction and subsequent defective condition of the vessels; I understated, and did not overstate the truth. In proof, a London trader says there were ninety-five lost by foundering, with every soul on board, in sixteen months, in addition to 600 others that are annually lost. I shall call these in round numbers 700 vessels lost annually. Now, Philo Nauticus admits, that one out of every seven vessels is *lost at sea*. Here then are 100 vessels lost in the open sea from insufficiency, to begin my list with. Supposing Lord Nelson, Lord Collingwood, Captain Cook, the circumnavigator, Albert, the master of Falconer's *Britannia*, Philo Nauticus, or any, the most perfect seaman and navigator who ever lived, or lives, to have been on board of these vessels, what could they have done without means? Nothing.

"But here alas! their science nought avails,
And droops unequal, and experience fails."

Philo Nauticus's supposed case of two vessels to be correct, should have been reversed, one *new*, crazy, and insufficient, and the other, *old*, strong, and well adapted. Suppose, for instance, the *Royal William*, or *Gibraltar*, which were each broken up at above 100 years old, compared with a *Sunderland* vessel, built to last only seven years. But Philo Nauticus says, quite triumphantly, and assumes it to be unanswerable, "It is certainly in vain to say, that if vessels are lost upon the rocks, that want of strength is the occasion of their getting there!" Now, whoever said or dreamed of anything so absurd? I will, to please him, allow, that every one of the remaining 600 vessels lost annually, have got ashore owing to the ignorance, drunkenness, and incompetence of the masters and mates. This is ample concession, and will surely satisfy Philo Nauticus. Their getting ashore did not cause their inevitable destruction. A common

question at an Irish wake is, "Why did you die?" and the approved answer is, "For want of breath." Thus then with the ship after she was on the rocks, "Why were you broken and destroyed?" the answer must be, "For want of strength to hold together, and be preserved." But in case that Philo Nauticus should think that I am jocular on so serious a subject, and cannot make out my case, I beg to inform him, if he is not already aware of it, that the Challenger frigate, which was built with an open bottom, got ashore and was totally lost, and about the same time, the Cleopatra, Vestal, and still more particularly the Pique frigate, which vessels were all built with solid bottoms, got ashore upon rocks, and the latter vessel received most fearful damage, and yet they were, owing to their improved construction, all three preserved. Surely Philo Nauticus will not attribute these vessels getting ashore to the want of skill or seamanship in their commanders and officers, nor the loss of the former, and the preservation of the latter three vessels, to their having been kept off the rocks by the superior abilities of their officers. I would also strongly recommend Philo Nauticus to read the account of the Lightning and Flamer government steamers, in the March number of the Nautical, for 1835, pages 154 and 155, and he will there see, how frequently a vessel may get ashore, even in the most dangerous circumstances, without being lost, and almost undamaged, from the very simple circumstances of being properly built and equipped. If these instances will not satisfy Philo Nauticus, that vessels are lost *principally* owing to their original defective construction, and subsequent defective condition, more than owing to the deficiency in conducting them, I will send him scores of other similar cases, *usque ad nauseam*.

But, if Philo Nauticus will look at the cause producing shipwrecks, he will find what Mr. Buckingham asked in his place in parliament, when introducing his bill, and commenting on the ignorance, professional and moral, and drunkenness of masters and mates to be true. "What cares the ship-owner for the loss of his vessel," he suffers no loss by it, being *insured to the value*. And this happens without attributing anything unfair to the ship-owner, who, in too many other instances,—and the road is quite open and safe to him, and he cannot be brought to account for it,—by means of being *over-insured*, makes a profit by the loss of his vessel. Your correspondent, Lieutenant Kelly, in your last December number, puts this case in its only true light, viz., by insisting, in order to prevent shipwrecks, that ship-owners should be obliged to take a share in the risk of their vessels. Only make this obligatory, and carry it fully into effect, and the seaworthiness and sufficiency of the vessels—the necessary attainments of the masters and officers, together with their sobriety and that of their crews, and all other requisites conducing to safety, including improved construction by means of solid bottoms and sides, &c., will all be adopted by ship-owners as matter of course, for the preservation of

their property. This alone will do more good than all other legislative acts and measures, which may, or can be enacted. Under such restrictions, as private interest will always exceed public duty in operation, the construction of our merchant vessels, would excel that of our men-of-war, and our merchant vessel, instead of being one of the most disreputable of ships,—for such is the fact,—would soon become the most reputable, and a pattern to all nations of the world. There is no want of science, information, or skill on the subject, but safe ships are not wanted so long as the public pays for all losses. At present, neither ship-builder, ship-owner, merchant, nor underwriter suffers by the loss of a vessel, and the merchandise she bears, which are insured to the full value. And to the revenue it is a direct gain. It also increases the trade and profits of the ship-builder and underwriter *but*—aye here is the *BUT*—as usual, John Bull, or the public, pays for all. Long life to him, and a short one to sailors, whilst he pleases to continue the system. Any expression of dissatisfaction with the system, or things as they are, would cost him too much trouble, and is not to be thought of. Let us hope, however, that the introduction of iron, now becoming so general in the fabric of steamers, into that of sailing vessels, will effect an improvement in the safety of ships, without disturbing honest John, or awaking him from his placid and comfortable sleep.

I am, Mr. Editor, &c.,
BRITANNICUS.

CHRONOMETER ACCURACY.—VERIFICATION OF THE LONGITUDE OF PARIS.

THE effect of the stimulus, so long and so liberally applied wisely to the improvement of chronometers, by the government of this country, has lately been exhibited in a very interesting experiment, made at the cost of Messrs. Arnold and Dent, Chronometer makers, of London. This house early distinguished itself in the competition excited by the Board of Longitude, for excellence in chronometers, and received rewards from the national treasury, the amount of which appeared to the ignorant of that day, to be greatly disproportioned to the object attained. The experience of after times has fully justified this prudent munificence on the part of the state in the opinion of every person qualified to form a judgment on the subject. And the result of the experiment alluded to, and of which we propose to give a brief account, is another instance of the sure and beneficial consequences, which, sooner or later, follow the sowing of “good seed in good ground.”

The inestimable value of good chronometers to many classes of scientific men, and particularly to navigators, needs now no proof. And

though it may be demonstrated that a theoretically perfect time-keeper of any kind may never be accomplished, we shall show that an approach has been made to practical perfection in the chronometer, so far satisfactory to all parties interested in the possession of good ones, that if little further progress be made in their improvement, practical science may rely upon their sufficiently accurate performance, and close approximation to truth. To furnish a decisive proof of this fact, Messrs. Arnold and Dent determined to submit the going of a large number of chronometers made by them, to a test of great severity, which had been suggested to them as unimpeachable: and therefore perfectly satisfactory to all impartial judges.

A chronometer made by Mr. Dent himself, had already excelled every other submitted to the examination of the Astronomer-royal, during the long period of "the twelve years' public trials," made by order of the Lords of the Admiralty, at the Royal Observatory of Greenwich. But it is evident that whenever the excellence of this, or other chronometers, which carried off prizes at these trials, was insisted upon, it might be hinted, that they were kept during the whole year of their probation in a state of repose, and that the motion, regular and irregular, to which they would necessarily be exposed whenever they should be employed in actual service, might utterly destroy their apparent perfection. It was to meet all insinuations of this nature so far as regarded the chronometers produced in the manufactories of Messrs. Arnold and Dent, that the additional test to which we have alluded was suggested to them by a person highly qualified to decide upon the conditions under which such an experiment ought to be made.

The proposition was, to select two meridians, the difference of longitude between which was considered to be accurately obtained, and then by transporting the chronometers from one of these meridians to the other, to ascertain the difference of longitude given by them, and compare it with the difference previously received as correct. Among the conditions considered indispensable to a satisfactory prosecution of the experiment, were the following:—that the meridians should be considerably distant from each other, and that the line of connexion between them should present such obstacles to the quiet conveyance of the chronometers as might render the trial one of more than average severity.

The meridians of Greenwich and Paris, and the country between them, were considered as eligible, for the following reasons. The positions of the two national observatories of England and France were upon these meridians, and also considerably separated from each other; and their difference in longitude had been the subject of reiterated observation and research, for a long period of years, by the most eminent observers, and with the best means, ordinary and extraordinary, that both countries could furnish.

The route from Greenwich park to the gardens of the Luxembourg presented great variety of land, sea, and river conveyance. It included the risks attending embarkation and disembarkation, and the transit of custom-houses. The notorious dangers incurred by every scientific article of delicate construction, from the meddling of the ignorant and curious custom-house officer, were in the present case very much reduced by special orders from the two governments.

Last, and not least, the *corps scientifique* at each observatory, whose duty it would be to receive the chronometers and register their performance in various stages of the experiment, were persons possessing in the highest degree the qualifications of intelligence, experience, and disinterestedness, and were, therefore, witnesses whose testimony would be unimpeachable.

The observatories of Greenwich and Paris were, for these reasons, determined upon as the limits of the experiments. The resident Astronomer-royal of each was consulted, and found ready to give every facility and assistance to a fair and complete accomplishment of the object in view. Besides these gentlemen, Captain Beaufort, the hydrographer to the Admiralty, encouraged the attempt as a mode of ascertaining the longitude-difference in question, which had never been carried satisfactorily into execution, and upon his application the respective governments suspended the interference of the custom-house officers. Under existing circumstances, great, and probably insurmountable, obstacles might have occurred, and evidence, as to the accuracy and fidelity of the operations, perfectly free from all suspicion, could not have been obtained, if they had not been countenanced by the influence of persons thus officially situated.

Considering these means of severe scrutiny, and the certainty of the public attention being directed to the result, whatever that result might be, we cannot but express our admiration of the zeal, to say nothing of the risk of loss incurred by Messrs. Arnold and Dent, in thus voluntarily exposing themselves to the expense and chances of such an experiment. Nothing but the firmest confidence, founded on long experience of the excellence of their chronometers, could have justified an experiment, in which anything short of success might have injured a long-established reputation. This confidence, however, they had, together with the ability and *esprit national* to set about an experiment, not only highly honourable to themselves, but to their country; for we doubt whether any other land can produce artists, (or even an association or institution of citizens,) possessing the power, and the will to prosecute so costly and interesting an experiment.

Twelve chronometers, of their own making, were taken by Messrs. Arnold and Dent, for this purpose. They were deposited in the Royal Observatory at Greenwich, under the care of G. B.

Airey, Esq., the Astronomer-royal. By his order they remained there a sufficient time, and a register was made by his assistants of the rate, &c., of each chronometer. They were then delivered into the care of Mr. Dent, who, with two assistants, transported them to the Royal Observatory at Paris; where they were received by M. Arago, the Astronomer-royal of France. His assistants, by his direction, kept registers of the rates in the same manner as at Greenwich, but for double the length of time. At the expiration of this period they were again delivered to Mr. Dent, who again conveyed them to the Greenwich Observatory, where the third and final register of the rates was made. By this process two distinct journeys were made, and the chronometers, at three periods of the experiment, viz.—at the commencement, the middle, and the termination; were taken out of the hands and the observation of their makers and every person connected with them, and placed in the care of two sets of competent impartial observers, English and French, who made the several comparisons and registers, from which alone the data have been drawn for the preparation of the documents describing the experiment and its results, which have been laid by the English Astronomer-royal before the Royal Astronomical Society of London.

Though all ordinary care was certainly used in the conveyance of the chronometers, it must be admitted, that if this had been carried to the utmost practicable extent, it would have been impossible, however it might have been desired, to prevent motion of various degrees and kinds being communicated to the case containing them. From London to Greenwich they were conveyed by a hackney coach; from the latter place to Blackheath on the shoulders of a porter; thence to Dover by the stage coach; at Dover they were embarked in an open sailing boat, in which they crossed the channel; they were landed, it being very low water, at the entrance of the harbour of Boulogne, and carried over the slippery fragments of rock, up into the town, between two persons; the ordinary diligence transported them to the coach office at Paris: during the short stay there they were exposed to a severe concussion by the rude mode of examination adopted by a customs-agent, who had not been advised of the permission for their importation into Paris without examination; a porter carried them to an hotel; and a *fiacre*, finally, trotted with them to the southern suburb of Paris, where the observatory is situated. Their return-journey to England was similar, but purposely varied, by embarking them on board a steamer at Boulogne, and bringing them up the Thames to Greenwich, where they were landed, and carried by hand up to the observatory.

On the macadamized roads of Kent, and on part of the route from Boulogne to Paris, nearly resembling them, there is no doubt that the regular going of the chronometers was exposed but to little derange-

ment; but through the streets of the towns both in England and France, and over many miles of the paved roads of the latter, the agitation was violent and often long continued, and severe concussion occasionally occurred.

From the above sketch of the transit, it will be evident, that considerable variety was adopted in the mode of transport, and that some of the surfaces which the chronometers travelled over, were likely to test severely the power which they possessed of maintaining a uniformity of rate under such unfavourable circumstances.

The results of the experiment may be given in the following extract from a communication on the subject, presented to the Astronomical Society, by the English Astronomer-royal, at the sitting of the 12th of January last, and published in one of the subsequent monthly notices of the society.

“In this experiment the whole difficulty turns on determining the rate of the chronometers during the transit from the one station to the other. Mr. Dent employs two methods for this purpose,—the first of which may be explained as follows: suppose the chronometer gaining; the error of the chronometer from mean time being observed, when it was taken from the observatory at Greenwich, and also when it was brought back, the difference of the two errors gives the number of seconds t gained during the interval of its absence. But t may be considered as made up of two parts,—the first consisting of the number of seconds gained during the journey to Paris and back; and the second, of the number of seconds gained during the fourteen days it remained in the Paris Observatory. The last of these is known from the daily comparisons made at Paris with the observatory clock; subtracting it, therefore, from t , there remains the number of seconds gained while travelling; and this being again divided by the number of days occupied in the two journeys, the result gives the mean daily *travelling rate* to be applied as a correction to the difference of mean time at the two places, as shown by the watch. The difference of longitudes, found in this manner, from the mean of all the observations, is 9m. 21.14s.

“The second method adopted, consists in obtaining the mean daily rate of each chronometer during the seven days previous to its removal from Greenwich, and during the first seven days after arriving at the Paris observatory, and assuming the mean of these two to be its mean travelling-rate in the journey from Greenwich to Paris. In like manner, the comparison of the mean daily rate of the seven days before leaving the observatory at Paris, and of the seven days after returning to Greenwich, give the travelling rate during the journey back. By this method the difference of meridians by the chronometers in the journey from Greenwich to Paris, is 9m. 22.08s.; and in the journey from Paris to Greenwich, 9m. 20.49s. The difference is 1.59s.; but the mean of the two is, 9m. 21.28s.; differing from the

result obtained from the other method, only by 14-hundredths of a second.

“Mr. Dent has given the official errors and rates received from the two observatories, arranged in a tabular form; thus supplying the information necessary to admit of the statements being placed in any other point of view.”

The journey to and from Paris may be regarded as two experiments, for they were entirely distinct from each other, and each is, in consequence, a corroboration or otherwise, of the other. That they confirm each other, and that in a remarkable manner, is seen from the communication made to the Astronomical Society.

Let us now see how near the mean difference given by the two journeys agrees with that now annually published in the *Nautical Almanac*, and which was adopted after the correction by Mr. Henderson of the error which had crept into the result of the long and costly signal-experiment carried through both countries by Messrs. Herschel and Sabine, in conjunction with the French observers, MM. Col. Bonne and Largeteau in 1825.*

In the *Nautical Almanac* for the present year, the observatory of Paris is stated to be in E. longitude, 9m. 21'5s.

The longitude given by the chronometers under consideration, calculated by the first method of Mr. Dent, is 9m. 21'14s. differing therefore from the received longitude only thirty-six-hundredths of a second, or about one-third.

If we take the longitude given by the chronometer-experiment, as calculated by the second method of Mr. Dent, we find it to be 9m. 21'28s., which differs but twenty-two-hundredths (or about one-fifth) of a second from the longitude published.

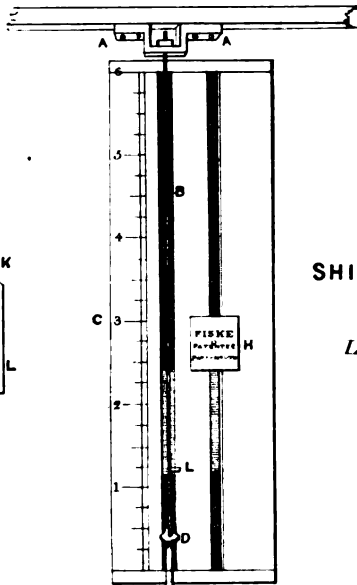
* This signal-experiment, besides the services of Messrs. Herschel and Sabine, required, on the English side alone, a detachment of artillery,—horses, waggons, men,—and blue-lights,—rockets,—four night-glasses, by Dollond, mounted on posts firmly fixed in the ground,—a scaffold raised for the purpose on the roof of the Royal Observatory of Greenwich,—exact information as to azimuths of certain stations in the great triangulation of 1821,—distances of observed objects sufficiently short,—absence of haze, &c., in the atmosphere,—and of local fog on land and sea,—twelve nights of observation,—ten signals on each night of observation,—two observing stations,—the observation of two signal-stations,—one rocket-station, and *four chronometers!*

A duplicate at least, of these preparations was necessarily provided on the French territory. “The weather throughout the whole of this time was magnificent,” and yet, “owing to a combination of untoward circumstances, which no foresight or exertion on the part of Captain SABINE or myself could possibly have led us to calculate on, or enable us to prevent, and which the most zealous endeavours on that of Colonel BONNE, failed to remedy, no less than eight out of the twelve nights' observations were totally lost, as to any result they might have afforded, and the remainder materially crippled.”—HERSCHEL. *Philos. Trans.* 1826.

In future experiments for determining similar differences of longitude, will not all assistance and apparatus beyond the “chronometers,” be considered not only unnecessary, but absurd?

Taking the longitude given in the *Nautical Almanac* to be exact, the approximation to truth by the chronometer-experiment, is astonishingly near. But, considering the simplicity of the means, the absence of calculation, and the reduction of all observation to the mere reading-off of a dial, and thus annihilating all the usual sources of error, is it too much to infer from this experiment that the longitude may be obtained by chronometers more correctly than by any other mode hitherto used by the most expert observer? We see that the result of the signal-experiment even in which the aid of chronometers was indispensable, after having been reported by Mr. Herschel as "not very likely to be altered a whole tenth of a second, and very unlikely to be altered to twice that extent, by future determinations," was altered soon afterwards, by at least the whole tenth of a second, through the detection of errors by Mr. Henderson, even though some of these detected errors balanced themselves. We see, then, even after this operation had been performed by Mr. Henderson, he adds, "It may, therefore be said, than 9m. 21·46s., or to the nearest tenth of a second 9m. 21·5s., is the most probable value of the difference of meridians in question; that it is likely that this determination is within two-tenths of a second of the truth; and we also see, that after the signal-experiment of 1835, the *Bureau des Longitudes* of France gave in the *Connaissance des Temps*, the national Nautical Almanac of the French, the longitude in question, corrected to 9m. 22s., and still continues to give the same quantity, so that the most accurate observers speak even now of a *probable* value only; and the annually published statements of the two most carefully compiled books in the world, differ more from each other, than do the results of the chronometer-experiments, as ascertained by the two modes of Mr. Dent, or than either of these do from the longitude given in the *Nautical Almanac*. Small as this discrepancy is, yet, as it occurs in two national publications of the highest utility and character, it should not be permitted to continue. The *locus* of the error ought to be detected, and as the chronometer-experiment has been made by Englishmen, and also induces a great probability that the English statement in the *Nautical Almanac* is nearer the truth than that of the French in the *Connaissance des Temps*, such a difference ought not to remain unexamined by the latter.

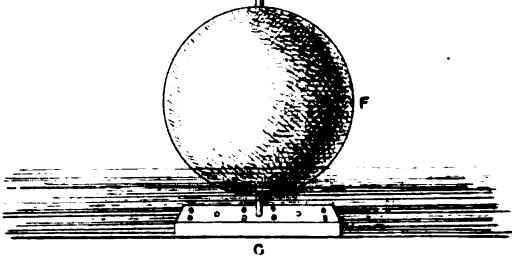
The satisfactory result of this trial of the accuracy of good chronometers, and the reliance that may be placed on them, has naturally excited a desire that the received differences of longitude of other national observatories, should be tested by these invaluable instruments. We understand, that further propositions, having this object in view, have already been made to Messrs. Arnold and Dent, and are now under consideration.



The
SHIPS WELL GAUGE
and
LEAK ALARM.

- A* The Bracket to which the Rod is fastened by a nut & screw
B The Rod on which the Tubes and Ball slide
C The Frame with a Scale of Inches
D The Collar to indicate the quantity of water in the well
E The Tubes lifted by the rising of the Ball
F The Copper Ball which rises as the water increases in the well
G The Plate on which the rod *B* is fasten'd

- H* The sliding Plate that secures the Alarm to the back of the Frame
I The Alarm Box
K The Screw which works in the Plate *H* & fixes the Alarm to the height it is required to run off
L The Lever to make the Alarm run off when moved by the Collar *D*
M The Pin which requires moving upwards to the word Set previous to winding up the Alarm
N The Key-hole for winding up



THE SHIP'S WELL-GUAGE, AND LEAK-ALARM.

Portsmouth, 5th April, 1838.

MR. EDITOR,—Being an admirer of your valuable periodical, I take the liberty of sending you a drawing with a few remarks, which I trust will be acceptable to most of your readers. The drawing is to illustrate an instrument suitable to all classes of ships, for the purpose of showing the quantity of water in the well. Referring to the plate, the ball F is placed in the well, and occupies a space of twelve square inches. The scale C is fixed in a conspicuous place close to the pumps, so that while the men are pumping they can see if the water is increasing or diminishing. At the back of the scale, the alarm-box, K L M N, slides to any given height, and when the collar D is lifted by the ball rising so as to touch the lever, the alarm instantly goes off and strikes a bell, calling the attention of those on duty to an increase of water in the well, arising from leakage that must have taken place. Many accidents occur from the want of an early intimation of the increase of water in the holds of our merchant shipping; valuable stores have been lost, and the ship rendered damp, &c. By the means here proposed this would be timely prevented; the plan of sounding the well by the carpenter every hour, might be obviated, and all mistake avoided. Other remarks on the advantage of this well-guage might be made in comparison with the present mode of dipping the well, and much in favour of the former, but they must present themselves to any seaman.

I remain, your obedient humble servant,

J. H. FISKE.

 Naval Chronicle.

MONTHLY GOSSIP ON NAUTICALS.—*Si vous voulez mon cher.* I perceive by your taking my gossip that we are one, or rather two, of one mind. Give me but latitude and you shall have *nautical* longitude in plenty from your adopted ARGUS. In truth, I have been on the *qui vive* for my say on nauticals, having a lengthy budget for you. You will find me in the dative case, as the school-boy wished the gentleman at the pastrycook's window; seeing that you and your readers are always in the optative mood. *Mais pour commencer.*

And let me first dip my pen in sweets, and with the motto of Nelson for my text, "*Palman qui meruit ferat,*" let me say a few soft words in awarding honour to whom honour is due. 'Tis always a grateful task, and in the spirit of the letter, I will commence with telling you of our own naval heroes; and first, of the worthy Admiral Garrett, who has so long and so well managed the naval establishment at Haslar. This gallant officer has just retired from his duties and carried with him a memorial of the veneration and esteem in

which he was held, consisting of a piece of plate which served to record that esteem in these words:—"Presented to Rear-Admiral H. Garrett, by the officers of the royal hospital at Haslar, and of the Royal Clarence yard, upon his retirement from the superintendency of those establishments, as a token of the high sense they entertain of his honourable, impartial, and gentlemanly bearing towards them as an officer; and of his friendly, hospitable, and attentive consideration towards them in his private character." It is a question I shall leave for you to determine, whether there is greater pleasure in giving or in receiving on these occasions.

The East India Company also, with a feeling which does honour to that ancient body of honest Englishmen, have expressed their sense of the valuable services of H.M.S. *Andromache* in *their* seas, towards the suppression of pirates, by voting a sword, to cost two hundred guineas, as a present to her gallant Captain, Henry Ducie Chads, C.B. The officers, by the way, of the same ship have not been forgotten by the merchants of Bombay, having each received similar tokens of regard; and the master, (Mr. James,) a valuable sextant, as his choice, on which was a suitable inscription. So much for the eastern hemisphere. Looking to the south I see Captain Shepherd, of H.M.S. *Sparrowhawk*, winning the esteem of the captain and crew of the *Alert*, a French brig, at Monte Video, by his *cordial* assistance in extricating her from a shoal on which she had grounded after leaving that place, on the 6th January, for Valparaiso. And turning my eyes to the westward, I perceive honourable assurances there towards Commodore Sir John Peyton, in an address of the mayor of Kingston, and the merchants of Jamaica, for the interest he has taken in all matters connected with the mercantile prosperity of England's favourite island in that part of the world. I regret to inform you that Sir John has reached home with a broken constitution, and in a state of health which has given his friends the deepest concern.

Looking nearer home I see the gun-room officers of the *Actæon* presenting their Captain, Lord Edward Russell, with a silver snuff-box as a parting token of their regard; and Commander W. H. Peirson, receiving a similar testimonial from his messmates, the gun-room officers of the *Madagascar*, both on the occasion of those ships being paid off; nor let me omit to mention the regard in which Lieutenant Richard Robinson, of the former ship, was held by her steerage officers, who have presented him with a valuable silver cup. Such a mark of esteem to a first-lieutenant, Mr. Editor, does honour to all parties concerned, and long may their warm hearts live to enjoy such pleasing recollections. The people along shore have been at work too, I see. At Newcastle, Lieut. Samuel Thomas Carter has been presented with a handsome piece of plate, for saving the crew of the well, No. 310, of your tables of wrecks, lost off Lowestoffe in November last; and to depart from the service, Mr. T. B. Bateson, of Shields, is voted a piece of plate by his fellow townsmen, for distinguishing himself by his liberality and attention to the comforts and privations of seamen employed in his whaling vessels, the *Grenville Bay* and *Gambier*. These vessels have been sent forth by him prepared for the risk of being locked up a winter in the ice, and the horrors of starvation are provided against by this worthy gentleman, without the power of an act of parliament to call forth the dormant seeds of philanthropy so often smothered in their growth by other noxious weeds.

in the human mind. Let the seamen of the north look to this. Of other worthy deeds I have few to tell. I see Mr. George Peacock, master of the *Andromache*, distinguished himself by saving her boatswain's son, in March last, while she was fitting at Sheerness, the boy having accidentally fallen overboard; and Lieutenant Napier, (Aid-de-camp to General Napier,) on his way to the Cape in the ship *Euphrates* with the governor, saved a man who had fallen overboard, and who, with the former, but for these gallant acts, would have perished.

You have heard the late lamentable accounts from the African squadron, the sad ravages of fever on board of the *Buzzard*, *Forrester*, *Etna*, and *Raven*; let us hope they are ceased. A recent arrival from the Cape brings the intelligence of the death of Sir John Barrow's son, the late commander of the *Rose*, alluded to in the *Nautical*, on the paying off of that vessel, as having remained at the Cape in consequence of ill health. His career was short. He left the college in the beginning of 1825, to join his first and (by a curious coincidence of events) his last ship, the *Rose*, then commanded by the Hon. Captain Abbott (now Lord Colchester.) From the *Rose* he joined the *Cambrian* in the Mediterranean; was present in her at the battle of Navarino, and remained in her till she was wrecked at Carabusa, in 1828, having won the affectionate esteem of Captain Hamilton. A circumstance happened on this occasion, which I must relate. Being placed in charge of one of the captured pirate vessels, with directions to convey her to Malta, he had lost his quadrant which was lying in the middy's berth of the *Cambrian*, and being in the lower side of the vessel was considerably immersed in the sea. But the quadrant must be had—so he dived into his old berth, cut the quadrant away from the deck, and found his way to Malta by it, in the prize, without the assistance of a compass. Such a youth would have done for Nelson in former days. He returned to England in the *Warspite* to pass his examination, and was applied for by Sir Robert Spencer on his commissioning the *Madagascar*. He was promoted from her in October, 1829, into the *Blonde*, Captain Sir Edmund Lyons, in which ship he remained till her time was out, when he joined the *Belvidera*, at Malta, and continued in her till he was made a commander, in May, 1832. After remaining two years on shore he was appointed to command his first ship, the *Rose*, and joined Admiral Sir Bladen Capel's squadron in the East Indies, where, in the arduous service of destroying Malay pirates in the Straits of Malacca, he contracted the fatal illness which has deprived the naval service of a promising and valuable officer, and his family and friends of an amiable and affectionate relative; one who was strictly attentive to his professional, as well as to his moral duties.

The celebrated Dr. Bowditch, whose name was spread far and wide by his book on navigation, has been "gathered to his fathers," and late arrivals from Australia bring intelligence of the death of Sir John Jeffcott, the judge at the new colony of Adelaide; some of whose sentiments in his professional capacity I read in one of your late numbers. He was drowned by the upsetting of a boat. In his loss the colony has been deprived of an excellent officer, and this country of a valuable servant. And now let me tell you of another of those generous deeds, few and far between, of rare occurrence indeed, but which do honour to our race. The crew of a water-logged timber-ship, the *Elizabeth Caroline*, after being twenty-three days on the

wreck, and reduced to their last few hours of existence on the little provision and water they had saved, by their piercing cries attracted the attention of an American ship, the *COMMERCE*, CAPTAIN PERRY, of Charlestown, to Liverpool. It was late at night on the 6th of March, but the will of an Almighty providence directed their succour: the *Commerce* shortened sail, wore round—and the words, “*Keep up your hearts, boys, there is too much sea to board you now; but I will never leave you till I take you all off,*” carried the balm of joy, never to be described, to the hearts of these poor mariners. Nor was it once only that Captain Perry thus cheered them, but repeatedly passing within hail of them, they were said again and again, until after two nights and the intervening day were passed, when the weather allowed him to fulfil his words; and in fulfilling them to follow them up with those deeds of humanity to a fellow seaman in distress, which a seaman so well knows how to perform and how to appreciate. They were taken care of and placed on board the *Hercules*. For the sake of human nature I would throw a veil on the other side of the picture. A barque, believed to be English, on discovering the wreck, had hauled up for her with the view, it would seem, of plunder; for on discovering there were yet living souls on board, she hauled off, leaving them to their fate! Captain J. Toup Nicholas, and the rest of the officers who have joined him in subscribing to purchase a piece of plate, to present to Captain Perry, deserve the assistance and cordial thanks of every friend to humanity. May they not go unrewarded.

Speaking of rewards, I perceive that the American Government has just bestowed the sum of 24,000*l.* on the family of the celebrated Fulton, for his presumed discovery of steam navigation. It should have been for carrying over to America the information which he had obtained from witnessing the experiments in 1801, on the Forth and Clyde canal, which experiments were being made by Mr. Symington, at the expense of Lord Dundas. For further information on the subject I would refer those of your readers interested in it, to p. 451 of your volume for 1833, where they will find a straightforward statement concerning Mr. Symington, the inventor of modern steam navigation, and whose descendants, it is to be hoped, will one day meet the reward from their country to which *they* are really entitled. The virtues of iron steam-boats, it appears, are being fast discovered. Another I see has just been launched, called the *Lancashire Witch*,* at Mr. Fairburn's yard, in Manchester, though not of such large dimensions as the *Rainbow*, lately launched by Mr. Laird, at Liverpool; and now the admiration of all who have visited her in the Thames. The *Columbus*, with Mr. Howard's quicksilver engines, has been making a trip from Liverpool to Dublin. It is said she is to cross the Atlantic. Mr. Howard must get more than ten statute miles per hour (= 8·6 nautical) before he succeeds. Will he inform your readers *when* he is going to start?

And so the real Atlantic steam-boats, the American liners, not of old, but of modern steam navigation, are realizing the views of their projectors, and pulling down the castles of the theorists one after the other. They will never do—oh no: the sea will make short work of those huge affairs, was the cry of some, while that of Dr. Dyonisius

* Dimensions—length, one hundred and forty feet; beam, eighteen feet; draught of water about three feet; engines, two 40s.

Lardner was, "As well might they attempt a voyage to the moon, as to run regularly between England and New York."—Well, and what has been done? Are the theorists or the experimentalists right:—let the vessels speak for themselves. Sirius started on the 4th April; arrived at New York on the 23rd. Left New York on the 1st May; arrived home on the 18th, thus performing the voyages, out and home, in six weeks and two days, with eight days to refit. Now for the Great Western. Started on the 8th of April; arrived at New York on the 22nd. Left New York on the 1st, and arrived home on the 22nd May.

The arrival of these vessels* at New York excited considerable sensation; no doubt the citizens of the new world see clearer than John Bull, that they will in future form the principal communication between the two countries, and as railroad travelling leaves the slow coaches behind, so will these great steamers surpass the sailing vessels. A hundred thousand persons, accompanied by bands of music, witnessed the departure of the *Great Western*, and a fleet of steamers escorted the "illustrious stranger," as she was termed, as far as Sandy Hook, determined in the true spirit of liberality to do honour to enterprize, from whatever land it came. Nor are the people of Bristol backward in appreciating the grand enterprize achieved by their favourite steamer: their enthusiasm is justly raised, and her return to Bristol was welcomed by joyful demonstrations, ringing of bells, &c.; in short, all Bristol was in an uproar. She brings sixty-eight cabin passengers, at thirty-five guineas each, (amounting to little short of 2,400*l.*—what will Dr. Lardner say to this?) besides an assorted cargo, and 20,000 post letters—no bad fortnight's work either. She commenced with 660 tons of coal, and on her arrival at New York had 203 tons remaining. She left New York with 570 tons of Newcastle, and arrived with 178 on board at Bristol. Her average daily consumption has been twenty-seven tons; with the expansion valves up, thirty-two tons. It is expected she will make the passage in twelve days, with twenty-four tons expenditure per day. There will be another race between this vessel and the *Sirius*, the latter leaves London on the first, and the *Great Western* leaves Bristol on the second of next month for New York.

Well, as might be expected, all this has given a fillip to the progress of the *British Queen*, (a larger vessel † than the *Great Western*) which was floated out of her building dock at Messrs. Curling and Young's yard, at Limehouse, on the 24th, in presence of a vast concourse of spectators. All is anxiety about her. She is to be sent to Glasgow forthwith, for her engines; and the British and American steam navigation company, to which she belongs, will no doubt reap golden harvests with their giant *Queen*.

I hope to see something of the logs of these two vessels in your next, Mr. Editor. At all events, they afford a practical proof that the voyage to New York per steam, is not so chimerical as supposed to be; and as to the commercial part of the affair, that will look after itself.

[* We hope to be enabled to lay the logs of these vessels before our readers in the next number of the *Nautical*.—ED. N.M.]

† The *British Queen* is a handsome vessel. Her extreme length from figure-head to taffrail, is 275 feet; upper deck 245 feet; keel 223 feet; breadth within paddle-boxes 40 feet 6 inches; to have engines 500 horse-power. Mr. Huggins, of Leadenhall-street, is about to publish a handsome aquatint engraving of her.—A.

So, a French steamer, called the Phoenix, has made her appearance on "our waters," from Boulogne, between which port and London she is to run daily. I am induced to notice her in consequence of proceedings concerning her being connected with a scheme to which I alluded in my last, of one of our companies, the Thames haven, the plans of which are likely to be verified.

The Thames haven docks must be made, sooner or later; and if the London and Havre steam company do no more than effect this plan, they will be entitled to the thanks of all Englishmen. What think you of the dirty jetties off Greenwich giving way to a grand pier, to extend some hundred feet along the banks of the river? The works are actually contracted for, and operations are to commence forthwith. I hope to tell you something soon to the same effect nearly, concerning the new docks there, to which I alluded in my last. These improvements are signs of the times, and there are other signs besides, at least so say the captains of the different steamers that have been fined for running more than five knots per hour above Greenwich. There was a waterman's boat swamped the other day, by the swell caused by one of these steamers; and it is some matter of surprise that more are not served the same way, seeing that they are mere bottoms, only fit for a duckpond. It is high time these dangerous affairs were reformed; but depend on it the small river steamers have seen their best days, and the Thames haven and Greenwich steam docks are just starting up in time to keep alive that spirit of enterprize which is not to reach above Blackwall. The trade of the port of London, they say, is on the wane; and, if I mistake not, the prevailing railroad mania, with the construction of harbours, added to the tortuous and dangerous navigation of the river, which has got such a bore in the tunnel* as already to interfere with its navigation, will make it decline still more; added to which there is a spirit of enterprize abroad that will require renewed energies of the Londoners to keep pace with. Besides, the *outer* ports are looking up. There is Weymouth increasing its piers; new docks projected at Langston, near Portsmouth; the people at Poole bestirring themselves about a breakwater at Portland, besides the river docks; and I see that something is going forward at Paington, in preparations for restoring their ancient harbour; and a new harbour constructing at Granton, to which that worthy old seaman, Captain Bain, late of the Monarch, has been just appointed harbour-master; and all these are in addition to others, which I find from time to time have been mentioned in the Nautical.

But what think you, Mr. Editor, of the chamber of commerce at Waterford actually petitioning the legislature to establish a general system of night signals for steam-vessels to prevent the collisions between vessels, which are so frequently occurring at night, and notice of which I find in the Nautical occasionally? Is it possible, that there is no law on the subject yet? Pray tell me what became of the recommendations of the pilotage committee, whose report I find in your pages of 1836? The opinion of seamen seems to be in favour of

* This is a curious fact: several vessels having grounded or run foul of others over the tunnel, the depth being so small at low water, arising from the matter thrown into the river to form the crown of that great bore.

coloured lights ; but surely it is high time that some act of the legislature should be passed on the subject !

Talking of lights, I see there are several established lately ; a floating-light at Demerara, another at Elsinore, and another in the Baltic, besides the foundation of a splendid lighthouse on Europa point at Gibraltar. There was something said the other day about lights at the entrance of the Bosphorus, of which I will tell you more anon, when symptoms appear of their being adopted ; but the former I send you some further account of.

They say that ship-building is looking up about Sunderland, and well it need do so, on looking at the additional wrecks in your last number. Between Cox-Green and Sunderland pier there are above a hundred building, from 150 to 500 tons each ; and seeing that the amount of loss incurred at that part alone since August last, (*i. e.* from 5th August, 1837, to 5th May, 1838) amounts to 46,800*l.* there needs a fresh supply for the underwriters, or rather for John Bull, to pay for. But a word with this gentleman by and by. The *Termagant*, I see was launched at Portsmouth, on the 29th March. And I lament to tell you that there are yet no tidings of the poor *Briseis*. On the 27th of March she had not reached Halifax.

So, it is intended to establish an Admiralty court in China. They say that our seamen are having it all their own way in that part of the world, and that masters of merchantmen are not to be captains of their own ships. What says this for the laws regarding merchant seamen ?

Merchant seamen—aye, true, that brings me to the *Dreadnought*, and the rest of the charitable, I will say glorious, institutions for the benefit of the merchant seamen of this maritime state. Would that they were always sailing under the same flag of humble demeanour and good conduct that they are to be found with in these places. Look at some of them abroad ; but it is to be hoped they are few. Well, the Duke of Wellington, as a master of the *Trinity House*, has been presiding at the anniversary dinner of that establishment, and setting a noble example, as he always does, both to sailor and soldier ; and her Majesty, the *East India Company*, and the *Trinity House*, have added their usual contributions, with those of too many benevolent persons to mention here. The *Royal Humane Society* has had its anniversary meeting, and distribution of rewards, &c. And the *Royal Naval Benevolent Society* has distributed 634*l.* among the widows and orphans of their late brother officers. The *British and Foreign Sailors' Society*, for the propagation of the Scriptures among Christian Protestants, have held their fifth anniversary, and I perceive by an advertisement in your last number, that the *Sailors' Home*, and *Destitute Seamen's Asylum* is to be patronized by a fancy bazaar, at the establishment in *Well-street*, on the 5th of July. Let us hope it will be well attended, for it is an excellent establishment ; and I agree with *Sir Edward Parry*, that it is a disgrace to Great Britain that such an institution should owe the honorary secretary, *Captain Elliott, R.N.*, the sum of 600*l.* The speeches of that meeting are worth reading. I am glad to see that *Lieutenant Arnold, R.N.*, assisted by the exertions of *Sir Jahleel Brenton*, at *Greenwich*, has succeeded in putting down a disgraceful monopoly of some tavern-keepers, and emancipated the coal-whippers of the port of *London* from their grasp, thereby recovering them from an iniquitous

system of plunder, attended by intoxication, debauchery, and vice.

You will begin to find me verifying my words on setting out; but I have a word or two more to say. I see Sir Robert Inglis is grappling with the question of the slave trade in earnest; and, saving a vulgar phrase, is placing the saddle on the right horse, in pointing out that arch offender, Portugal, as lending her flag, besides carrying on herself the vile system of slave trading, in spite of all that this country has done to put it down. To remedy an evil it is first necessary to know where it lies. Sir Robert has pointed to the root of it, and the sooner the axe is brought to bear on it the sooner will the cause of humanity be served. The object of Sir Robert is to obtain an act of parliament, making it piracy, a measure which it seems to be the opinion of those who know something about it, is actually necessary, if we are really in earnest on the subject.

I shall now take my leave of you, in the midst of all the preparations which are going forward from one end of this kingdom to the other, to celebrate the coronation of our young and amiable Queen, on the 28th of June; and I shall close my letter with wishing her a long, happy, and prosperous reign, and success to that useful and valuable little periodical, the *Nautical Magazine*.

ARGUS.

P.S.—I have omitted to tell you that England's own representative in science, the amiable Sir John Herschel, has been welcomed to his native land from the Cape of Good Hope, whither he had resorted for the purpose of enriching the stores of science, in the pursuit of his astronomical discoveries. I need scarcely add that Sir John distinguished himself at Cape Town as much by his philanthropic, as by his scientific pursuits, and that he departed with the regrets of the good people of that distant colony. One word more. You will be gratified to learn that a survey has been made at the Cape, by that valuable engineer officer, Major Mitchell, of a piece of ground for the proposed site of a lighthouse on Cape L'Agulhas, to light the many tons of British shipping annually safely round the "Cabo Tormentoso." I see also that the surplus port and jetty dues are to be appropriated towards completing the stone jetty commenced some years ago at Cape Town; and a grant has absolutely been passed by the Colonial Government for the erection of a lighthouse at the entrance of Table Bay, near the spot where the Royal William was wrecked last year, and where numbers of valuable ships have perished. I find the American expedition to the Pacific, which I alluded to in my last, is about to sail, under the command of that scientific officer, Lieut. Charles Wilkes, of the United States' navy, Captain Jones having declined it from ill health. Do you know that Captain H. R. Brandreth, of the Royal Engineers, who is well known from his plans of the excellent works at Ascension, is appointed to the office of civil architect to the Admiralty, lately vacated by Mr. Taylor. Adieu. Pray call the attention of your readers to the trial which took place with the new iron steamer, *Rainbow*, the other day in the Thames.

Your devoted, ARGUS.

TABLE XXXII.

For reducing Irish Miles to English, and English Miles to Irish.

1 Irish mile = 1.27272727 English mile.

1 English mile = 0.78571429 Irish mile.

Irish, or English miles.	English miles, and Dec. parts.	Irish miles, and Dec. parts.	Irish, or English miles.	English miles, and Dec. parts.	Irish miles, and Dec. parts.	Irish, or English miles.	English miles, and Dec. parts.	Irish miles, and Dec. parts.
1	1-273	0-786	40	50-909	31-429	79	100-545	62-071
2	2-545	1-571	41	52-182	32-214	80	101-818	62-857
3	3-818	2-357	42	53-455	33-000	81	103-091	63-643
4	5-091	3-143	43	54-727	33-786	82	104-364	64-429
5	6-364	3-929	44	56-000	34-571	83	105-636	65-214
6	7-636	4-714	45	57-273	35-357	84	106-909	66-000
7	8-909	5-500	46	58-545	36-143	85	108-182	66-786
8	10-182	6-286	47	59-818	36-929	86	109-455	67-571
9	11-455	7-071	48	61-091	37-714	87	110-727	68-357
10	12-727	7-857	49	62-364	38-500	88	112-000	69-143
11	14-000	8-643	50	63-636	39-286	89	113-273	69-929
12	15-273	9-429	51	64-909	40-071	90	114-545	70-714
13	16-545	10-214	52	66-182	40-857	91	115-818	71-500
14	17-818	11-000	53	67-455	41-643	92	117-091	72-286
15	19-091	11-786	54	68-727	42-429	93	118-364	73-071
16	20-364	12-571	55	70-000	43-214	94	119-636	73-857
17	21-636	13-357	56	71-273	44-000	95	120-909	74-643
18	22-909	14-143	57	72-545	44-786	96	122-182	75-429
19	24-182	14-929	58	73-818	45-571	97	123-455	76-214
20	25-455	15-714	59	75-091	46-357	98	124-727	77-000
21	26-727	16-600	60	76-364	47-143	99	126-000	77-786
22	28-900	17-286	61	77-636	47-929	100	127-273	78-571
23	29-273	18-071	62	78-909	48-714	150	190-909	117-857
24	30-545	18-857	63	80-182	49-500	200	254-545	157-143
25	31-818	19-643	64	81-454	50-286	250	318-182	196-429
26	33-091	20-429	65	82-727	51-071	300	381-818	235-714
27	34-364	21-214	66	84-000	51-857	350	445-455	275-000
28	35-636	22-000	67	85-273	52-643	400	509-091	314-286
29	36-909	22-786	68	86-545	53-429	450	572-727	353-571
30	38-182	23-571	69	87-818	54-214	500	636-364	392-857
31	39-455	24-357	70	89-091	55-000	550	700-000	432-143
32	40-727	25-143	71	90-364	55-786	600	763-636	471-429
33	42-000	25-929	72	91-636	56-571	650	827-273	510-714
34	43-272	26-714	73	92-909	57-357	700	890-909	550-000
35	44-545	27-500	74	94-182	58-143	750	954-545	589-286
36	45-818	28-286	75	95-455	58-929	800	1018-182	628-571
37	47-091	29-071	76	96-727	59-714	850	1081-818	667-857
38	48-363	29-857	77	98-000	60-500	900	1145-455	707-143
39	49-636	30-643	78	99-273	61-286	1000	1272-727	785-714

PORT REGULATIONS OF TAHITI AND MOOREA.

[The following code of regulations will be acceptable to the commanders of ships bound to the Pacific. It is presented to us with that view by Mr. A. Eardley Wilmot, late of H.M.S. Actæon, whose account of the recent visit of that ship to the South Sea Islands, will appear in an early number.]

1. A pilot will go off to every vessel duly displaying her ensign, or national colours, and making the usual signal for a pilot, as soon as she approaches within a reasonable distance of the ports, to conduct her in; and on her departure, one day's notice being duly given, the pilot will also take her again to sea; for which service he shall receive seven dollars: three dollars and a half to be paid when the vessel comes to an anchor at the proper place of mooring, and three dollars and a half when the pilot has again taken the vessel to sea. If the pilot does not go out to sea, he is not entitled to the pilotage.

2. Every vessel which comes to an anchor in any of the ports of Tahiti or Moorea, is to pay a port fee of eight dollars, before she can be allowed to receive any water, or other refreshments from the shore. In case of afterwards anchoring in any other parts of Tahiti or Moorea, every vessel is to pay four dollars at each port; and if the said vessel come to anchor again in the first port, prior to leaving these islands, she is to pay four dollars.

3. No master or commander of a vessel is to discharge any seaman, or any other person belonging to his vessel, or to allow such person or persons in any way to leave the vessel, without special permission from the government, under a penalty of thirty dollars; twenty of which shall go to the Queen, six to the governor of the port where the ship anchors, and four to the person who conducts the individual to his ship, or makes known the circumstance to the proper authorities.

4. No master or commander of a vessel is allowed to land any passenger without special permission from the Queen and governors.

5. Any person deserting from a vessel shall be immediately apprehended, without waiting for orders to that effect from the master or commander of the vessel from which he has deserted, for which the person apprehending him shall receive eight dollars, if apprehended within eight miles from the vessel, and fifteen dollars if apprehended at a greater distance. No master or commander is allowed to refuse taking back the deserter thus returned, under a penalty of thirty dollars. He can have him kept in prison till the vessel be ready for sea, by paying one dollar per week for his board. Should the same person desert again from the ship, the same sum will be demanded for taking him as in the first instance.

6. Any deserter found after his vessel has sailed, shall be put in prison, and kept to hard labour for six months.

7. Any person who entices another to desert, or secretes him when he has deserted, or who in any way assists deserters, shall cut four whale-boat loads of fire-wood, and carry it to the place appointed.

8. No ship's company, or any part of a ship's company, to be on shore in the night. Any person belonging to a vessel found on shore after nine o'clock, without a written pass, will be taken up and confined till morning, when he will be allowed to go on board his vessel, by the master or commander of such vessel paying two dollars; one for the

government, and one for the person who takes the seaman into confinement,

9. Any person belonging to a vessel, on being convicted of selling, or in any way bartering with spirituous liquors of any kind, either on board or on shore, shall have no further trade or communication with the shore, but shall leave the port immediately.

10. Any native, belonging to the shore, found working on board any vessel or boat on Sabbath-days, to make fifty fathoms of public road.

11. In case of heaving a vessel down, the master or commander shall pay to the government thirty dollars, for which he shall have the use of the wharf, and a large store-house.

12. Should the master or commander of any vessel refuse to pay the pilot his lawful fees, after the aforesaid service has been duly performed, or in any other way maltreat the said pilot, or refuse to comply with any of the above port regulations, a full statement of the facts, with a copy of these regulations, will be transmitted to the proper authorities, in the country to which the vessel belongs.

POMARE ARII.

NEW LIGHTHOUSE AT GIBRALTAR.—On the 26th of April, the foundation-stone of a new lighthouse was laid at Europa Point, Gibraltar, in the presence of more than 10,000 persons. The ceremony, which appears to have excited considerable interest, was attended by much military parade, and performed by the Governor-general, Woodford, assisted by the provincial grand lodge of freemasons, who marched in procession to the place, headed by the band of the 82nd regiment.

When the masonic line arrived at an arch which marked the boundary of the space assigned it, the provincial grand-master, accompanied by his standard and sword-bearers, and his three stewards, led the way to the platform on which the foundation-stone, a cube of three feet, and a beautiful specimen of the rock, was in readiness to be laid.

The ceremony was then conducted according to the regular forms of the craft. Silence having been demanded by a single knock, a masonic consecration hymn was sung by the band. The stone was gradually raised, and a prayer was delivered by the provincial grand-master, in these words:

“ O holy, holy, holy, Lord God, Most High, Great Architect and Great Geometrician of the universe, whose voice, mighty in operation, the raging seas and the stormy winds obey; whose mercy is over all thy creatures, but whose eye beholdeth with special favour the sons of men; look down, we beseech thee, from thy heavenly throne, on all those who are here assembled to magnify thy power and providence.

“ We humbly acknowledge, most gracious Lord, that the works and intents of men are vain and fruitless, unless they be sustained and hallowed by thine aid and benediction.

“ Grant that this work which is now begun, may be continued and ended in thy name.

“ Grant that the purpose of British benevolence may be effectually accomplished for the benefit of the present age, and of generations yet unborn.

“ Grant that the sacred and mysterious art by which thy holy temples

have been reared in every nation of the habitable globe, may even now be blessed in this public monument of good-will to man.

“ May the light which shall henceforth guide the benighted maritime to the ‘ haven where he would be,’ be hailed by thousands and ten thousands of ‘ all people, nations, and languages,’ as the emblem, feeble and faint indeed, but still the emblem, of that glorious light which yet shineth in darkness, to direct the steps of those who wander on, in a heedless or hopeless course, towards Thee, the only source of spiritual light and safety.

“ May those consecrated labourers who, from the dawn of time, have been the chosen servants and appointed artificers of the immaterial and omnipresent Deity, still have their followers amidst the mortal throng, duly qualified, and prompt to lend their ancient lore and mystic services to the furtherance of every work which can increase the happiness, or diminish the perils, of the human race.

“ In faith, hope, and charity, O Father and Preserver of us all, we approach thy footstool, to commend ourselves and this design to thy favour and protection. ‘ Prosper thou the work of our hands upon us; O prosper thou our handywork.’

“ Receive our prayers, and accept our adorations, for the sake of that Eternal Word, who was from the beginning before all worlds; to whom, in the end, shall ‘ the gathering of the people ’ be, even the friend and brother of all who sincerely and devoutly invoke his ever-blessed name.”

The coins and inscribed plate were presented by the respective bearers, to the P. G. M., and were deposited by the Governor.

The mortar having been laid by the P. G. Superintendent of Works, and spread by the P. G. M., the stone was slowly lowered, while the band played an adagio movement of Mozart’s. At a few minutes before six o’clock it rested on its bed. It was then tried and proved by the P. G. M., and declared to be “ well-found, true, and trusty.”

The Governor having struck the stone three times with the master’s gavel, announced, according to the form of the inscription on the plate, that

“ This foundation-stone of a lighthouse, erected by order of the Colonial Government of Her Majesty Victoria, Queen of Great Britain and Ireland and their Dependencies, in the first year of her reign, was laid on the 26th day of April, A.D. 1838, A.L. 5838, with military and masonic honours, by his Excellency Major-general Sir Alexander Woodford, K.C.B., &c. &c. &c. Governor and Commander-in-chief of the town and garrison of Gibraltar, assisted by the Rev. W. Edward John Burrow, D.D., F.R.S., Provincial Grand-Master, for the protection of Mediterranean commerce, the saving of human life, and the honour of the British name ! ”

The union-jack on the flag-staff was now lowered, and the royal standard hoisted. “ God save the Queen ” was played by the bands of all the regiments on the ground; whilst a grand salute was fired by the royal artillery, and *feu de joie* by the flank companies on duty, and the troops on Windmill-hill.

The evening was fine, the sea enlivened by lateen boats, decked with colours, and the whole living mass which thronged the rocky promontory apparently enjoying the novelty and splendour of the scene. It was a day likely to be long remembered by the inhabitants of Gibraltar, and others who were present; and, we may hope, auspicious.

cious for the many crews who might hereafter be endangered by the want of a sufficient beacon on this renowned portal of the Straits.

The lighthouse will stand on a platform thirty-eight feet square. The diameter of the column at the base will be twenty-seven feet, and its height sixty feet.

The building will be entirely constructed of hewn stone, and crowned with a lantern ten feet high, with a very powerful light. It will thus form a very handsome object, as well as a most valuable acquisition.

MEAN LEVEL OF THE SEA.—Mr. Editor, in the February Number of the *Nautical Magazine*, some remarks are made on certain observations of Captain Denham, R.N., about the mean level of the sea, which were communicated to the British Association last autumn. I beg leave briefly to call your attention to the result of similar observations made by my father, so far back as 1830, and reported by him to Lord Medwyn in January, 1831, in terms of a remit from the Court of Session, regarding the boundary of the salmon-fishing stations in the Dornoch Frith.

These observations, which are very cursorily alluded to in the report which was printed in the course of the process, fully corroborate the statements of Captain Denham, and proved that at the Dornoch Frith, *a point in the vertex equidistant from high and low water of any one tide, is on the SAME LEVEL, or coincides with the points half-way between high and low-water of EVERY OTHER TIDE;* and "at this point," says my father, "the mean level was fixed." This point is clearly no other than that which is very briefly, and at the same time accurately, described by Captain Denham, as "one invariable mean height, common to neap and spring-tides—the half tide mark;" and the coincidence of two sets of experiments, made at different times, and on the opposite shores of the island, without any communication between the observers, goes far to prove the universality of the phenomenon which has been detected. At the Dornoch Frith, these phenomena recurred with unfailing regularity, and appeared to be quite uninfluenced by the *age of the tides*, or the state of the weather.

If you consider these facts worthy of a place in your excellent Journal, they are at your service, from your most obedient servant,

ALAN STEVENSON, Civil Engineer.

Edinburgh, 6th March, 1838.

To the Editor of the NAUTICAL MAGAZINE.

METEOROLOGICAL SOCIETY, May 8th, 1838.—Dr. M'Intyre, F.L.S. &c., in the chair. Several members were elected, and an auxiliary formed at the Adelaide Station, Australia. A highly interesting paper was read on the meteorology of Kendal, (Westmorland) for 1836—37. There was also read a communication from Lieut. R. W. Smart, R.N., harbour-master, Dundee, containing hourly observations during some days and nights, to prove the failure of Mr. Murphy's predictions; who, on these occasions, made "unlucky hits." "Perhaps," concluded Lieutenant Smart, "Mr. Murphy will say we are *too far north* for him!" The concluding paper was one of great interest to the meteorologist, by Mr. Woods, instrument maker to the Society; containing "directions for making meteorological observations on land or at sea," with the manner of using every instrument; to which were

added some remarks on the subjects of research proposed by the society. The meeting then adjourned.

FLOATING-LIGHT AT DEMERARA.—"The committee of pilotage of Demerara, hereby notify to masters of vessels bound to this port, that yesterday, the 13th March, 1838, there was moored off this bar a floating-light vessel, with a fixed white circular light, in three and a half fathoms at low water spring-tides, and exactly seven degrees N. latitude, and 57° 59' W. longitude—the lighthouse ashore at the port of Demerara bearing S.W. by S., distance twelve miles. All vessels inward-bound will be supplied with a pilot from the said floating-light upon their heaving to for that purpose. And it is also notified, that the light will be lowered every night exactly at twelve o'clock, to be supplied with fresh-trimmed lamps. This will occupy *not more* than fifteen minutes, during which time a common lantern will be hoisted at the mast head.—(Signed) ROBERT CHRISTIE, Secretary.—Pilot-office, Demerara, March 14, 1838."—*Shipping Gazette*.

ELSNORE, April 17th.—The season is quite open, and the ice which has been drifting on our coast has disappeared, and it may be expected that the lower ports in the Baltic are nearly, or will soon be entirely free of ice. A floating-light has been moored in the grounds at Salt-holm, which will remain stationary until the 21st of December, provided the ice does not oblige its removal at an earlier period. It will be situated in S. $\frac{1}{2}$ E. $\frac{2}{3}$ Danish mile from Drago harbour, and E.S.E. 31.6 mile from Sandrer buoy, and pilots will, at all times, be on board to take charge of vessels coming from the Baltic, and requiring their assistance through the grounds.—*Shipping Gazette*.

COMMITTEE OF NAVAL AND MILITARY OFFICERS.—*The Gazette* announces that the Queen has been pleased to direct letters patent to be passed under the Great Seal authorising and appointing Arthur Duke of Wellington, K.G.; Charles Duke of Richmond, K.G.; Gilbert Earl of Minto, G.C.B.; Robert Viscount Melville, K.T.; the Right Hon. Henry Grey, (commonly called Viscount Howick); Rowland Lord Hill, G.C.B.; the Right Hon. Henry Labouchere; Vice-Admiral Sir Charles Adam, K.C.B.; Lieutenant General Sir James Kemp, G.C.B.; Vice-Admiral Sir Thomas Masterman Hardy, Bart., G.C.B.; Admiral Sir G. Cockburn, G.C.B.; Lieutenant-General Sir R. H. Vivian, Bart., G.C.B.; Major-General Sir Alexander J. Dickson, K.C.B.; Major-General Sir Henry Hardinge, K.C.B.; and Col. Sir Richard Williams, K.C.B.; to be her Majesty's commissioners for inquiring into the several modes of promotion and retirement now authorized and granted to the officers of her Majesty's naval or military forces; for ascertaining the comparative situation of the officers in each branch; and for reporting whether, due regard being had to economy and to the efficiency of the service, it may be practicable and expedient to make any, and what, changes in the present system.—*Times*.

GULF OF FINLAND NAVIGATION.—"The Hydrographical Board of the Imperial Russian Admiralty, hereby give notice to mariners, that from the opening of the navigation of the present year, there will be moored every season an ordinary buoy at the northern extremity of the Reef of Perespe, and off the sand-bank of Wikala, in the gulf of

Einland, and that the flag beacon which has been hitherto placed near the island of Eckholm, will be taken away, as having become useless."

PLYMOUTH BREAKWATER.—The violent gales of the 24th and 25th of Feb. last, produced their effects on the Breakwater at Plymouth, and owing to its greater exposure, they were mostly confined to the western area. So great was the force of the sea, that 8,000 tons of stone from the outer fore shore, or foundation of the structure, were fairly lifted by it, and thrown from the outside over this wall of masonry into the sound. It is a curious fact, that the mass of these stones were principally lifted from opposite the circular end on which the lighthouse is to stand, and deposited in an E.N.E. direction from whence they came, thus showing the direction in which the action of the sea was strongest. The upper part of the Breakwater also suffered severely, many large granite blocks, weighing from three to nine tons, of which it is formed, (being firmly cemented and dove-tailed into each other,) having been displaced and washed over into the sound. This is supposed to have arisen from the compactness of the work not allowing the free escape of the water in the body of the structure when acted on by the great pressure of the external waves, upwards of 250 tons of this work have been displaced, and carried over to the north side of the Breakwater. The tide on this occasion rose 5 feet 6 inches higher than usual, and within 6 inches of the great tide of 1824, when a breach was made by the sea in the main body of the work.

THE RAINBOW.—*New Iron Steam-vessel.*—"A few gentlemen connected with the General Steam Navigation Company lately made an experimental trip in their new first-class steamer, the *Rainbow*. At two o'clock, the signal was given, and within a few seconds this magnificent vessel was seen going at race-horse pace from her station at Brunswick-wharf, Blackwall, with all the advantage of a rapid tide down the river. It was said that the Red Rover steamer had sent a challenge to the *Rainbow*, and some anxiety was manifested for the result, as the speed of that vessel is well known; but the Rover did not leave her moorings, and the new competitor for fame had to look out for some other crack boat with which her strength could be measured. Fortunately for the desired experiment, the *Vesper*, Gravesend steamer, the fastest boat on the river, came by with her usual rapidity, and after five minutes, had elapsed, on finding that the Rover would not move, it was determined to try what could be done against the eclipse of the Pool. The *Vesper*, having a good start, gallantly maintained her advantage to the last, and though she lost one minute in landing passengers, the *Rainbow* could not give her the go-bye. The *Rainbow*, however, diminished the distance so rapidly in the race, that she passed the pier at Gravesend just as the *Vesper* cleared the jetty. The whole distance was done in an hour and twelve minutes; and though the *Vesper* had five minutes' fair start, she had but one minutes' precedence at the pier. The rapidity at which the two steamers came down with the tide, may be imagined from the fact, that the distance from the wharf to the pier-head is calculated at twenty-three miles, and we believe that, in reality, it does exceed twenty. After seeing the *Vesper* safe into port, the *Rainbow* continued her voyage down the stream, until meeting the *Emerald*, from Boulogne, coming

up with as much pretension as if the river was her own, it was resolved upon to go about, and see what could be done with the crack boat of the French station. The superiority of the Rainbow was manifested after a short struggle, and the Emerald had the mortification to labour under a cloud of her rival's smoke; but then it must be admitted that the Frenchman was deeply laden, his deck encumbered with passengers; while the Rainbow had scarcely any ballast on board, and floated like a cork on the water. No sooner was that trial over than a formidable enemy appeared in view. The Comet, Gravesend steamer, left the pier, just as the Rainbow passed it, and a contest immediately arose, which was maintained with undiminished ardour, until both reached Blackwall. The Comet is one of the fastest river-boats, but she had the mortification to see the Rainbow beat her in gallant style, and there was a clear advantage in favour of the latter of twelve minutes from Gravesend to Brunswick wharf. The return home was made against the tide, but a first-rate pace was preserved throughout, and it was admitted by every person on board, that either with or against the stream a more perfect steamer could not be constructed. The Rainbow is 600 tons burthen, with 180-horse power, light and elegant in her appearance, and quite a model of beauty from stem to stern. From some peculiarity in her construction, there is none of that tremulous motion felt which is so annoying in ordinary steamers; and it is most remarkable how little back-water is made from her wheels. It is not yet determined on what station she is to be placed; but wherever her destination may be, it must be admitted that for gracefulness of shape, solidity of construction, and extraordinary speed, the river Thames has not as yet seen her equal."

["The above description, which we borrow from the *Morning Post*, is so spirited and accurate, that we can add but little to it. The result of the experiment of yesterday proves the Rainbow to be the swiftest steamer in the river, and this without the sacrifice of either grace of form, or solidity of construction. The Vesper was a full mile a-head when the Rainbow started from Blackwall, yet the former reached Gravesend only one minute before the latter; but it was on returning, and when going against the tide, that the Rainbow displayed her admirable qualities to the greatest advantage. She fairly shot by the Emerald, and completely ran away from the Comet, the latter boat passing Blackwall only twelve minutes after the Rainbow had been fairly made fast to the wharf. The Rainbow is 212 feet long from stem to stern, her beam measures 27 feet, and her tonnage and power are as stated above. Owing to her great length, she will require much care in turning in a narrow channel. This manœuvre was admirably effected yesterday. At eight minutes before two she started from Bugsby's Hole, and at three minutes after three she passed Gravesend church; having run, with the tide, a distance of about twenty-two miles in one hour and eleven minutes—a degree of speed which we believe has never been equalled even by the most rapid of the American steamers. At Lower Hope Point she turned, and was again abreast of Brunswick-wharf, Blackwall, at a quarter before six."—*London Courier*.

[We have inserted the foregoing account of the trials of the Rainbow at the request of her builder, Mr. Laird, of Birkenhead, in answer to the proposal of our correspondent Quid, in page 259 of our April number, and are authorized to add, that that gentleman does not consider that the proposed trial of the Rainbow with a Thames

steamer, even if it terminated in the favour of the former, would be fair, as the *Rainbow* is a sea-going vessel, and the Thames vessels are not, besides being purposely built for speed. We understand that the Lords of the Admiralty went down the river in the *Rainbow* on the day the *British Queen* was hauled out of her dock to witness the qualities of that superior iron vessel. It is a curious coincidence, that the largest iron steamer yet launched, was thus present at the floating of the largest wooden steamer yet built. Her engines were manufactured by Messrs. G. Forrester and Co., Vauxhall.—ED. N. M.]

THE ATLANTIC STEAM-SHIPS.

THE steam-ships, having crossed the ocean with unprecedented dispatch, arrived at New York, on the 23rd, bringing with them the most irrefragable testimony of the practicability and usefulness of steam navigation between the old and new worlds.

The *Sirius*, a powerful and well-built vessel, of about 700 tons burden, commanded by Lieutenant Roberts, R.N., left Cork on the 4th inst., and after encountering some very severe weather, arrived inside the Hook, on Sunday evening, the 22nd inst. She took the ground there, but floated again with the rise of the tide, and came to anchor in the North River, early in the morning of the 23rd. The news spread like wild-fire through the city, and the river became literally dotted all over with boats conveying the curious to and from the stranger. There seemed to be a universal voice in congratulation, and every visage was illuminated with delight. A tacit conviction seemed to pervade every bosom that a most doubtful problem had been satisfactorily solved; visions of future advantage to science, to commerce, to moral philosophy, began to float before the "mind's eye;" curiosity to travel through the old country, and to inspect ancient institutions, began to stimulate the inquiring; in short, there seemed to be a complete maze, a whirl of fancies and projects, through the general mind; all were delighted, every one was a speaker, every Englishman was giving vent to the proud emotions of his heart, and calm reflection was for a time at an end.

Whilst all this was going on, suddenly there was seen over Governor's Island a dense black cloud of smoke spreading itself upward, and betokening another arrival. On it came with great rapidity, and about three o'clock in the afternoon its cause was made fully manifest to the accumulated multitudes at the battery. It was the steam-ship *Great Western*, of about 1,600 tons burthen, under the command of Lieutenant Hosken, R.N. She had left Bristol on the 7th instant, and on the 23rd was making her triumphant entry into the port of New York. This immense moving mass was propelled at a rapid rate through the waters of the bay, she passed swiftly and gracefully round the *Sirius*, exchanging salutes with her, and then proceeded to her destined anchorage, in the East River. If the public mind was stimulated by the arrival of the *Sirius*, it became almost intoxicated with delight upon view of the superb *Great Western*. The latter was only fourteen clear days out, and neither vessel had sustained a damage worth mentioning, notwithstanding that both had to encounter very heavy weather; nor had either vessel the necessity to suspend the action of its steam machinery, notwithstanding the long and heavy seas through which the vessels had to plod during the gales. The *Sirius*, indeed, has but two masts, which may be designated fore and mizen masts. The *Great Western*, from her uncommon length, has necessarily four masts.

The foregoing is from the Shipping Gazette, to which we are enabled to add the following daily distances, run from noon to noon, according to tracks of the two vessels laid down on a chart.

SIRIUS, OUTWARDS.		SIRIUS, HOMEWARDS.	
<i>Left Cork 4th April, 10 A.M.</i>		<i>Left New York 1st May, 1 P.M.</i>	
5th had run 135m.	15th had run 205m.	2nd had run 153m.	11th had run 220m.
6th ——— 106	16th ——— 195	3rd ——— 182	12th ——— 183
7th ——— 140	17th ——— 112	4th ——— 90	13th ——— 170
8th ——— 85	18th ——— 126	5th ——— 80	14th ——— 173
9th ——— 136	19th ——— 145	6th ——— 106	15th ——— 181
10th ——— 95	20th ——— 180	7th ——— 131	16th ——— 182
11th ——— 165	21st ——— 195	8th ——— 135	17th ——— 200
12th ——— 190	22nd ——— 195	9th ——— 180	18th ——— 220
13th ——— 220	9 P.M. arrived off New York, after running 72 miles more.	10th ——— 205	19th, ran 203 miles from noon, to Scilly, and arrived at Falmouth, at 6 P.M.

Whole distance run, 2,897 miles in 18 days, from Cork to New York; average per day 161 miles; average per hour, 7 miles nearly.

GREAT WESTERN OUTWARDS.

Left Bristol, 8th April.

9th had run 205m.	17th had run 130m.
10th ——— 187	18th ——— 156 ...
11th ——— 201	19th ——— 192 ...
12th ——— 231	20th ——— 220 ...
13th ——— 227	21st ——— 165 ...
14th ——— 225	22nd ——— 230 ...
15th ——— 247	23rd ——— 210 ...
16th ——— 242	arrived

Whole distance run, 3,125 miles; in 15 days from Bristol to New York. Av. 208 per day, 8.2 per hour.

Whole distance run, 2,996 miles from New York to Falmouth; average per day, 167 miles nearly; per hour, 7 miles.

GREAT WESTERN, HOMEWARDS.

Left New York 7th May.

8th had run 123m.	15th had run 215m.
9th ——— 165	16th 225
10th ——— 253	17th 245
11th ——— 225	18th 242
12th ——— 192	19th 220
13th ——— 250	20th 235
14th ——— 200	21st 205
	22nd 200
	Arrived.

Whole distance run, 2,192 miles in 15 days from New York to Bristol. Average, 213 per day; nine nearly per hour.

The whole distance between Bristol and New York, on the arc of a great circle, is 2,910 miles.

By the log of the Sirius it appears that she experienced for several days violent contrary gales soon after her departure from Cork, and previous to her arrival at, and after her departure from, New York.

Law Proceedings.

THE THOMAS MOULDEN.—*Salvage.*—An appeal from award of salvage commissioners of Cinque Ports. Brig from Odessa to London took pilot off Dover; next day, bad weather brig anchored; to avoid lee shore, master and pilot determined on running for Margate; Queen, a lugger, of Dover, tendered assistance; refused, and afterwards accepted; brig taken into Margate by two of Queen's men; salvage, commissioners awarded compensation of 340*l.*; appeal against this; value of vessel 12,690*l.*; contended for salvors that service was meritorious, and should not be disturbed; answered—reward was excessive, service was exaggerated, commissioners had acted under wrong impression. Sir John Nichol considered that circumstances of vessel had established case of salvage; he would not disturb the award of the commissioners, although it might be a little over or under, unless substantial grounds were proved. The appeal was pronounced against, and the case remitted with costs. ---*Admiralty Court, 15th June.*

THE HOWARD.—*Salvage.*—An American ship, 398 tons, with cotton, tobacco, and freight, valued at 14,140*l.*, from New Orleans to Liverpool, struck on Hoyle Sand, on 13th February, off Mersey; had a pilot; master left her on shore for assistance; crew prepared raft for their safety; some left in two of her boats; vessel got off bank water-logged; George the Fourth steamer, valued at 13,000*l.*, went to her assistance; unable to tow her; was lashed to Howard, and carried her into safety near Liverpool Docks. No tender of reward made; contended that salvage was of highest nature;

much danger of life and property, and service deserved a good reward. Answered--- that the service was exaggerated; easy for steamers; and only eight hours employed it; owners contented to abide by court's decision. Sir John Nichol considered the case one of great merit, and taking time to consider, awarded 2,000*l.*, one half to owners, the other half to officers and crew of *George the Fourth*, directing that one fourth (250*l.*) of the latter be given to the captain, the remainder among her crew as they might be entitled to share.

THE ISABELLA.—*Salvage.*—Claimed remuneration for salvage service rendered by the steam-vessel, *Duchess of Kent*, in November, to the *Isabella*, on voyage from London to Bombay. *Isabella* much damaged in a squall off Dungeness; towed safely into Downs by the steamer; value of ship 21,000*l.*; tender of 400*l.* refused. Sir John Nichol abided by the decision of two Trinity Masters, that it was not a case of salvage but towage, but that the steamer should be well rewarded. 600*l.* awarded.—*Admiralty Court, 2nd March.*

THE PROVIDENCE.—*Salvage.*—Providence, from Middleburgh to London, cargo coals, run foul of, by brig *Jesamine* of Newcastle, in night of 20th of March, causing serious damage. Brig took her in tow and cast her off in morning, leaving her. Towed into Hull afterwards by Lee steamer, who found her at anchor with mainmast gone, and signal of distress flying. Value of ship 800*l.*; no tender made. Stated, that Providence was leaky and disabled. the master alarmed, and if bad weather ensued must have been lost. Answered—vessel not leaky, and master not alarmed, and Hull was steamer's port of destination. Sir John Nichol considered there had been no special merit on part of steamer, and that it was hardly a case of salvage, but it was good policy to encourage steamers to render assistance; it appeared to him that the Hull people were determined to get what they could out of the vessel, and he thought 50*l.* without costs, or 20*l.* with the costs sufficient; preferred giving gratuity of 50*l.* with no costs. Any pilotage paid by Lee should be allowed.—*Admiralty Court, 18th June.*

THE CARRON.—*Salvage.*—On 17th March, in the afternoon, Carron, value 1,548*l.* got on a shoal off Lowestoffe; S.W. gale; two yawls went off to assist, and employed in carrying out an anchor; one was disabled in the attempt, the other took out kedge, and in meantime vessel got off with loss of rudder and steered into Yarmouth Roads. Sir John Nichol awarded 150*l.* with costs, being a tenth, for the service rendered.—*Admiralty Court, 18th June.*

THE VELOCIFEDE.—*Salvage.*—An appeal from award of salvage commissioners of the Cinque Ports. Vessel, value 2,960*l.*, got on Goodwin Sands on her voyage from Dundalk to London on 9th Feb. Assistance offered by Deal boats refused, and afterwards accepted; vessel recovered, with cargo, and taken to Ramsgate; 84 persons engaged in the service, tender made in court of 300*l.*; Sir John Nichol saw no reason for disturbing the award of the commissioners, and pronounced against the appeal.—*Admiralty Court, 18th June.*

BELGRAVE.—*Salvage.*—Claimed by various parties from brig *Belgrave*, (Williams) from Laguna to Liverpool; drove from anchors in Crookhaven nearly on shore in January last; claims amounted to 672*l.*; sum awarded 145*l.* Much surprise occasioned by claim of W. Porter, master of brig *Trusty*, of Belfast, amounting to 200*l.* for loan of kedge anchor for which he had stated he did not seek "one penny." Awarded 50*l.*; appeal made against it.

MELBY.—*Salvage.*—Claim of 80*l.* by master and crew of a fishing-boat. On 2nd February, Melby from Brazil to Liverpool, beating out of Crookhaven, missed stays and would have been wrecked but for the assistance of Captain Carter and his men, who boarded and saved her. Claim of fishermen resisted by commander of the Melby. Awarded by the magistrate, fifteen shillings each, who recorded in their adjudication, that the saving of the brig Melby is to be attributed to the assistance and advice of Captain Carter, of her Majesty's revenue cutter *Chance*. The vessel and cargo were valued at 1,400*l.*

Records of Wrecks.

VICTORIA, No. 210.—Left Newport for Newcastle about 12th Feb.—off Land's-end on 14th inst. bad weather—8 P.M., water over cabin deck, obliged to keep before it—struck on Crow bar—no blame attached to captain.

MIDAS, No. 82.—Running from Odessa for Bosphorus—weather very bad—28th December, made land about C. Kalacri—hove to—brigantine Hope in company—weather still bad on 29th and 30th, vessel hove to—parted from Hope. About noon land seen bearing S.W., supposed entrance of Bosphorus—sail made for it—weather thickened—suspicions of mistake—vessel brought to on larboard tack—gale increased—land lost sight of and night came on—sail shortened—mistake discovered—crew informed of situation of ship on lee shore on which she would drift before daylight. At midnight high land seen on lee beam, in five minutes after vessel struck—sea commenced breaching over her, carried away sails, &c. Attempts to land from mainmast which heeled over the rocks—captain first drowned, rest of the crew escaped by it, and the foremast and ship broke up—weather very severe—at daylight proceeded to Hare—great kindness and attention shown to them by the Turks, who forwarded them to Constantinople free of expense.

TRIO, No. 100, of Sunderland.—Experienced heavy gales in Black sea on her way to Odessa in ballast—compelled to bear up for Bosphorus, and driven on shore near Podamo—crew saved.

LYRA, No. 72, of Kincardine.—27th Decmber left Bosphorus for Odessa in ballast with Trio and Rother. Severe weather with snow—made Cape Fontane—bore up for Bosphorus, lost sight of Trio—next morning struck on a reef off Anada Bay—beat over it with loss of rudder—masts cut away—vessel drove ashore and bilged—sea breaching over her—a warp got on shore and secured to trees by which crew were safely landed and reached Anada. Experienced greatest kindness and attention from the Turks, and offers to be taken gratis to Constantinople—eventually conveyed there by the Nicholas, Russian steamer.

INDUSTRY, No. 175.—Embayed in Castletown-bay, and driven on a reef of rocks off Langness Point, sea running furiously high. At daylight life-boat put off to rescue the crew, two only of which, out of seven, were saved—survivors kindly treated at the house of Mr. Dinwoody; and great credit due to Mr. Brine, junior, and crew of life-boat for the perilous undertaking.

EDGAR, No. 156.—Struck on the Binks about 2 A.M.—crew landed with boat.

LIBERTY.—No. 186, in company with Edgar, brought up and rode safely till 10 P.M.—began to beat heavily and filled—crew took to boat and bore away for the

PROVIDENCE, No. 196, at anchor near Lee, found her making water—crew took to boat and both made for Newsand floating-light—heavy sea running—cries from Providence's boat—attempts to assist crew by Liberty's boat—night dark—could see them no more. After five hours' exposure and suffering gained the light-vessel with loss of everything they possessed—captain and crew kind to the sufferers. Crew of Liberty eventually saved.

FRIENDS, No. 165.—Ran ashore in a severe snow storm—general cargo—landed safely and placed in charge of coastguard.

OAK, No. 194, of Poole.—Attempting to take Shields harbour in heavy gale at S.E.—struck on rocks off Spanish battery—lost rudder—unmanageable—drifted—sea rising—night coming on—crew heard calling for assistance. A rocket thrown over and communication with shore effected—delay occasioned by ignorance of crew in managing it—bottom of vessel broken in—master and one of crew landed by rope; rest walked on shore as soon as tide left vessel.

TOWNSEND, No. 92, brig 231 tons, of Galway.—Driven on shore between Aberdeen and Neath, in a furious westerly gale and tremendous sea—crew safely landed and every assistance afforded by inhabitants of Aberdeen to protect lives and property.

CANTON, No. 51, brig of Whitby, with deal.—struck on Brier island. Gig, with captain, boatswain, carpenter, and two seamen left to land on the island—not heard of since—mate, three seamen, and two boys landed with jollyboat at harbour Maison—stern of gig afterwards picked up—supposed upset and all in her perished.

HOPE, No. 66, of Arbroath, laden with flax-seed and hemp. Plundered by some boats from Runo and Oesel.

MARY, No. 189.—Between Western Islands and Cape Clear, sprung a leak and foundered—master and thirteen of crew picked up by the John, of Cork, and landed at Cove.

JAMES, No. 177.—Run down off Beachy Head by a large brig and sunk, leaving crew time only to take to their boat.

DOUGLAS, No. 153.—Struck on Develine island, Blacksod-bay—drifted off and sunk six miles out at sea with no one on board.

CHARLES POTTS, No. 112.—Brig drifted out of Lyme Harbour, and in spite of letting go anchors, was driven on shore near it. Lieutenant Stocker, of the coast-guard, distinguished himself by his exertions to save her.

CERES, No. 149.—Brig wrecked off Schooghall near Dunbar—nree of the bodies of the crew cast on shore.

DUNBARTON CASTLE, No. 154.—Struck by a sea in 35° N. and 49° W., dismasted and filled with water on her voyage home from Trinidad, laden with cocoa—fell in with Pericles, and in transporting her crew lost four boats—foundered soon after—crew landed at Cork.

ANN, No. 143.—Brig 240 tons—supposed to have been driven on Fern islands by violent gales.

JOHN and ELIZA, No. 182.—Lost on Cable island in a furious gale from E.S.E. with snow—vessel lying by for two hours before she was dashed on the rocks.

PARAGON, No. 129, of Maryport.—Sailed for Brazil, 13th February—sails and spars carried away gradually, and a few days after vessel struck on Ballynecker bank, but next morning drifted off bank to the shore—sea raging high—crew lashed to the capstan—yawl launched and with seven hands made for the shore—capsized immediately, and a son of Dr. Wallace, of Dumfries, only saved by clinging to an oar and cast ashore much exhausted. Captain and remaining five of crew remained on board, and at low water were delivered from the wreck by coastguard people and fishermen.

BRUNSWICK, No. 147.—Her jollyboat picked up off Wivenhoe—wreck of vessel seen on the Gunfleet—crew supposed saved.

WANSBECK, No. 213.—Seven bodies of the crew found near Bideford, and properly interred—vessel came on shore during night and—daylight discovered pieces of her wreck strewn about the shore.

BRITON, No. 50, whaler, of London.—Crew remained on Christmas island, in 2° N. 157° ½ W. seven months—attempted to reach Sandwich islands in April—obliged to return—finally taken off by ship, Charles Frederick, of New Bedford, and landed at the Sandwich islands.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Lieutenants, B. Fox; J. C. Clifford; J. B. E. Frere; P. Pipon; L. Hawker; C. Y. Campbell; H. B. Davis. *ANDROMACHE*, 28.—*Mate*, T. Tickell. *BELLEROPHON*, 80.—*Master*, W. C. Middlemist; *Chaplain*, P. Somerville; *Mate*, J. C. Harrison; J. E. Bridges. *BONETTA, Schooner*.—*Ass.-Sur.*, C. D. Steel. *BRITANNIA*, 120.—*Ass.-Sur.*, J. Reid; R. Barnard; G. T. M. Martin. *CARRON, Steamer, Lieut. Com.*, J. B. Cragg. *COAST-GUARD*.—*Lieut.* W. T. Bellairs; W. G. Hensworth. *CORNWALLIS*, 74.—*Second Master*, A. Davis; *Assistant Surgeons*, W. Roberts; G. St. G. Bowen. *CROCODILE*, 28.—*Master Assistant*, A. Mallard. *CRUIZER*, 18.—*Mates*, R. L. Byron; C. B. Bayley. *CURLEW*, 18.—*Assist-Surg.*, W. Bateman. *EXCELLENT*.—*Mate*, G. Hamilton. *FORRESTER*, 16.—*Lieutenant Commander*, C. Y. Campbell. *HARPY*, 10.—*Lieutenant Com.* G. Ellman; *Second Master Assist.*, J. Fox. *HARPY*.—*Rev. Cut. Liev. Commander*, G. Drew. *LARINE*, 20.—*Mate*, W. Coles. *MADAGASCAR*, 26.—*Lieutenant*, E. Peirse; *Mate*, M. Bouchier. *MEDEA, Steamer*.—*Mate*, F. K. Fortescue. *MELVILLE*.—*Assist.-Surgeon*, J. T. Melville; *Vol.*, A. Percy. *MODESTE*.—*Mid.*, C. F. Dent. *PHŒNIX*, St. V.—*Mate*, E. H. Power. *PLYMOUTH HOSPITAL, Assistant-Surgeon*, J. Crocket. *PORTSMOUTH DOCKYARD*.—*Surgeon*, P. Luther. *PYLADES*, 18.—*Assistant-Surgeon*, H. G. Harrison.—*RANGER*, 16.—*Lieut.* J. H. Turner. *RAINBOW*.—*Lieutenant*, H. St. Georges. *RODNEY*.—*Captain-Assistant*, E. H. Scott; *Com.*, W. Shepherd. *ROYAL ADELAIDE, Yacht*.—*Assistant-Surgeon*, C. Easton; W. Crofton; T. Crawford. *ROYAL GEORGE, Yacht*.—*Mate*, Han. C. B. G. Elliot. *SERPENT*, 16.—*Lieut.*, L. Hawker. *ST. HELENA*.—*Health Officer*, J. Armstrong. *THALIA*.—*Assistant-Surgeon*, R. G. Walker. *TRINCULO*.—*Lieutenant*, J. A. Abbott. *VOLCANO, Steamer*.—*Lieutenant-Commander*, J. West. *WELLESBY*, Hon. M. Kerr. *WEAZLE*.—*Lieutenant*, W. M'Ilwaine; *Sec. Master*, G. Hardie; *Assistant Surgeon*, J. Read; *Clerk*, J. Bell. *WIZARD*, 10.—*Lieutenant Commander*, T. F. Birch.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ACTÆON, Captain, Right Honourable Lord E. Russell, paid off middle of April. *ANDROMACHE*, 28, Com., at Sheerness, by Captain Baynes; sailed 9th May, with troops for Canada. *BELLEROPHON*, 80, Captain C. J. Austen, 14th May arrived at Plymouth; 18th, sailed for Malta. *BUZZARD*, 3, Licutenant Stoll, 24th April arr.

at Plymouth from Africa; 11th May, paid off at Plymouth. **CHARYBDIS**, 3, Lieut. Hon. R. Gore, 26th April, sailed with Hastings for Quebec. **CHILDERS**, 16, Hon. Captain Keppel, arrived 19th May, at Portsmouth, from Africa. **CRUIZER**, 16, Com. King, 28th April arrived at Portsmouth; 15th May, sailed for East Indies, **DEE St. V.**, 26th April, sailed with Hastings for Quebec. **DUBLIN**, 50, 17th May, arrived at Portsmouth from R. Janeiro. **FAIRY**, 10, St. V., Captain Hewett, 2nd April, arrived at Harwich from Woolwich, surveying the North sea. **HASTINGS**, 74, Captain H. Shiffner, sailed with Lord Durham for Quebec. **HERCULES**, 74, Capt. T. T. Nicholas, C.B., 5th May, sailed with troops for Canada. **JUPITER**, 38, Mr. R. Easto, 15th May, sailed from Plymouth for Falmouth. **LIGHTNING**, St. V., Lieutenant-Com. J. Shambler, 14th May, arrived at Plymouth and sailed for Dublin. **LILY**, 16, Com. J. Reeve, 2nd May, sailed for Brazil with Hon. Gore Ousley. **LYRA**, 6, Lieutenant Forrest, 15th May, sailed from Plymouth for Falmouth. **MADAGASCAR**, 46, Captain Wallis, 4th May, sailed for Quebec. **MALABAR**, 74, Captain Sir W. Montague, 20th April, sailed for Quebec. **MINDEN**, 74, Captain A. R. Sharpe, C.B., 14th May, arrived at Plymouth from Gibraltar. **NAUTILUS**, 10, Lieutenant G. Beaufoy, 22nd April, left Plymouth for Africa. **PORTLAND**, 52, Flag of Rear-Admiral Briggs, 23rd April, arrived at Portsmouth; 26th, sailed for Plymouth; 11th May, paid off. **RANGER**, recommissioned by J. H. Turner, 17th May, at Plymouth. **RUSSELL**, 74, 30th April, arrived at Plymouth from Malta; 15th May, sailed for Lisbon. **TARTARUS**, St. V., Lieutenant Smith, 21st April sailed for Jamaica. **THALIA**, 46, Rear-Admiral Sir P. Campbell, 19th May, arrived at Portsmouth. **VESTAL**, 26, 27th March, arrived at Halifax; 17th April, at Bermuda. **VOLAGE**, 28, 3rd April, arrived at Madeira; 7th, sailed for Bombay. **WEAZLE**, 10, Lieutenant Mc. Ilwaine, 28th April, commissioned at Plymouth. **WANDERER**, 16, Com. T. Bushby, 10th March, at Jamaica. **WIZARD**, 10, Lieut-Com. G. L. Harvey, 4th February, at Pernambuco.

Remain, at Portsmouth, in *Harbour*, Britannia, Victory, Royal George, Excellent, Rainbow, Dublin, Childers, Pantaloon, Termagant, Arrow, Columbia. *At Spithead*, Thalia, Modeste.

ABROAD.

ALBAN, St. V., Lieutenant Tinling, 22nd March, at Jamaica; 24th, sailed for St. Thomas. **ALLIGATOR**, 28, 20th March, sailed for Australia. **BARHAM**, 50, Captain A. L. Corry, 13th April, sailed from Malta for Athens; 23rd, returned to Malta. **BEACON**, St. V., 8th April, sailed from Malta. **BRISK**, 3, Lieutenant A. Kellett, 20th March, arrived at Teneriffe; sailed for Africa. **BRITOMART**, 10, 20th March, sailed for Australia. **CALLIOPE**, 28, 19th March, left Teneriffe for Rio. **CARRON**, St. V., 1st April, arrived at Jamaica. **CARYSFORT**, 28, Captain H. B. Martin, 21st April, left Malta to rescue Rapid. **CASTOR**, 36, Captain E. Collier, 14th April, Barcelona. **CLIO**, 16, Com. W. Richardson, 26th April, at Gibraltar. **COMUS**, 18, Com. Hon. P. P. Carey, 4th April, sailed for Carthage. **CONFIANCE**, 2, Lieutenant Stopford, 19th April, arrived at Malta. **CORNWALLIS**, 75, Captain Sir R. Grant, 9th February, at Bermuda; 20th March, left Jamaica for Bermuda. **CROCODILE**, 28, Captain J. Polkinghorne, 19th March, left Halifax. **FAIR ROSAMOND**, Lieutenant-Com., 4th April, at Ascension. **FAVORITE**, 18, 19th January, arrived at Cape; returned 2nd Feb. **FIREFLY**, St. V., Lieutenant J. Pearse, 10th January, at Malta. **GRIFFON**, 3, 6th April, arrived at New York from Dominica, with specie. **HARLEQUIN**, 16, Com. J. E. Erskine, 24th November, at Barcelona. **HERCULES**, 74, 4th April, left Halifax; 27th March, arrived. **HORNET**, 6, 22nd March, at Jamaica. **HYACINTH**, 18, 20th February, Simon's Bay; sailed 2nd March for East Indies. **LEVERET**, 10, Lieut-Com. C. J. Bosanquet, 11th February, Mozambique. **MAGICIENNE**, 24, Captain Mildmay, 21st April, left Lisbon. **MAGPIE**, 4, St. V., 18th April, sailed from Malta. **MEGERA**, St. V., Lieutenant Goldsmith, 21st April, arrived at Malta. **MELVILLE**, 74, 7th March, arrived at Simon's Bay; 13th March, S. Bay. **NIMROD**, 20, Com. J. Fraser, 22nd March, at Jamaica. **PIQUE**, 36, Captain E. Boxer, 1st April, sailed for St. John's with troops, arrived 6th; sailed for Halifax, 7th. **PRESIDENT**, 52, Flag of Rear-Admiral Ross, 1st March, at Teneriffe; 17th February, arrived at Rio; sailed for Pacific. **PYLADES**, 18, Com. W. L. Castle, 20th February, at St. Helena. **RACEHORSE**, 18, Com. W. H. Crawford, 18th March, arrived at Barbados and sailed for Jamaica; 17th April, at Bermuda. **RAINBOW**, Captain T. Bennet, 16th March, left Jamaica for England. **RAPID**, 10, reported run on shore, 14th April, near Tunis. **RAVEN**, 4, Lieutenant G. Bedford, 4th April at Ascension. **REINDEER**, 6, 16th March, Rio Janeiro. **RHADAMANTHUS**, St. V., Com. A. Wakefield, 20th April, arrived at Malta. **SAMARANG**, 28, Captain W. Broughton, 22nd March, at Bahia. **SATEL**

LITE, 18, Com. J. Robb, 20th March, left Jamaica for Barbados. SERINGAPATAM, 46, Captain F. Leith, Port Royal, Jamaica. SKIPJACK, 5, Lieutenant J. Robinson, 17th April, at Bermuda. SNAKE, 16, Com. A. Milne, 22nd March, sailed for Jamaica; 4th April, for St. Jago de Cuba. SPARROW, 10, 19th February, at Rio. SPAKROWHAWK, 16, Com. J. Shepherd, 22nd March, at Bahia.

Births.

At Hillfield, Hants, the lady of Capt. H. B. Mason, R.N., of a son.

At Norfolk-place, Southsea, on the 29th April, the lady of Lieutenant James Stone, R.N., of a son.

In Brougham-street, on the 7th May, the lady of Mr. John Jackson, Master of H.M.S. Alligator, of a son.

At Stoke, on the 18th May, the lady of Lieutenant Thurtell, R.N., of a daughter.

At Oxford, on the 3rd May, the lady of Captain Robins, R.N., of a son.

Marriages.

On the 2nd of April, at Quebec, Capt. Henry Wolsey Bayfield, R.N., to Fanny, only daughter of Captain C. Wright, of the Royal Engineers.

At Minestead, Catherine, daughter of H. C. Compton, Esq., M.P., to Captain Aitchison, R.N., of Rushington, Hants.

At Christ-church, Marylebone, on the 26th inst., by the Rev. C. Eyres, Commander Harry Eyres, of H.M.S. Modeste, to Ellen Jane, daughter of the late William Parker, Esq., of Dorset-square, London.

At Egremont, on the 18th inst., Cumberland, William Oxley, Esq., of Liverpool, to Anna Margaret, daughter of Captain John Ponsonby, R.N., of Springfield, near Whitehaven.

At Winterbourne Came, on the 26th ult., W. B. Scott, Esq., son of Captain Scott, R.N., of Chudleigh, to Mary Catherine, eldest daughter of James Bower, Esq., of Weymouth.

At Titchfield, on the 3rd inst., Captain James A. Murray, R.N., son of the late Lord W. Murray, to Julia, daughter of the late J. Delme, Esq., of Cams-hall, Fareham, Hants.

At St. George's church, Hanover-square, on the 17th inst., Lieutenant S. G. Pullen, R.N., to Isabella Jane, second daughter of Henry Duncan, Esq., M.D., of Park-street, Grosvenor-square, London.

On the 29th ult. John William, son of Admiral Sir William Hotham, K.C.B., to Sarah, eldest daughter of W. Hawkesley, Esq., Circus, Bath.

Deaths.

On 20th May, in Somerset-street, London, Capt Sir John Strutt Peyton, R.N., K.C.H., late Commodore on the Jamaica station.

At Bishops Teignton, Devon., Rear-Admiral Quinton, on the retired list.

On board the Thalia, on the 8th April, Mr. R. Pitcairn, Midshipman of that ship.

Of Consumption, at the Cape of Good Hope, on the 26th February, in the 28th year of his age, Commander Barrow, late of her Majesty's ship Rose, son of Sir John Barrow, of the Admiralty. The disease was brought on by constant exposure to the hot and humid atmosphere of the Straits of Malacca, while in pursuit of Malay pirates.

At Sutton, near Ipswich, Rear-Admiral W. H. Daniel, aged 75.

In Belgrave-square, on the 23rd April, aged 33, Jane, the wife of Francis Thornhill Baring, Esq., youngest daughter of the late Vice-Admiral Hon. Sir George Grey, Bart.

At Plymouth, Elizabeth, widow of Captain Thomas Norman, who was mortally wounded on board the Mars, in the battle of Trafalgar.

At Winchmore-hill, on the 14th May, aged 86, John Heath, Esq., surgeon of the royal navy.

At Exeter, Lieutenant James Foster, R.N., aged 41; he lost an arm at Algiers, under Lord Exmouth, and had a pension of 200*l.* a-year.

At West Looe, on the 19th May, Parkins Prynne, Esq., late Commander, R.N.

At Hythe, on the 3rd May, Rowland Cotgrave, only son of Lieutenant R. B. Cotgrave, R.N., aged four years and four months.

May 5, in Little Trinity-lane, London, aged 64, Elizabeth, relict of the late Captain G. C. Pulling, R.N., of St. Arvan's, in the county of Monmouth.

At Greenock, Lieut Duncan Blair, R.N.

On his passage from Jamaica to England, on board the Maitland, Lieutenant James Barber, (1816.) R.N., agent in charge for that ship.

At Paris, Captain Lewis Shepherd, R.N., aged 65.

At Clifton, near York, Lieutenant T. Robinson, R.N.

At Sherbourne, Sarah, daughter of the late Captain Wells, R.N.

At Stoke, Plymouth, Mrs. Boardman, wife of Lieutenant R. Boardman, R.N., aged 42.

At Rome, aged 13, Louisa, daughter of the late Hon. A. Cochrane, Capt., R.N.

May 4, Captain Henry Templar, late of the East India Company's naval service, aged 53.

At Ascension, on the 8th February, Lieutenant H. P. Deschamps, commanding H.M.B. Bonetta, aged 35.

On the East India station, October 9, 1837, in the prime of life and promise, Mr. Hyman, midshipman on board her Majesty's ship Wolf, Captain Stanley, and son-in law of B. R. Haydon, historical painter.

Lieutenant Hon. Graham H. Kinnaid, commanding H.M.S. Rapid.

METEOROLOGICAL REGISTER,

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

APRIL, 1838.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	S.	29.63	29.58	38	48	34	48	W.	W.	1	2	O	Bc.
22	Su.	29.22	29.28	42	46	33	47	S.	S.E.	4	2	Or. (2)	O.
23	M.	29.36	29.32	50	55	40	56	S.W.	S.	1	2	Bcm.	Od. 4)
24	Tu.	29.45	29.54	48	54	36	55	E.	E.	3	3	Od. (2)	Bc.
25	W.	29.73	29.76	48	45	35	51	N.	N.	4	5	O.	Qog.
26	Th.	29.85	29.86	45	46	42	48	N.	N.	6	7	Qog.	Qogr 3)
27	F.	29.90	29.87	43	45	35	47	N.E.	N.	7	7	Qo.	Qo.
28	S.	29.81	29.77	42	46	33	47	N.	N.	7	7	Qbc.	Qbcd. 4)
29	Su.	29.66	29.68	41	44	34	46	N.	N.W.	6	4	Bc.	Beps. 3)
30	M.	29.53	29.51	45	52	36	54	S.W.	S.W.	4	4	O.	Or. 4)

APRIL—Mean height of the Barometer = 29.773 inches; Mean Temperature = 4.31 degrees; Depth of Rain fallen = 0.55 inches.

MAY, 1838.

1	Tu.	29.62	29.60	48	54	44	55	S.	S.	3	4	Or. (2)	Op. (3)
2	W.	29.83	29.83	61	68	48	69	S.W.	S.	4	4	Bc.	Bcl.
3	Th.	29.86	29.93	60	64	49	65	S.	S.W.	4	4	Bc.	Bc.
4	F.	30.00	29.96	59	67	43	67	E.	E.	3	3	O.	Bc.
5	S.	30.13	30.14	58	60	46	64	N.	N.	5	5	Bc.	Qbcd. (3)
6	Su.	30.30	30.27	48	62	45	62	N.E.	N.	4	3	O.	B.
7	M.	30.31	30.31	55	71	39	74	N.	N.	2	2	B.	B.
8	Tu.	30.32	30.33	62	72	46	73	N.	N.	3	4	B.	B.
9	W.	30.18	30.16	60	70	43	71	N.E.	N.	2	2	B.	Bc.
10	Th.	30.33	30.39	50	54	42	56	N.E.	E.	5	6	Bc.	B.
11	F.	30.37	30.34	49	56	34	57	E.	N.E.	2	2	B.	B.
12	S.	30.12	30.06	48	62	33	63	N.E.	N.E.	2	2	B.	Bcm.
13	Su.	29.69	29.63	47	56	42	57	N.W.	N.W.	3	3	O.	Bephr 3)
14	M.	29.63	29.63	45	49	25	50	N.W.	N.	4	4	Bc.	Bc.
15	Tu.	29.73	29.72	46	52	30	52	N.E.	N.E.	3	4	B.	Bc.
16	W.	29.82	29.82	45	53	29	53	N.E.	E.	2	2	B.	Bcm.
17	Th.	29.80	29.80	49	54	33	55	N.E.	N.E.	3	4	Bcm.	Bc.
18	F.	29.84	29.90	49	55	36	56	N.	N.	4	4	B.	Bc.
19	S.	29.92	29.82	54	58	34	60	S.E.	S.E.	3	5	Bcm.	Qor.
20	Su.	29.60	29.54	53	55	50	56	S.E.	S.	4	4	O.	Or. (3)

NOTE.—On the mornings of the 11th and 12th, and also of the 14th, 15th, 16th, 17th, 18th, and 19th of May, we had hoar frosts; on the mornings of the 15th and 16th, the frost was particularly severe!

ORIGINAL PAPERS.

JULY, 1838.

PASSAGES OF HER MAJESTY'S SHIP CORNWALLIS, CAPT. SIR RICHARD GRANT, BETWEEN NORTH AMERICA, AND THE WEST INDIA ISLANDS, IN THE WINTER OF 1837.

BERMUDA may be considered as the head-quarters of the Naval Commander-in-Chief on the North American station. Hence it becomes a centre from which we all start.

The winter, or cold season, at Bermuda, is the most agreeable, and lasts from November to March; the mean temperature being 60° ; the predominant winds are then from the westward; if to the northward of this, fine hard weather, with a clear sky, accompanies them. This is the favourable time for refitting ship, painting, &c. Thermometer, 50° to 56° . The close of this is often a bright very fine day, with little wind, and partial calms, when the wind is certain of going round to the S.W.; the weather becoming hazy, damp, subject to heavy rains and gales. The thermometer immediately attains 66° to 70° . These alternate northwesterly and southwesterly winds prevail through nine months of the year; the wind remaining at no other point for any length of time. This change is exhibited by a difference of 14° in the temperature. At this season it seems advisable for ships bound to the southward to wait and take the first set-in of the north-westerly winds. In most cases it will insure a quick run to the variables, and often to the trades.

From Bermuda to Barbados, instead of steering direct, I would recommend a S.E. by S. course. The advantage of this will be apparent, should the trade-wind be to the southward of east, and it is also a precaution against a leewardly current. We left Bermuda on the 26th November, 1837, and pursuing the above course until fairly in the trade, anchored at Barbados on the 6th December. Made the north end of the island at four A.M. at daylight, appearing in a long, very low point. While on the starboard bow, Kitridge Point made equally so, with extensive breakers far out. We rounded the island at a distance of two miles; the coast presenting successive low points, encompassed with breakers.

Barbados is about the size and height of the Isle of Wight; pretty in appearance, and richly cultivated. Viewing the N.E. part of Barbados, its extraordinary resemblance to that part of the Isle of Wight

from St. Catherine's Point towards Dunnose, with the ridge of hill and undercliff, is particularly striking. The signal station on Highgate, the military cantonments, Needham's Point, mast-heads of shipping, the coast line edged with the palm and numerous plantations; altogether, the view is very pleasing as you advance from Distin's Point.

A black beacon buoy, placed on the shoal running out from Needham's point, is of great advantage on approaching the anchorage; it is in $5\frac{1}{2}$ fathoms, with the two flag-staffs on the point in one. St. Mary's church bearing N.N.E.

Ships nearing the buoy will observe to keep it in a line with Pelican Island, and pass it as near as they please, hauling up N.N.E. until the water deepens to ten fathoms, or when the signal post on the hill comes open off the Ordnance Wharf, when the shoal will be cleared.

The Cornwallis's anchorage was in eighteen fathoms with Needham's Point flag-staff, S. 50° E.; Highgate's N. 80° E.; and Pelican Point on with the north point of the bay N.N.W. One meridian altitude of the sun gave latitude of anchorage $13^{\circ} 5' 50''$ N.; and chronometers, as rated at Bermuda, longitude $59^{\circ} 39' 42''$ W.

7th Dec. Having embarked one wing of 65th regiment, and another of 76th, we sailed for Grenada, at 9h. 30m. P.M.

8th. 10 A.M. Made the Grenadine Islands. They are numerous, and occupy nearly the whole space between Grenada and St. Vincents. The largest and most remarkable, as appearing to us, were Cariaco, Bequia, and Cannoun—Cariaco the largest. At noon made Grenada, its lofty summit becoming visible as the heavy clouds rolled away to the westward. The extreme points to the north and S.E. made very low; and at a short distance small hills, mountains, various shaped peaks, deep ravines, scattered plantations, and the most beautiful display of light and shade, of the most brilliant green; dark forest, and bright tints, all these formed the most magnificent mountain scenery. We ran down skirting the eastern coast; rounded the S.E. point, and stood along the south shore, at a distance of about three miles, thus clearing the Grampus Shoal. There was a fine moonlight, with a pleasant trade. At seven, rounded Rameirs Island, giving a berth of one mile to its southern point. Hauled up N.W.; and when at Point Salines, which is the south-west point of Grenada, bore north, steered N.N.W. Kept the lead going: first cast, nine fathoms. Altered course to west and S.W. Had 8, 7, 6, 7, 8, 10, and 13 fathoms. Hauled up to the N.W., and with Point Salines E.N.E. $1\frac{1}{2}$ mile; rounded to and anchored in 15 fathoms, on hard sand. At eight o'clock, a tide set past the ship to the S.S.W., two miles per hour. At midnight the ship tended, and the tide set through to the eastward, at the same rate. At 8 A.M. of following day, it again made to the S.S.W., and by ten its rate was three miles. With this set of tide,

how valuable is Point Salines as a temporary anchorage! The harbour-master informed us that at the springs, the tide obtained a rate of four to five knots; that they were strong among the Grenadines, St. Vincents, and extended to the southward of Grenada towards Trinidad. He was also of opinion that throughout the range of the Caribbean islands, the tides were of more consequence than hitherto considered. It appears probable that many of the accounts which reach us respecting the set of currents in opposite directions, often in the same place, may be the effect of tides. This ought to be particularly interesting to the navigator; and I think may be considered worthy of further investigation. In the Cornwallis, we were not aware of the existence of such a tide, until we brought to; it was fortunate we did so, as the wind during the night fell light, with calms, and we might have been retarded in gaining the proper anchorage. Having waited three hours, until the tide slackened, we worked up to St. George's Roadstead, anchored in nine fathoms, sandy bottom. Fort St. George flag-staff $E\frac{1}{2}$ S.; Point Molinier, N. $\frac{1}{4}$ W.; Point Salines, S.W. by W. Two meridian altitudes of the sun gave the latitude of the anchorage $12^{\circ} 2' 40''$ N., longitude by chronometer, $61^{\circ} 45' 36''$ W.

From Point Salines to this place, the distance is nearly four miles; and direct in the line are two shoals; these are now marked by a red buoy on the north-west part of the Three Fathom Bank, which is the northernmost, and fronts the harbour. A white buoy marks the western part of the southern shoal.

Point Molinier has some trees on it; and its extreme point, either from the northward or southward, makes like a small bushy islet. Goat Point is a woody, dark, and rather low-looking point, which, with Molinier, forms the Bay of St. George's, being three miles and a half apart. The view going in is very beautiful, and has been compared to the splendid scenery in the Bay of Naples. The town, with its two churches, and shipping in front; Fort St. George on a dark-looking hill; the Hospital hill on its left; and over it, on a ridge of another hill, the Government House, the harbour-master's, and others, are seen amid the most luxuriant foliage. Over Fort St. George, at an elevation of 700 feet from the sea, are the military cantonments, situated on Richmond Heights, together with Forts Mathew, Frederic, Lucas, and Adolphus. Over all these, to the right and left, separated by deep ravines and fertile valleys, rise, ridge over ridge, peaks and mountains. Nearer to the spectator is the entrance to the inner harbour; the still, quiet, and deep blue sea dotted with a distant sail, the man-of-war bird sweeping high over head. Such was the view of the S.W. part of Grenada from the Cornwallis's anchorage.

The last landing-place is at the Commissariat Wharf, just inside the Carenage. The roads are mostly of the up and down hill kind; the town being built on the sides of a hill, one part facing the sea, and the other the Carenage. It is a very neatly built place, and is

remarkably clean. It may indeed be said to stand on an isthmus, the peninsula being Fort St. George Hill. The lagoon is a fine piece of water, and the Carenage a most secure and sheltered anchorage.

The deep valley between Hospital Hill, Richmond Heights, and the higher hills to the west, is magnificent; highly cultivated, with a rivulet running nearly its whole length. In such a valley, the rich and bright sugar plantations are seen to great advantage. This place is called the Vale of Tempe; they have also a Mount Parnassus, and other classic names.

The thermometer, during our short stay in the West Indies, ranged from 80° to 84°.

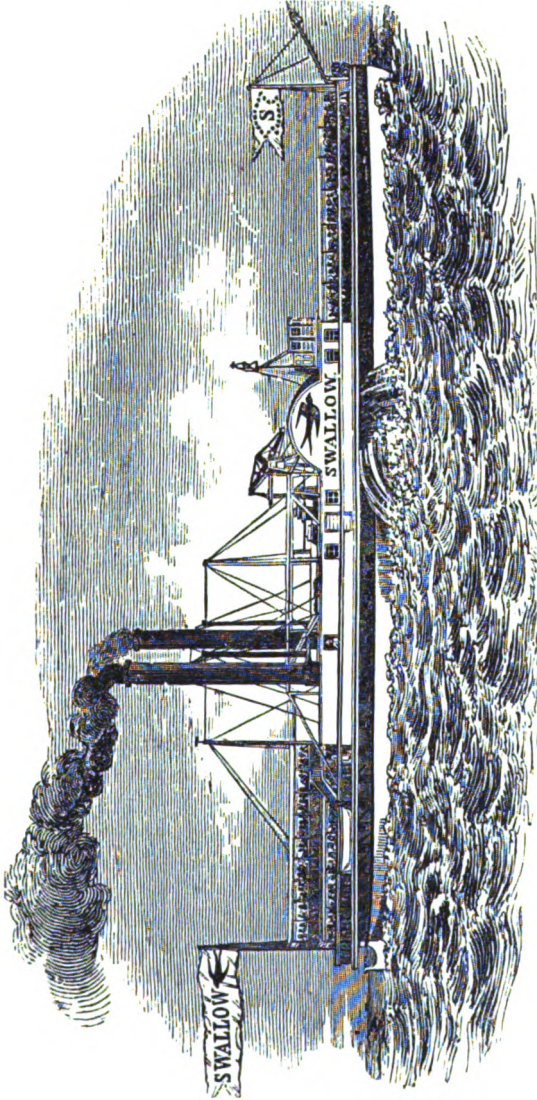
Having disembarked the 76th, and completed the 65th regiment, we sailed for Halifax at sunset of the 11th, having on board four hundred and seventy men and officers, forty women, ninety-two children, &c. &c. &c., nearly a thousand in all.

A fine moonlight evening followed; the ship gliding along the western coast, as we shaped a course for St. Kitts, which I should always recommend to vessels intending to take the Anegada channel. At sunset, Montserrat, Redonda, Nevis, St. Christophers, St. Eustatius, and Saba, were in sight. At ten we passed between St. Eustatius and Saba, closing Saba to within two miles. When its north point bore west three miles, steered N.N.W. for Dog Island and Hat Cay

The Island of St. Eustatius first makes like a single mountain rising out of the sea; on a nearer approach, it is seen to consist of two. Its west end is lowest, and the coast fronted with rugged rocks. Saba is five leagues to the N.W. of St. Eustatius, and appears like a high mountain; it is peaked, and slopes to the westward. The islands to the northward are low, and not to be seen at a greater distance than four to five leagues. At 3h. 30m. in the middle watch, we made the Dog Islands. 6 A.M. Sombrera bore E.N.E.; and at 8 we were fairly clear of the West Indies, and steering away N.W. for Halifax, with the trade-wind at E.N.E. No variation. Thermometer 80°; surface temperature of water, 78°.

From this to the parallel of Bermuda, the temperature of the water changed from 78° to 68°. Here, in 33° north latitude, we exchanged the flying-fish for the stormy petrel.

The northwesterly winds have a great ascendancy at this period, and prevail over any other quarter. I would therefore advise making the most of the trade, and steering away N.N.W., continuing to make as much westing as will insure fetching Halifax with the prevailing wind. From Bermuda to the Gulf Stream, the temperature of the water was 14° higher than the air; this rendered it difficult to determine its southern edge. When in the stream, the water for two days continued 23° warmer than the air. While struggling through this space we had most tempestuous weather, gloomy, wintry, and most



AMERICAN STEAMER.

unpromising ; it gives one a dread of "bleak Nova Scotia's unpromising strand." On Christmas-day it blew a perfect storm, commencing at S.E. and going round by south, S.W., west, and N.W. Its strength is marked in the ship's log No. 11, as it is difficult to conceive the possibility of blowing harder than it did. The wind was too strong to allow the sea to get up, it was lashed into foam and dashed over the ship with irresistible impetuosity. The lee quarter-deck nettings were forced under water ; however, the ship being a good sea boat, weathered the gale pretty well ; the only sail set was a fore storm staysail, sea or swell being on weather quarter. The maintopsail, trysail, and main-staysail were split. On leaving the West Indies we had bent a quite new suit of sails. This ought to warn whoever has to navigate in these seas, and at this season, to be well prepared in all ways, and every way.

27th. We had another gale, in log marked No. 10.

29th. Nothing but gales, gale succeeds gale with all their disagreeables. The wind during our progress through the Gulf Stream veered in circles in a most extraordinary manner. The gale blowing from west to N.N.W., ceased at north ; it then veered to N.E. and east, with fine weather ; blew strong at S.E., south and S.W., and commenced another gale as the wind completed its circle to the northward. Though the heavy seas and swell were from the direction of the gales, yet a considerable sea gets up from any point where the wind makes a stand during its progress round. This causes a confused cross swell, and I think sufficiently accounts for the sea going down so soon after the gale has subsided. The appearance of the weather is in general gloomy, with squalls, and passing showers of rain, most unfavourable for observations. The exact meridian altitude of the sun is seldom attainable, and the stars of little use in gaining a latitude. I found the following rough approximation particularly useful. Very frequently one momentary glimpse of the sun near noon was all we had for two or three days : anticipating this, I used, while fair weather lasted, or opportunities offered, to take the altitude of the sun at intervals of five minutes, measured by a good watch, set to ship time by chronometers ; these observations commenced exactly at seven bells. For several days I worked out one or two ; the half hour interval, the quarter, and so on. After a little practice, I was enabled to apply an increase of altitude, which never differed in latitude more than two miles from that found at noon. This experience became very valuable ; it gave confidence sufficient to allow us to run for the land, and as in the case between noon of 28th and that of 30th, where we were set by the stream S. 37° E. 71', must always prove acceptable.

Northern edge of Gulf Stream. How perfectly and abruptly defined is this line ! In latitude 41° 7', longitude 62° 58', the air was 52°, water 67°. Six hours later we had advanced to the northward

eighteen miles, the air being 45° , and the water 38° . Here was an extraordinary change—in a run of eighteen miles a difference of temperature of 29° ! This was on the 30th. At noon, the air was 44° , water 40° , and at a depth of 250 fathoms, 37° ; proving what a vast volume of water is ever pouring into the Atlantic Ocean. Observed ahead strong rippings and eddy whirls, with great quantities of foam; its direction was N.W. and S.E., extending as far as we could discern; birds, such as are seen on the banks, with other indication of our approach towards soundings. From this to Halifax the temperature of the water was 38° to 35° . Along the shores and harbours of Nova Scôtia and New Brunswick it never varied more than 6° . At St. John's, with the thermometer at zero, the water was 29° ; quantities of loose ice in motion.

January 1st, 1838. Made the land about Margaret's Bay. Lunenburg, with Cross Island light-house, being about ten miles to the westward. The lighthouse is a tall red building, very conspicuous; no light has as yet been exhibited from it. The day was very fine, with a moderate breeze at east; worked along the coast from East Cape to Sambro. Bold shore; stood into fifteen fathoms; a white stony looking coast, rather low, and remarkably sterile. Anchored at Halifax on the following day.

9th January. Having embarked 360 soldiers of the 34th regiment, and upwards of 200 of the 65th, with women, children, horses, &c., we sailed for St. John's, New Brunswick. Fine strong breeze from N.E. to east. At 3h. 30m. P.M. Sambro lighthouse bore north five miles. From this we dated our reckoning to the Brazil Rock, the course being W.S.W. (nothing to the westward) 105 miles; with the wind from the southward, a S.W. b.W. course would be preferable. When clear of this danger, steer W. by N. northerly thirty miles, which clears the Blonde Rock, and sights Seal Island. 10th, at 4 A.M. being twenty miles to the southward of Cape Sable, the wind suddenly shifted to the N.W., with rain and thick weather. Ship tossed about by a cross swell from the direction of the late wind, and from the Bay of Fundy.

Persons acquainted with this coast give the northwesterly wind a duration of three days; and at this season then to shift to north and east four times out of six; it thence veers to S.E., S., and S.W.; when, after blowing mostly hard, from one of these points, it again rounds to West and N.W. giving the northwesterners an excess of one-third.

The east, south-east, and south winds bring snow, sleet, fog, and rain; generally clear up with south-west; northerly winds producing intense cold and hard frost. Very seldom opportunities offer for observation of either sun, moon, or stars; the tides are rapid, with a rise and fall of thirty feet, and coast difficult of navigation. The utmost care and attention becomes necessary with good look-outs; the lead, barome-

ter, and thermometer; anchors and cables clear; instantly ready to shorten sail, tack or wear; the wind frequently shifting in a moment and increasing to a gale in a very short time, sea following almost immediately: add to these the prevalence of thick weather.

These difficulties are certainly very great and should always have their due consideration, yet a competent and careful officer, may navigate the Bay of Fundy with ease and safety. The great advantages are, first, the coast is particularly well lit; in fact, one may almost say studded, with lighthouses. Secondly, on the north and west sides are numerous excellent harbours within a few miles of each other, and mostly easy of access. Lastly, there is plenty of sea-room and good soundings at the entrance of the bay.

The north-west wind lasted three days, blowing strong breezes and moderate gales, ship under close-reefed topsails and reefed courses, taking every advantage of flaws, or the wind veering a point, each day at noon we had Seal Island lighthouse bearing north, eight to ten miles. Just kept our own, with this advantage, that by keeping between Cape Sable and Seal Island, we had smooth water: and it becomes a question of importance whether in the event of a N.W. gale, it is not advisable to keep in this position in preference to encountering the heavy seas that come down the bay, bearing in mind that a shift of wind to the eastward enables you to run through the Bryer's Island passage in a few hours.

Seal Island is very low and bushy, it is not visible at a greater distance than ten miles. The lighthouse is a tall white building on the south point of the island, very conspicuous, and is first seen with the tops of a few trees. It shows a fixed light which our chronometers, as rated at Halifax, placed in longitude $66^{\circ} 0' W$. Approach it no nearer than five miles. Cape Sable is also a very low island, the white rocks are very remarkable; it terminates in a dark bluff point, and has some dangerous rocks to the southward.

Soundings.—Eastward of Cape Sable the soundings are deep, whereas, from the meridian of the Brazil rock, to the western edge of the bank, they become so much more shallow as to give certain assurance of being in the vicinity of the Cape. The soundings to the westward of Seal Island, are on fine sand, sixty to seventy fathoms will be found on its outer edge; this in thick weather affords an excellent guide for ascertaining your position with regard to Seal Island.

The Lurcher shoal is situated eleven leagues to the N.W. of Seal Island lighthouse, and being five leagues out from the land, is justly considered as very dangerous. It is also the case here that the soundings to the southward are much deeper and less regular than those to the north. At high water there will be sufficient depth for any ship to pass over it; at the same time it will be prudent to avoid doing so.

13th January.—In the morning the wind drew round to north-east, east, and south-east, and at midnight it was at west; during this

round we pushed through the Bryer's Island passage, having to heave to twice; the weather getting thick with dense showers of sleet and snow; the south-west wind blew it off. The tide-ripples (pilots call them tide-rips) in front of this narrow are very distinct, bubbling and breaking with much force. At sun-set we were clear through. The course with a westerly wind and flood-tide will be N. by E., with which you will make the land between Point Lepreau and St. John's. In shaping a course it must be borne in mind that the tides are strong; the flood-tide sets to the eastward towards the Basin of Mines; at two o'clock in the middle watch we anchored in St. John's roadstead.

The lighthouse on Partridge Island and the flagstaff on the parade, which is on the extreme south part of the tower, are due north and south of each other $1\frac{1}{2}$ mile distant. Near the lighthouse is a tower half white and half black, *perpendicular*; this has a fog bell; the quarantine establishment is close by. A beacon lighthouse marks the west point of the harbour, the channel is very narrow, not more than 300 feet wide; a leading wind is therefore necessary, and the beacon must be passed almost touching: it is a bar harbour having deep water inside. On the 16th the weather became gloomy with strong breezes and squalls, snow, sleet, &c., swell heaving into the anchorage, the wind being from south-east to south, and south-west; ship covered with snow and ice exhibiting the appearance of Captain Parry's ship in his polar expedition. In the morning the opposite land of Nova Scotia, which is twelve leagues distant, was distinctly visible, a promise of bad weather as we were informed by the port officers. This combination of threatenings decided us to run into the harbour, where we moored ship in twelve fathoms water, with the parade flagstaff E. $\frac{1}{2}$ S. half a mile. The tides we found very strong, particularly the ebb, which coming out of the river set past the ship to the S.E. seven to eight hours; the rise and fall is from twenty to thirty-four feet.

The pilots are a hardy clever set of fellows, and have sufficient enterprize to cruise well out from the land, frequently as far as the Bryer's Island passage, and towards the Wolves westward. John Reed, our pilot, was not a little proud at having had an opportunity of piloting the first ship of the line that had ever entered the harbour of St. John's. The Cornwallis was, indeed, an object of great curiosity, and was visited by hundreds of people for the fortnight that we were there. Not a day passed but we had numerous visitors. We were in return well-pleased with the hospitality and attention shown us. St. John's is a very agreeable place; a bustling business-like town, rapidly growing into importance; its harbour is crowded with fine ships from three to eight hundred tons, built and belonging there; others are seen, as many as twenty, in progress of building and repairing. In comparison, Halifax is dull and its prosperity in the inverse ratio. At St. John's, the temperature on board the ship was 7° higher than that on shore; zero was the lowest we had it, then very cold;

the ship enveloped in crystal ; and looking at the sails, they were to be seen only through a two inch coating of transparent ice.

27th January.—Taking advantage of a fine N.E. wind, clear weather, and the thermometer at 38°, at 10h. 30m. A.M., we made sail for Bermuda, tide two-thirds flood, passed very close to the beacon lighthouse, having six fathoms on the bar.

On our way to St. John's, we made the eastern passages by Bryer's Island and Partridge ; this is by much the shortest, though attended with great risk. The western passage which we came out by, has the advantage of the many harbours already alluded to, and is also clear and bold.

In sailing through the west channel, between Partridge Island and Bryer's Point, we kept at half cable's distance from the island, the navigable part of the bar being only 180 yards across. The Bay of St. John's is formed by Cape Maspeck to the east, and Negro Head to the west, being five miles and a half apart ; this anchorage ought only to be used in fine weather : with the prospect of a southerly gale, it will be prudent to run into the harbour.

When the tide flows in there is a tide-rip which is very remarkable, viz., the meeting of the river and sea water forms a strongly-marked bubbling line stretching from Meogenes Island to the opposite coast, and sweeps past Partridge Island, at about one mile distance ; all within is thick muddy water ; without, quite clear. This would be an excellent guide in foggy weather.

Appearance of the land.—Ships from the south-west will easily recognize the high land of Ben Lomond. It makes in three hummocks, and is twelve miles to the eastward of St. John's ; the Boar's Head, which is twenty miles to the northward, is also very remarkable. All the high back lands, at the period I write of, had a deep blue tinge, the distinct outline of which strongly contrasted with a perfectly clear white sky. Nearing the port, Meogenes and Partridge Islands will be easily made out, and the city will first become visible over the land within Bryer's Point. The coast land is moderately high, dark, well wooded, with a few reddish-looking cliffs.

We ran along the coast, steering from W.S.W. to W. by S., at a two-mile distance, and might have gone within a third or half a mile, if necessary, the shore is so safe and bold. Mushguash Harbour appeared easy of access and capacious. The pilot said it was shallow and fit only for vessels under 500 tons. Just after passing this harbour, Grand Manan, lifted, making like two islands, the northern one being the smallest ; very soon after the Wolves came in sight, appearing about a fourth of the distance, between Cape Lepreau and Grand Manan. Cape Lepreau runs out very low, and the lighthouse made like a sail off the point ; it is a tall white building with two lights, perpendicular, the lower one being on a projection one-third way down, two white houses are close ; to these standing near some red

cliffs with a dark wood in the rear, show very conspicuously. The cape may be rounded to within two cables' length if required. The coast from Dipper Harbour to the westward has red cliffs, to the eastward they are white; this is an excellent guide to strangers; five miles east of Cape Lepreau we first raised the land of Passamaquoddy.

The back land of Maces Bay is high, and Red Head, its western point, is particularly well marked. Over Beaver Harbour the land is still higher, and makes in saddles or notches. From Musquash Harbour, a W. by S. to W. by S. $\frac{1}{2}$ S. course will lead clear and between the Wolves and Grand Manan, the north end of which being a bold bluff point, may be rounded very close. The distance from Cape Lepreau to Machias is forty miles. At seven P.M. we were clear of Machias Seal Island, and steering away for Bermuda. This lasted but for a short time; we had scarcely made twenty miles before the wind went round to the southward, and blew a gale right up the bay with a tumbling sea. We lay to until four P.M. of the following day, (28th,) when a north-wester sent us scudding along rather faster than we could have wished. Six P.M. of 29th, in latitude 41° north, and longitude $65^{\circ} 33'$ west, the thermometer gave air 34° , water 58° ; this was on the north edge of the gulf stream; barometer had fallen to 29.16. Heavy gale with snow storms; high cross swell; pitchy dark night; scudding at a fearful rate; ship lurching heavily with forward plunges; at ten the lee quarter boat was washed away, and at two, in the middle watch, lost the small bower anchor; it was well stowed, lashed, and secured; the giving way of the bolt for the standing part of the cat-head stopper, was the cause of this loss. This was a very heavy gale, and the storms of snow and sleet heavy and frequent; the last snow storm was in latitude $36\frac{1}{2}^{\circ}$ north; it drove past the ship thick and fast, coating the weather side of the cordage, masts, yards, &c.: its contrast with the paint and tar gave the whole a singular appearance; heavy dense masses of cloud moving rapidly, driving over the mast-heads, and settling to leeward in one impervious mass.

The previous night I witnessed, for the first time, several luminous meteors, which are seen, like the ignis-fatuus, flitting as fast as the eye can follow. Seven were observed at one time at the mast-heads, yard-arms, &c.; they were seldom stationary, and appeared particularly brilliant during the raging of a squall. During the day we noticed a vapour passing over the sea, very close, like veins of a partial fog; this no doubt was caused by the great difference in temperature between the air and water, it being 24° throughout. I have before mentioned the difficulty in defining the southern edge of the gulf stream; in the present case, to within 150 miles of Bermuda the water continued 14° warmer than the air. We may, therefore, consider that the north-west storm of three days had driven the body of the stream far to the southward, and that at daylight, this morning, 31st, in latitude 37° , we crossed its southern edge, the thermometer at

that time showing air 46°, water 66°; and four hours later it gave air 51°, water 65°. While in the stream the current set to the south-east, one mile per hour. The weather cleared up on the 31st, and on the 2nd February, we anchored at Bermuda. Cornwallis told the tale of her having been tempest-tossed; indeed, she exhibited the appearance of a battered old wreck.

23rd February.—Sailed with the Admiral to Jamaica, Havana, and back. In passing Alto Vela, with the chronometers just rated, fine clear morning, the rock bearing north quarter west, ten miles, the longitude was 71° 41' 47" west. The correctness of this was ascertained three days after by sights taken at Fort Charles, Port Royal. We returned to Bermuda on the 10th April, and having embarked the 11th regiment, sailed again for Halifax on the 14th. This regiment will make 2,000 men, women, and children, who have embarked since December. Again anchored at Bermuda, on the 3rd May.

HENRY DAVY.

SUNKEN ROCK IN THE PORT OF HERRADURA.—*Coast of South America, Pacific.*

EXTRACT of a letter from Mr. W. H. Lamotte, commander of the barque Morayshire, dated Valparaiso, Jan. 16:—

“I wrote to you by the Persian, informing you of the unfortunate accident I met with in going into the port of Herradura; since then I have had the cargo discharged and the ship hove down, and I am happy to say that the damage is trifling to what I expected. The ship struck the rock between the stem and main keel, and I find she has split about three feet of her keel, which is already repaired, and I shall commence taking in my cargo on the 19th instant, and leave this for Herradura on the 30th instant. On my arrival here from Herradura, I went on board the commodore's vessel (her Majesty's ship *Stag*) and saw the master, to whom I pointed out the situation of the rock; he then referred to the chart, and said it was a most extraordinary thing, as it was only surveyed by her Majesty's ship *Beagle* the year before last. Commodore Sullivan requested me to let him have a sketch of the harbour from my chart, which I have done. I have also made some remarks for entering the harbour, and they are now printing new charts, taking mine for a copy. It is singular that there have been upwards of eighty vessels loading in that port, and no one knew that the rock was there. It is nearly in the centre of the harbour, with from two and a half to three fathoms water over it.”

[We insert the foregoing from a recent copy of the *Times*, as a caution to vessels frequenting the ports of Herradura, of which there are three separate ones on the coasts of South America, in the Pacific Ocean; namely, *Herradura de Carrisal*, in about 28°

Herradura de Quintero, in about $32\frac{1}{2}^{\circ}$, and *Herradura de Coquimbo*, in 30° south latitude. As the notice does not specify which of these harbours the rock is in, and as it appears to be of a most important description, lying in the very middle of the port, and capable of bringing up a ship, perhaps the gentleman to whom Captain Lamotte has addressed his letter, will supply us with any further information in their power, which will enable us to bring it to light, as such an important danger cannot be too soon known. With regard to the *Beagle's* survey, every seaman knows the difficulty of discovering these hidden dangers, and how easily they are passed by a boat in sounding.—Ed. N. M.]

SUNKEN ROCKS OFF CANDIA.—*Eastern End.*

We insert the following from the *Shipping Gazette*, as a caution to masters of vessels. At the same time we may observe that there is no chart of the island on which they can be laid down, as there is some mistake in the bearings. The rocks, however, appear to lie in the channel between the island and the Yannissei islands.

ROCKS NEAR CAPE SIDERO.—Extract from the log-book of the barque *Union*, Captain John Temperley:—"Remarks on board, Monday, April 30, 1838, commence with light wind and clear weather, all sail set possible. At two P.M., in sailing between the Yannis Isles and Cape Sidero, observed breakers ahead, and in sailing close to them found it to be a reef of rocks, some of which were above water, a passage of about a mile between them and the main. They bear from the northernmost of Yannis Islands, N.W. $\frac{1}{2}$ W. by compass, and from Cape Sidero N.E. by N. by compass, and extended off about $2\frac{1}{2}$ miles and $\frac{1}{4}$ of a mile N.E. and S.E.; the water very much discoloured for about a cable's length in a N.E. direction. My cause for making a remark of them is that they are not laid down in any of my charts, nor any notice taken of such dangers in any of the books. I am of opinion that the said rocks or shoals must be the work of some volcanic eruption."

ON THE CHANGES IN THE FORM AND EXTENT OF SABLE ISLAND, SINCE THE YEAR 1811.

Sable Island, 1837.

On the 30th of September, 1811, there was a severe gale of wind from S.S.E., that washed away all of the dry part of N.W. bar, extending four miles and a half N.W. from the high part of the island, and half a mile broad. The greater part of it was covered with grass, and on the outer part of it was a hill elevated about twenty-five or thirty feet above the level of the sea, on which the rigging and sails of a brig that was wrecked there that summer were placed for safety; but these were all lost when it washed away. There is now, over the same extent of bar, four or five fathoms of water. The sea has been

reducing the western end both since and before that time, at the rate of nearly one-sixth of a mile annual.

Easterly, southerly, and S.S.W. winds, set a rapid current along shore in shoal-water, to the W.N.W. and N.W. ; that is, along the shore of the western end of the island, but not the eastern or middle, as there the current, with southerly and S.W. winds, sets to the eastward. The natural tendency of the flood-tide is toward the coast. When it strikes the island, it flows to the eastward, over the north-east bank, and to the westward over the north-west bank, and passes the west end in a north-west direction, so rapidly that it carries the sand with it ; and the hills of the west end being high and narrow, they are undermined at their base by it, and tumble down some thousands of tons of sand at a time. This, the current beneath catches, and sweeps away to the N.W., increasing the bank. As soon as this current passes the extreme point of the dry bar, it tends more across the bank to the N.E. ; the motion of the sea contributing to keep the sand in motion ; the current carries it to the N.E., and spreads to the N.W. Although across the bank from the island, to the distance of fifteen or twenty miles to the N.W., there is a flood and ebb tide, the flood setting to the N.N.E., the ebb to the S.S.W., the flood comes over a broad flat bottom until it arrives at the highest ridge of the bar, bringing the sand with it so far. It then finds a deep water suddenly to the eastward of the bar, and its strength is as suddenly lost, the waters pitching over this bank settle gently in deep water, and the sand going with the current does the same, and keeps the eastern edge of the bar and the bank very steep ; but to the southward and westward it is flat and shallow.

The ebb tide, setting gently to the southward and westward, meets the steep side of the bank ; and rising above it, passes over and increases in strength, merely levelling the sand that had been brought up by the last flood. It does not carry it back until the next flood comes, which brings up a fresh supply from the washing of the island ; and so alternately the sand changes with every flood and ebb tide. The consequence is, that although the west end is several miles to the eastward of where it was in 1811 ; yet the shoalest or eastern part of the bar or bank has the same bearing from the dry land that it had then, which plainly shows that the bar and bank have increased eastward as fast as the island has decreased in the same direction. But the distance of the outer breakers has not increased more than about two miles ; in 1829 their whole distance from the land being from ten to fourteen miles, in rough weather bearing N.W. from the island. There is a passage across the bar inside, about four or five miles broad, with three or four fathoms of water. Since 1811, or about twenty-six years, an extent of four miles and a half of high land has been washed away, which averages rather better than one-sixth of a mile every year. In the last few years it is nearer to one-fourth of a mile every year, owing

to the land being much narrower than it was the first fifteen years of the elapsed time. The whole of the island that does not wash away, grows in height; the most windy seasons cause the greatest elevation of parts where loose sands can be blown on to them; but the island in general grows narrower.

The eastern end of the island has not wasted much in length since my knowledge of it,—nearly thirty years. The high land (about a mile of it) has blown down with the wind, (but not washed down with the sea, as at the west end,) and now there is a low, bare, sandy beach, extending in a N.E. direction from the high land about three miles. I think about one mile of this was high land, or sand hills, thirty years ago; the other two miles were formed by a low sandy beach, as at present: the elevated portion of the one mile of course has been blown into the sea, and gone to increase the shoal-water on the bar, being carried there by a strong flood-tide setting to the N.N.E. The bar itself extends from the dry part E.N.E., and at the distance of twelve or fourteen miles from the high land, a very shoal spot, always breaks, except when dry, at which time seals may be observed lying on it. Between this spot and the land is a passage about five or six miles wide, with from three to four fathoms of water on it. This bar and bank is also very steep on the north western edge, and shallow and flat on the opposite directions. The bar travels to the northward slowly, the N.W. bar travels to the northward and eastward rapidly. The variation of the compass, by amplitudes, on the 9th February, 1837, was $20^{\circ} 22'$ west, and I think increasing.

The lake in the island fills up very fast, generally by sand blowing into it from all directions, and partially by the sea flowing over the south coast in many places in heavy weather, and conveying the sand with it. The improvements on the island have very much increased within the last few years. When the French frigate was cast away in 1822, the crew, all except the officers, had to cook and live in the little hollows and sheltered spots about the island, for the want of buildings to cover them; and yet they were grateful and uncomplaining. I have since seen Englishmen, with a comfortable house over their heads, good convenience for cooking, and plenty to eat, yet dissatisfied and grumbling. There are now seventeen considerable buildings on the island, besides some three or four small ones, that would upon an occasion afford shelter to four or five hundred persons.

(Signed) JOSEPH DARBY.

*To the Honourable Collector of Her Majesty's Customs
at Halifax, N.S*

ON CHASING.—By *Lieut. Henry Raper, R.N., V.P., R.A.S.*

[Read at the Evening Meeting of the U. S. Museum, May 7th.]

THE principles of chasing have been laid down by writers on tactics, but though few and very simple, the knowledge of the principles

themselves, or of the evidence in their support, is by no means so generally diffused as the importance of the subject demands. In cases, therefore, where no fixed rules are universally recognized, and where, in consequence, the whole issue depends upon individual judgment or experience, it must occasionally happen that valuable time is lost, or that for want of distinct apprehension of the means of attaining the object in view, an irreparable mistake is made.

It is here proposed to state the general principles of the question, and their application to chasing, to speaking a vessel, and taking station, which are all branches of the same subject; and to point out methods of estimating the distance of vessels at sea, and of ascertaining the rate at which one vessel closes another. The mathematical investigations are deferred to the end of the article.

The object is to close the chase in the shortest possible time; and the subject divides itself naturally into two branches, chasing to leeward, or free, and chasing to windward, which we shall consider in order.

1. When the chase is to leeward. It would appear at first sight that the chaser should steer directly for the chase, because in so doing it is manifest that the distance between the vessels is diminished from instant to instant by the whole amount of the distance run by the chaser; while on the other hand, it is increased by part only of the distance made good in the same time by the chase, who runs direct from the chaser only in a stern chase.

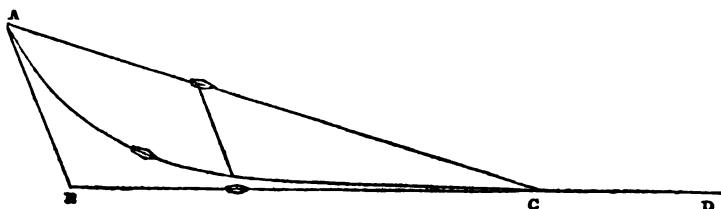
The path of the chaser, when keeping the chase always ahead, or upon any particular point, as the anchorstock, a backstay, &c., is called the Curve of Pursuit.

But a very simple consideration will discover the fallacy of the above reasoning, and the impropriety of thus altering the course continually as the position of the chase changes. Wherever the point in which the two vessels ultimately close, or approach within hail of each other, may be situated, it is evident that the chaser would arrive at it in the shortest possible time by making directly for it. Now when the two vessels move thus, each with her own velocity and in her own direction, for the same point, and arrive there at the same instant, their relative positions remain unchanged till they meet. Hence, in chasing to leeward, the pursuit is effected in the shortest possible time when the chaser keeps the chase on the same bearing. This is the principle of chasing to leeward.

It might appear upon a superficial consideration of the particular case in which the chaser finds himself in a position to run down directly upon the chase's weather beam, or at right angles to the course of the chase, that it would be advisable to take advantage of the opportunity thus afforded of shortening the distance between the vessels in the most rapid manner possible. But the same argument applies to any part of the pursuit as to the whole of it; since, wherever the chaser may have

arrived after a certain time, it would clearly have been a saving of time to have steered directly for that point itself.

Thus, though the distance between the vessels is shortened most rapidly from *instant to instant* on the curve of pursuit, yet, after any *finite portion of time* the nearest approach will have been effected by making at once for that point which is in a line between the commencement, or origin of the pursuit, and the point reached at the close of the said time.



Example: The chase going six knots, and steering East, bears, at the commencement of the pursuit, S.S.E. from the chaser at A going seven knots, and distant 10.4 miles. The figure shows the contemporaneous positions of the vessels both on the curve of pursuit and when on a constant bearing. On the curve the vessels close at D after a chase of eight hours, or when B has run forty miles. On the constant bearing S.S.E. they close at C after a chase of five hours twenty-five minutes, or when B has run twenty-seven miles. If it should be required to close B as much as possible in a certain time, as an hour, the course of A would evidently be determined by taking a point in B C six miles from the point B and drawing a line from A to this point.

The above proceeds on the supposition that the chase's course remains unchanged; this might occur under various circumstances, as for instance, in the case of making direct for a port under a press of sail, &c. The chase, however, if aware that the chaser is keeping the bearing unaltered, and knowing that, in consequence, the issue has become a mere question of time, will, if desirous to escape, edge away, in order that the pursuit may degenerate as soon as possible into a stern-chase.

The time of duration of any chase is evidently the time in which the chaser, at the rate at which he is closing the chase, will exhaust the distance between the vessels.

A chase strictly maintained on the curve of pursuit, must always degenerate into a stern-chase. If the two vessels have equal velocities, the pursuit can never be closed upon this course, since all cutting off is excluded, the chaser will approach within a certain distance of the chase, at which the vessels will remain. If the velocity of the chaser is less than that of the chase, the chaser will

diminish the distance to a certain quantity, after which the chaser will drop, and the distance will increase indefinitely.

Thus it is evident that on the curve of pursuit, superiority of sailing is absolutely indispensable to the chaser, while on the other hand, a vessel of equal, or even inferior sailing, may succeed in cutting another off, unless the latter becomes aware of her own superiority of sailing, and keeps away directly from the chaser.

As the course and rate of sailing of the chase cannot be determined separately by any rules of certain application in practice, the chaser must find the required bearing by trial. It will in general be advisable to err rather on the side of the curve of pursuit, than to lose the opportunity of closing the chase by keeping too high.

2. In chasing on a wind, the question takes a different form; both vessels being on a wind, the selection of the course is excluded, and consequently the question is narrowed into the single point of diminishing the distance from instant to instant.

The chaser being to leeward, and having the superiority of sailing, (or the attempt would be fruitless, without a change of circumstances,) closes the chase fastest on that tack on which he looks up the best for the chase. It is easy to see, without going into further details, that the chaser will always look best up for the chase, while he is making for a position dead to leeward, or in the stream of the wind, of the chase; when the chaser has passed this line, he no longer nears the chase so fast as if on the other tack, and when the chase is brought abeam, the chaser neither increases nor diminishes the distance between the vessels. It is evident, that since the chaser diminishes the distance fastest when in the stream of the wind, he should tack as near this position as circumstances will allow, the proper time for standing on each tack being determined by the working of the vessel, and the weather, sea, &c.

From the nature of this particular question it is evident that the error of practice is most commonly of the same kind, namely, standing too long on one tack. A common precept is to tack when the chase is abeam; but it is manifest that in this case time is lost, because before this takes place the chaser would have done better on the other tack. It is, indeed, not unusual to bring the chase *abaft* the beam, but it is palpable that in this position the chaser is absolutely running away from the vessel which it is his object to close.

All the preceding applies equally to speaking a vessel, with this difference, that the vessel spoken will shorten sail to expedite the manœuvre.

In taking station on a certain point with reference to the admiral, the point assigned is itself considered as running with the same velocity and in the same direction as the admiral's ship; and the object will be attained in the shortest possible time by keeping this point on the

same bearing. Precision in this manœuvre is of particular importance, as the admiral would not in general shorten sail.

The following question, though not directly involving the pursuit of one vessel by another, yet as it relates to closing a given point in the shortest possible time, may properly be treated here. A vessel steering a certain course, and going at a certain rate, it is required to send a boat away so as to reach a certain point in the shortest possible time; and the question is, to determine when the boat is to be dispatched. For example: a ship sailing east, along shore, 8 knots an hour, it is required to send a boat which pulls 5 knots, to land at a given point in the shortest time.

It is evident that as long as the given point is nearly ahead, the ship going 8 knots, nears it faster than the boat could going 5 knots only; but when the ship has brought the point abeam, as she now no longer diminishes her distance, but will begin to increase it, it is evident that the boat, if dispatched before, would have already been making rapid progress towards the point. Hence, there must be some point at which the boat should be dispatched so as to effect the greatest saving of time.

The solution of this problem is very simple. If the angle between the ship's head and the bearing of the point be considered a *course*, it is clear that for every 8 feet the ship runs, she nears the point in question by the D. lat. corresponding to the said course, and the distance 8. Now, while the ship runs 8 feet, the boat runs 5; and as long, therefore, as the said D. lat. is greater than 5, the ship nears the point faster than the boat could; but when the D. lat. is less than 5 the boat nears the point faster than the ship; therefore, when the D. lat. is equal to 5, it is the time for the boat to start. Hence this rule:—Find the course corresponding to the ship's rate as dist. and the boat's rate as d. lat., this is the bearing of the point, reckoned from the ship's head or course. In the example above, dist. 8, and D. lat. 5, give the required bearing of the point, $4\frac{1}{2}$ points on the bow.

The distance of a vessel when seen *on* the horizon, is measured by the number of minutes in the true dip, corresponding to the height of the eye of the observer.* In practice, the actual distance will rather exceed this quantity, from the effect of refraction. Hence, when a vessel seen at sea can be brought to appear with her water-line on the horizon, either by going up the rigging, or down the side, her distance may be nearly, though not very correctly, estimated.

When a vessel is seen altogether beyond the sea horizon, her dis-

* The true dip is found by multiplying the square root of the height in feet, by 1.063. For example, at 25 feet, the dip is 5 multiplied by 1.063, or 5.3. The square of the dip is found by multiplying the height by 1.13; thus the square of the dip to 25 feet is 25 multiplied by 1.13, or 28.2.

tance and magnitude may be inferred, though not with much precision, by a method which will be easily understood from the following example. From the hammock-rail of a frigate, 16 feet above the sea, the fore-top-gallant yard of a vessel is seen, (the sail being set,) and from the frigate's main-top at 66 feet, the vessel's cross-jack-yard is seen. Now the dip (which, as above-said, is the distance of the visible horizon) to 16 feet is $4'1$, and to 66 feet, $8'6$; hence the horizon of the upper station is 4.5 miles beyond that of the lower one. Now, it is evident that the two stations in the frigate themselves are just seen on the horizon from the cross-jack-yard, and fore-top-gallant-yard of the other vessel; hence the height of the vessel must be such that the difference of the dips of the cross-jack and fore-top-gallant-yards gives 4.5 miles. This will be found, on referring to Edye's Tables, to hold of the 26-gun corvette; and the distance between the vessels is the dip of the lower station in one added to that of the upper station in the other: hence $4'1$ added to $10'8$, the dip to 116 feet, the height of the corvette's fore-top-gallant-yard, gives distance, 15 miles. The distance of the horizon, is, however, in practice somewhat greater than the true dip, on account of refraction, the correction is uncertain, but it is usually assumed at $\frac{1}{4}$ or $\frac{1}{2}$ of the dip; adding, therefore, $\frac{1}{2}$ of 15, or 1 to 15, gives the dist. 16 miles, which is probably within a mile or two.

The distance of a vessel nearer than the horizon, or upon it, may be approximated to by the following simple rule:—

Observe her altitude, from her water-line, estimating the height in feet of the point observed, as the mast-head, if this is not known. Divide the number of feet by the number of minutes in the altitude; take $\frac{1}{2}$ the quotient; add to it $\frac{1}{10}$ of the half, and $\frac{1}{3}$ of this last; the sum is the distance in miles.

Ex. The alt. of a mast-head 150 feet high, is 22'. 150 divided by 22, gives 6.82.

half	3.41
tenth of half	.34
third	.11
	.86

Distance required 3.86 miles.

The distance of a vessel beyond the sea horizon may be approximately determined thus:—

Obtain the alt. of some well defined point, estimating the height of the point observed. From the alt. subtract the true dip of the eye. Note the remainder.

To the square of the dip (see note, p. 450,) of the height of the point observed, add the square of the remainder, and from the sum subtract the square of the dip of the eye.

From the square root of the result, subtract the remainder; this gives the distance in miles.

Ex. The height of the eye being 16 feet; the alt. of a yard, estimated at 149 feet high, is 5', required the distance.

alt. 5'	149 mult. by 1·13	169
dip, 16 feet 4	square of rem.	1
remainder 1		170
	square of dip 4'	16
	square root 12·4	154
	—1	—
	dist. required 11·4 miles.*	—

The investigation of the curve of pursuit belongs to the integral calculus, and will be found treated in works upon that branch of mathematics. We shall obtain here the polar equation of the curve, as a more concise, and in some respects more efficient, solution of the problem, than that of rectangular co-ordinates; especially as the limits of the integral in this form involve the distance of the vessel at the commencement of the pursuit, and the course she is steering; while the rectangular co-ordinates are themselves a subject for calculation.

Let u be the distance between the vessels at any instant, θ the angle made by u , with the direction of the chase's track, which assume the axis of x ; V the velocity of the chaser, v that of the chase, and less than V ; then referring the measures of the variations of u and θ to the same element of time dt , we have

$$\frac{du}{d\theta} = \frac{du}{dt} \frac{dt}{d\theta} \dots\dots\dots (1)$$

Now, since the motion of the chaser with the velocity V tends to diminish u , and that of the chase with the velocity v tends to increase it, it is easy to see that $du = -Vdt + vdt \cos \theta$, whence

$$\frac{du}{dt} = -V + v \cos \theta$$

Again, it is the motion of the chase alone, for which the chaser is always steering, that causes the angle θ to vary and to decrease; and it is easy to show that $-a d\theta = vdt \sin \theta$, whence

$$\frac{dt}{d\theta} = -\frac{u}{V \sin \theta}$$

The equation (1) becomes therefore,

$$\frac{du}{d\theta} = -(-V + v \cos \theta) \frac{u}{v \sin \theta},$$

* As altitudes observed above the sea horizon are often liable to error, as 2' or 3', the resulting distance will be uncertain in proportion; moreover, some allowance should, in strictness, be made for terrestrial refraction. If circumstances are the same, at both observations, the difference of the two distances will still be not much in error. The height of the vessel also being in some degree uncertain, it is perhaps not worth while to attend to these corrections; yet the method may often, from the shortness of the computation, be a useful assistance in forming the judgment.

and separating the variables, $\int \frac{du}{u} = \int \frac{V d\theta}{v \sin \theta} - \int \cot \theta d\theta$
whence

$$\log u = \frac{V}{v} \log \tan \frac{\theta}{2} - \log \sin \theta + C \dots (2)$$

Now, at the limit, let $u = a$, and $\theta = \alpha$, hence

$$C = \log a - \frac{V}{v} \log \tan \frac{\alpha}{2} + \log \sin \alpha$$

Hence

$$\log u = \frac{V}{v} (\log \tan \frac{\theta}{2} - \log \tan \frac{\alpha}{2}) + \log \sin \alpha - \log \sin \theta$$

$$\text{and } u = a \left(\frac{\tan \frac{\theta}{2}}{\tan \frac{\alpha}{2}} \right)^{\frac{V}{v}} \frac{\sin \alpha}{\sin \theta} \dots \dots \dots (2)$$

It will be further convenient, for practical application, to express θ in terms of the original value, or limit a , and the difference of the bearing of the chase from the chaser, after a given time, that is, after a change in the course itself of the chaser; calling ζ this change of course or of azimuth, $\alpha = \theta + \zeta$, Eucl. i. 32, whence

$$u = a \left(\frac{\tan \frac{1}{2} (a - \zeta)}{\tan \frac{\alpha}{2}} \right)^{\frac{V}{v}} \frac{\sin \alpha}{\sin (a - \zeta)} \dots \dots \dots (2)$$

by which the distance u is found from the given distance a ; the angles α and ζ , and the velocities. Since a and v are both involved, the course and rate of the chase cannot be both determined, except by successive given values of u .

When $\theta = 0$ we have $u = \frac{0}{0}$, but the limit of the variable part of the expression when $u = 0$, becomes $\frac{\theta}{2\theta}$, which as $n = \frac{V}{v}$ a number greater than 1, becomes 0, when $\theta = 0$. Hence the curve of pursuit always degenerates into a stern-chase.

When $V = v$,

$$u = a \frac{\cos \frac{\alpha}{2}}{\cos \frac{1}{2} (a - \zeta)} \text{ which is minimum when } a - \zeta \text{ or } \theta = 0$$

hence $a \cos \frac{\alpha}{2}$ is the nearest approach which the case admits.

We shall omit further details not of practical utility, such as the time of the whole, or any part of such a pursuit, &c., and proceed at once to the consideration of the path in the shortest possible time.

In the time of the whole, or any part of the entire duration of the pursuit, the chaser describes the space $\int \sqrt{v} ds$, in the same time the chase describes the space $\frac{1}{v}(x' - x)$. Hence $\frac{1}{\sqrt{v}} \int ds = \frac{1}{v}(x' - x)$.

In the case of the shortest time, $\int ds$ a minimum, is to be assigned by the calculus of variations, according to the conditions proposed; in the present case, the question is one of a distance lying between two points, which gives $\int ds$ a straight line. In the entire pursuit, s is to be reckoned from the commencement to $s = 0$, where it joins the line $x' - x$, hence $\frac{s}{\sqrt{v}} = \frac{x' - x}{v}$, hence $\frac{v}{\sqrt{v}} = \frac{\sin \alpha}{\sin(\alpha - \theta)}$ or $\frac{\sin \alpha}{\sin \zeta}$ and as V, v , and α are given ζ must be constant, or the chase kept on the same bearing.

For a given portion of time, s will be taken from 0 to s' , the minimum distance in this case is obviously in the line joining the origin of the pursuit, and the point x' , whence ζ is determined.

The formula for the distance of a vessel of given height, is

$$x = -(\epsilon - a) + \sqrt{\Delta^2 - a^2 + (\epsilon - a)^2} \quad \text{See U. S.}$$

Journal, 1829, Part II. in which x is the distance required, ϵ the alt. α the dip of the eye, Δ that of the higher object; the unit being the nautical mile, or min. of arc.

HURRICANE EXPERIENCED BY THE SHIP FELIZA,

Captain Reynolds, from Jamaica to Bristol, on the 18th, 19th, and 20th of August, 1837.

[Extracts from the journal.* The ship sailed from Falmouth, Jamaica, on the 31st July. In the run to the west end of Cuba she experienced calms and light variable winds, principally from the S.E. On 7th August, at 7 P. M., Cape Antonio bore E. S. E. five or six miles.]

WEDNESDAY, 16th August. P.M. Calm; hot sultry weather. Saw the wreck of a large ship's mast, &c. At 2 a light breeze sprung up from the E.N.E. Midnight moderate and clear.

17th. A.M. Moderate and clear, wind east, heavy swell from S.E. At 8 the breeze increasing, ship plunging severely. At noon strong gale, with a high sea. Latitude observed, $30^\circ 45' N$. Longitude (not given, but probably about $77^\circ 30' W$.) P.M. Strong increasing gale, wind N. by W. heavy sea rising, shortened sail, &c. At 6 gale increasing, with heavy squalls; handed the main-sail and mizen-top-sail; ship labouring much, and shipping a great deal of water upon deck; close-reefed the top-sails. Midnight, gale increasing.

FRIDAY, 18th. A.M. Handed the fore-sail; at 4 handed the fore-top-sail. At 8 blowing a severe gale, with heavy squalls, (al-

* Altered to civil time.

though not so stated in the journal, we know that the ship was hove to on the larboard tack, probably between 4 and 8.) At 10 the fore-top-mast stay-sail gave way, and was split into pieces. At noon the jib-boom, fore and main-top-masts, and mizen-top-gallant-masts were carried away at the caps, and went overboard with all the yards, &c., attached; the sea running very high, and the wind (which though not so stated, we believe to have been at this time from the east) blowing quite a hurricane. People employed cutting away the wreck, to prevent damage to the vessel. P.M. At thirty minutes past noon, wind east, the fore-mast gave way eight feet above the deck, and the bowsprit close to the gammoning. With great difficulty got the wreck clear of the ship, now nearly on her beam-ends, at the same time labouring heavily and shipping a great deal of water. At 2 the main-sail and mizen-top-sail were torn out of the gaskets by the tremendous force of the wind, and were instantly blown into shreds; the sudden crash of the canvass, as it was released from its confinement, was startling even amidst the awful din of the elemental war. At 4 the ship righted a little; got the pumps to suck; the water discharged was very much discoloured. Lashed two hammocks in the mizen rigging to endeavour to keep the ship's bow to the sea, but she nevertheless laboured excessively, the sea running very high, making a breach over the vessel, and the wind still blowing a hurricane: the gloomy and wild terrific aspect of the weather can scarcely be described by mere words. At 8 wind veered a little to the southward, still unabated in violence. Midnight, the same weather; the galley was blown in pieces; people at the pumps. Wind, at 1, E.; at 9, E.S.E.; at 11, S.E. by E.

SATURDAY, 19th. A.M. Hurricane raging; ship straining much. At 8 the same weather. At noon storm unabated in strength, the wind veering more southerly; sea breaking over the ship, she driving at the rate of $3\frac{1}{2}$ knots an hour with the wind; four hands constantly at the pumps. Wind, at 1, S.E.; at 9, S.E. by S.; at noon S.E.S. P.M. Hurricane still raging; heavy seas, most awful to behold, at intervals breaking with great violence over the ship; (she was now drawing near the *crisis*, or nearest approach to the vortex;) the main and mizen-stays were carried away; secured the masts with hawsers. Midnight, wind blowing furiously; the starboard-quarter-davit broke; secured the boat; wind throughout veering to the southwestward.

The commander of a ship thus situated, understanding the theory, and having a "hurricane circle" to refer to, would experience the greatest relief to his mind from the circumstance just stated—the wind veering to the S.W.—as, every hour after, he would be approaching nearer the final cessation of the raging tempest, having successfully past the *crisis*. Without such knowledge his mind would be in the utmost anxiety to the very end of the commotion.

It must be recollected that a hurricane cannot be compared with an ordinary gale; the contemplation too, when it does flit across the imagination, (working the pumps is a capital preventive of this,) of the slender thread that links time with eternity, which seems under such rough treatment, a vessel receives, ready to give way every instant, is not the most agreeable even to the strongest mind, and stoutest heart; for, say what they will, all of us have a strong natural antipathy, I ween, to being suffocated with water. There is, in truth, something altogether indescribably awful and novel in these storms—unlike any other weather experienced at sea or on land; there is, consequently, room for the exercise of all a man's firmness under the trial; and although few thorough-bred seamen have ever been decidedly terrified at the impressive scene, yet we have heard, and in fact knew, one of the parties of three persons who were absolutely frightened to death! The journal continues—

SUNDAY, 20th. A. M. The larboard boat broke adrift, secured her; both the boats much injured. At 4 wind a little more moderate, veering to the westward. At noon heavy gales, with sudden gusts of the wind. Hands at the pumps; several of the men quite exhausted and incapable of using any exertion.* P. M. Strong gales, wind W.S.W. and more steady; (*i. e.* the intervals of change had been lengthened, and this was the last shift during the hurricane;) the sea, however, still very high, and breaking constantly over the ship, which laboured heavily and was much strained. At 4 more moderate with less sea; (occasioned by the ship having arrived at the southern margin of the storm;) bent the fore-top-mast stay-sail on the main-stay, to get the ship before the wind; also bent the main-sail. At 4h. 30m. wore and set the reefed main-sail; sea still high. Midnight, more moderate, but the weather still gloomy: scudding before the wind on an E.N.E. course.

MONDAY, 21st. A.M. Wind W.S.W. At 8 moderate and cloudy, ship rolling heavily, and shipping seas. Noon moderate; employed fitting jury-masts. Latitude observed, 31° 58' N. Wind came round to west, and ultimately settled at W.N.W.

It was fortunate for the worthy and excellent seaman who commanded the Feliza, and his crew, that they had a good strong ship under foot; for if she had not been so, much less buffeting would have sent her, with such dead weight as a sugar cargo, down to the coral shades below; and it is not a little creditable to the builders of Bristol, that we never hear of the unseaworthiness of the ships they construct.

* Merchantmen are generally short-handed; had this ship sprung a leak, her crew evidently would not have kept her afloat. Is there an act of parliament to regulate the number of hands according to tonnage? If not, it is a great omission.

*Remarks on the hurricane experienced by the ship Feliza,
August, 1837.*

It appears, after due consideration, that the N. by W. wind (P.M. of the 17th) was one of the variable veins of air set in motion by the advance of the formidable meteor; the heavy swell from the S.E. being an indication of its approach from that quarter; and that the first true wind of the circular storm was from the east, mid-day of the 18th; the succeeding changes occurring, gradually, but not at equal intervals of time, round, *apparently*, from left to right, to the S.E. south, S.W. and W.S.W., ending at midnight of the 20th. This tremendous storm having continued for the very long period of *sixty hours!*

The ship, therefore, had fallen under the north verge of the hurricane, and passed through the first and second quadrants of the circle, crossing the entire diameter, which, allowing only the low rate of 13 miles an hour for the velocity of the progression, may be taken at 780 miles, and the circumference at 2,451 miles; so that, by the lowest calculation, this gigantic bubble must have spread over a space equal to the distance in a north and south direction, from the little Bahama, to the Chesapeake, and from east to west, from the 70th degree to the 84th! Two weeks before another of these mighty whirlwinds had swept over the ocean in this locality, a memorial of which was probably the wreck of a ship's mast, spoken of in the journal.

The *crisis* took place when the wind was at south or S. by W. If the ship had retained her spars entire until the period when this occurred, she would probably have lost them then: her losing them so early appears to have been occasioned by her extreme motion. *

We are next to consider the line of progression of this storm, which is extremely interesting on account of its occurrence near the parallel, where, according to the Redfield theory, it should curve to the northward: from the changes of wind which took place, the discoverer of the rotary process, is borne out in his statement. It appears that, at the very time the ship entered the hurricane, the meteor was inclining from its north-western progression to a northerly course, the curve continuing until the ship felt the wind from the E.S.E.; after which the meteor pursued a steady course to the north, the changes of wind being gradual round from east to W.S.W.

To clear up any doubt that might be entertained about the altera-

* Why do not the merchants supply the commanders of ships with good instruments? Such would evidently be to their own advantage. A marine barometer would have given notice of the approach of this hurricane, which would have allowed time for getting down the top-gallant masts and yards, and even for striking top-masts; (we have seen this done in a very heavy gale with excellent effect,) which as a matter of precaution is worth attending to, as likely to save the lower masts.

tion of the line of progression having taken place, and of the N. by W. wind not being one of the circular storm, we may be permitted to add a few more remarks, for it is only by reasoning upon facts that we can hope to arrive at the truth. That the meteor was actually curving from the northwestern to the north line of progression we may infer from these reasons: had the progression been uniformly to the N.W., the last shift of wind felt would have been from the S. by W., if there were not any dilation of the circle at the time: if there were, and it was not excessive, then the point of exit would have been one or two points more westerly, and the duration of the storm in both cases less than actually experienced in the present instance; the intervals of change between the shifts of wind in the first case, without material difference; in the second, the intervals would be lengthened with the increase of the circle. It is quite possible, indeed, where the circle continues to dilate to an extreme extent, that a ship, whilst the meteor progresses to the N.W., after she has entered with the first wind at the east, shall have her exit with it at W.S.W. instead of S. by W.: in the instance we have under consideration, the only circumstance which would favour this view, is the very long continuance of the storm; there are no means, however, of knowing, or even for conjecture, whether the circle was still enlarging, or had ceased to do so, the occurrence of the storm near the parallel of change supports our opinion of the change; and as these extraordinary phenomena have hitherto been found following a singularly uniform line of path, it justifies that opinion; and there can be no reason why the ship may not have fallen into the storm at the moment of its change.

On the other hand, if the progressive course had been throughout to the north, the east wind would have continued for a long time—about 30 hours—without material change, and the ship would have passed through the vortex, (if she escaped foundering there,) and at that critical moment have experienced sudden shifts, with the most violent strength of the wind; after which it would have steadied at west for about 30 hours longer, or until the vessel was finally ejected. The reader will be pleased to observe, that with the north progression, there would be no material alteration in the point of exit, let the dilation be as great as it may, because the vessel would be on the line of progression; whereas, with the meteor following a N.W. course, the vessel's apparent movement towards the posterior verge, would be on a parallel with the line of progression, so that the northerly inclination of the path, combined with the increasing enlargement of the circle, would have the effect of altering the point of exit, by a certain amount, to the right in such a case as we are considering. The facts being before the reader, he may refer to the "circle," and reason out the matter for himself; and we may express a hope that every commander will construct one for his own

use, which he may do in an hour, with thick drawing paper; he will find it assist his study of the subject greatly.

Again, if the meteor had been curving to the right, or eastward by north, the ship would have been gradually drawn into the fourth quadrant, and afterwards into the third, and have experienced the changes of wind of those sections, and with this remarkable difference from what actually occurred—the shifts would have been *apparently* as well as *truly* from right to left. And, further, if from the great extent of the meteor, the effect proved so slow as not to have influenced materially the apparent movement of the vessel until she had entered the second quadrant, or after the wind had got to the south, she would then have passed into the third quadrant, and have experienced the changes in that segment; that is, from the northward and westward. None of these circumstances having occurred, we may correctly infer that whilst the ship continued within the circle of operation, the alteration of the progressive line did not reach beyond the north point.

The effect of such alteration would be proportioned to the extent of the meteor; that is to say, where the diameter is inconsiderable the changes of wind would follow in quicker succession, but when the circle has a very extended circumference, the intervals in time between the changes would, consequently be retarded. This consideration it is necessary to bear in mind whilst dealing with the subject.

If the N. by W. wind had been actually the first of the rotary storm, the progressive course of the hurricane, in the first place, must have been to the W.S.W., (a point not hitherto assigned to any of the western meteors,) the wind veering to the north, N.E. and E.S.E., when the course must have been suddenly altered to the north. We see nothing of these changes in the journal, but the next change from N. by W. is east; and it may be presumed, although not so mentioned, that the shift was sudden. I cannot say decidedly that this W.S.W. progression could not have occurred, because we are not sure that we are acquainted with all the eccentric movements of these meteors; nevertheless, from the indefatigable inquiry of Mr. Redfield, aided by his clear and comprehensive mind, such a course has never been traced. We may reasonably infer too, that as this N. by W. wind continued near 24 hours without change, (according to the column of winds in the journal,) there was no rotation then in the aerial current. This, it is true, might have happened if the progression had been to the W. by S.; but in that case, the ship would have passed through the vortex, or so close to it, as to have had all the masts blown out of her, and she would have experienced the wind in rapid changes at the height of its fury; after which the progression must have shifted suddenly to the north: such do not accord with the facts stated. It appears

by the journal, that the ship from noon of 17th to noon of the 21st, had made 71 miles northing; her drift, taking the average of 3 knots an hour, whilst laying-to about $56\frac{1}{2}$ hours, was $169\frac{1}{2}$ miles in the curve she described from left to right, or from S. round by the west, to north; and her northing whilst scudding from 4h. 30m. P.M. of 20th, to noon of the 21st, was 32 miles; and making due allowance for the southing from noon of the 17th, to 8 A.M. of the 18th, the amount of northerly drift was 40 miles. From this calculation it seems that the vessel was out of the influence of the Florida stream. Her longitude is not given.

I have noticed the above circumstance here, to show that the movement which a ship makes whilst she lays-to in a circular tempest is, comparatively, of little account, when the vast extent of the circle is considered. Indeed, she may, in sea language, be said to "go round upon her heel;" and therefore whilst using the "hurricane circle" to discover the changes likely to take place after the first shift, she may be considered as a stationary object.

One thing perhaps may require to be explained, that the tiro may understand clearly what is meant. In the present case I have said that the ship passed through the entire diameter of the circle: this is not strictly true as the words imply; for she herself, aided by the tremendous power of the wind could not perform such a feat as drifting 780 miles in 50 or 60 hours. The progression of the storm by bringing up to the vessel's position the successive changes, gives the appearance of her having passed through the circle from N. to S.

STORMY JACK.

NOTE. In this storm the ship, on the larboard tack, could not be kept to; and no doubt her extreme uneasy motion, and the quantity of water she shipped, as noticed in the journal, may be partly attributed to the vessel falling broad off into the trough of the seas. In a hurricane I once experienced, the wind kept on the larboard quarter; all our endeavours were fruitless to keep the bows to.

It would be advisable, therefore, on a ship's entering one of these storms, when the wind is from E.N.E. by the north, to the south east, during the N.W. progression, to bring her to on the starboard tack, as then she will come up gradually as the changes take place. The journal has no notice of rain having fallen, or of lightning having been seen: it is probable, however, that both were present.

QUESTIONS, *for the consideration of those who encounter Hurricanes and Tyfoongs.*

INDEPENDENT of a detailed narrative of facts occurring during a storm, which all commanders may not feel disposed to enter into, or when committed to paper to publish, the following points of inquiry may be received as standard queries, to be answered by any who may fall into a circular storm in the West Indies, North Atlantic, off the Mauritius, gulf of Bengal, and China sea.

1. Date of hurricane, tyfoong.
2. Latitude and longitude at the time of entry.
3. How was the wind before the storm commenced.
4. First shift of wind at the commencement.
5. Successive points the wind veered during the storm : noting when the changes were gradual and when sudden ; and the intervals of time between each shift as near as possible.
6. Name the last shift of wind at the conclusion.
7. Name the wind which succeeded the termination of the storm.
8. The hour when the storm commenced, by civil time.
9. Hour when the storm ceased.
10. Hour when the lowest depression of the barometer or sympicometer was observed.
11. Hour the barometer began to rise.
12. What effect, if any, on the thermometer.
13. The condition of the weather two or three days preceding the storm, and whilst it continued—clouds—thunder—lightning—rain—obscurity, &c.
14. The time of the fall of the masts : point from which the wind blew at the time.
15. The *crisis*, or greatest height of the wind ; at what time ; point the wind blew from.
16. If lying to, on which tack ? time brought to. If scudding, on what course ? time of bearing up.
17. Latitude and longitude at the end of the storm.

The answers, if correctly given, will be sufficient to enable any person who has considered the subject to define the action of the storm, and to determine whether the individual tempest treated of, agrees in all its features with the theory ; for it is only from repeated confirmations by practical observers that it will be received with entire confidence by the mass of seamen ; so that it behoves them to set their own " shoulder to the wheel," in order to satisfy themselves of its correctness.

STORMY JACK.

[We shall be thankful to any of our readers for answers to the foregoing, on any occasion of their meeting with hurricanes.—ED. N. M.]

LIFE-RAFTS IN CASE OF WRECK.

London, April 4th, 1838.

MR. EDITOR,—A short time since as I was perusing a volume of the transactions of the society for the encouragement of arts and manufactures, I saw the following ingenious plan for constructing a life-raft, of such materials as every ship must of necessity carry to sea for other purposes:—namely, Four water casks or butts, four pair

of slings, eight capstan bars or small spars, three gratings, and four handspikes, to be put together in the following manner.

First, lay two capstan bars parallel to each other, about six feet apart, on which, place three gratings, and lash them together. Then lay two more capstan bars athwart the ends of the former, one on each side of the gratings, and secure them with good strong lashings; which will form a square platform for the men to stand on. In the next place, let a cask be secured on each side of the square, by means of the slings. At the same time part of the crew may be employed (on the other side of the deck) forming a square with four more capstan bars, which is to be placed on the top of the casks, and lashed down to the lower square. This will keep the casks on the outside of the platform, and leave plenty of room for the men to sit or stand without danger of being bruised. For further security a handspike may be lashed to each corner of the raft, and a life-line passed round it, and made fast to the upper end of handspikes, which will be about four feet above the platform, and for further security, may pass obliquely to the corners of the four upper capstan bars. Life-lines may also be led athwart the platform for the men to hold by. The raft being constructed, it is hoisted out by means of two whips, one on the main-stay, hooked to two pair of slings fastened to the corners of the raft; or (if the masts have been carried away) launched overboard by hand.

The bouyancy of four casks, each capable of containing one hundred and eight gallons, is equal to the weight of thirty men nearly, supposing each man to weigh one hundred and fifty pounds; but as the casks, if not totally immersed, will tend to break the sea, I would not recommend it for more than twenty men. The casks will then be at least a foot above water, and if the men sit on the gratings, and thereby displace a greater quantity of water, the raft will float much lighter and safer.

By giving the foregoing plan publicity by the means of your valuable magazine, you will render a great service to the maritime interest, and public in general, and will oblige your constant reader,

THE SAILOR'S FRIEND.

[See further plans of life-rafts—Captain Cookesley's, in p. 73, of our volume for 1835; and another in p. 265, of our present volume.]

RANDOM RAMBLES.—*The Mariners of England.*

“TOTAL Abstinence Societies! Mr. Seaward, Where will they stop? That is the question: one which receives an answer every day in Africa, in Egypt, in Turkey, and in India? In those parts of the globe, abstinence of some kind or other is peremptorily

enjoined: and what has the experience of ages gone to prove, but that it is a Utopian theory not reducible to practice, and which the state of society in those countries evidently testifies. It is a species of theological tyranny, sir, debasing to the human kind, relieving it from self-respect and moral restraint, to place it under fixed and despotic laws.

“Can anything be more deplorable,” continued Capt. Wetherall, becoming energetic, “than the ridiculous abstinence from flesh meats among the Hindoos? Their consequent division into castes and sects, not affected by what proceeds out of the mouth, (wherein the Christian believes are the issues of life unto life, or death unto death,) but upon the perishable material which passes into it, and which the philosopher and naturalist know full well are derived from a common origin, from earth to plants and herbs, vegetation to animals, and animals to food. Can anything be more ridiculous, sir, than the refusal of the Turk to the judicious use of the grape in moderation, and take to smoking opium till his intoxication amounts to raving insanity? Are not all these people more disposed to heinous crimes, to effeminacy, licentiousness, and cruelty, than our beef-eating Britons? Already some of our tee-totalists begin to talk largely of the brutalising effects of animal food, particularly upon our sailors and soldiers. Sailors! did I say. Poor fellows! their hardships and privations are many; their enjoyments but few; and they are now, in many of our ports, exposed to a species of downright persecution. We shall soon be told to live upon crowdy and horsebeans, drink raw water, and then—what then, Mr. Seaward?—why, our uniforms will become an abomination in dress, and we shall be entreated to classify in drabs and olives; although nature herself disdains this sectarian livery, and our seamen, if they do strip off the blue jacket, would rather put on a good outer covering of tar and feathers. The national debt may then be reduced, for it will cost the government but little to keep in repair their long-boasted bulwarks,—the wooden walls of Old England. It has become fashionable to depreciate the character of our mariners, particularly because they are, happily, at the present moment, not directly engaged, hand to hand, and foot to foot, with their country’s enemies. This is illiberal, sir, and ungenerous into the bargain, not to say, highly impolitic. No sooner is their vessel moored in a harbour of refuge, than they are told, they will be good for nothing, unless their grog be immediately stopped, and one of the tee-total tracts mentally swallowed in lieu of it. No wonder they make wry faces at this, for it is a discipline to which few landsmen, not excepting their advisers, will submit.

“I was once, Mr. Seaward, seated alongside Admiral Sir Richard Keats in the cabin of a steam-packet, cuffing a long yarn upon nautical affairs, when two very demure gentlemen came down. ‘Waita! he! a—bring us two tumblers each, and plenty of wata!’ ‘Yes, sir.’

They were quickly produced. A box of powders was then opened with great solemnity: solutions, prepared in separate tumblers, dashed into each other: *whish, whish*, was the commotion, and down they were gulped instanter. 'What do you call that?' said the admiral. 'Soda-water, sir.' 'Soda-water!' exclaimed he: 'Were you tipsy last night?' 'Oh, sir,' said the younger of the two, 'we never take spirits;' and, lengthening out a very fallow visage, 'total abstinence, sir; and this soda-water is also an excellent remedy for sea-sickness.' 'Sea-sickness, my man!' retorted the veteran admiral. 'Good heavens! how you wants are multiplied. A glass of cold brandy and water is certainly a much better remedy, in my opinion.' 'We maintain,' said the elder gent, that ardent spirits are an abomination anywhere, in any circumstances.' 'Indeed!' replied Sir Richard. 'Hark'ee, my fine fellow! I have been surrounded by many ardent spirits in my time, and an abomination they were to the enemies of their country: but if we had mixed a tub of soda-water on each hatchway while taking the ships into action, you would have been drinking your trash perhaps in slavery, or, at best, under some other sovereignty. Temperance is necessary; and in her Majesty's service was rigidly enforced, while sobriety and good conduct was promoted to honour: but total abstinence is perfect humbug. It would soon destroy our national energies. Sailors are neither monks nor hermits. It's all humbug! all humbug!'

"Now, Mr. Seaward, I am quite of the admiral's opinion," continued Captain Weatherall. "Temperance is the great and prime requisite of a crew collectively, or the mariner individually: but why are seamen to be made a butt for these Utopian pharisees to discharge their arrows upon? Is their monotonous life never to be relieved by cheerful, social, and rational enjoyment; or by those little luxuries which landsmen (with all their cant) seek opportunities of gratifying their appetite for? Or are they to become Turks, break their pots, and take to their pipes? for some resource will always present itself in such extreme cases. They cannot be always reading tracts, or at prayers. This would degenerate into that lukewarm piety which is always undevout. But we have one class, at any rate, say the theorists, in our power: send the ships to sea without spirits; there are no liquor-shops on the ocean. Follow out the plan, I say; allow no spirits to be freighted home; relieve the sailors from the weight of that sin, the importation of poison, as it is termed. But, generally speaking, who are these theorists? Are they capable of appreciating the feelings of men who have been shut out for months together from all and every species of recreation, and knocking about upon the stormy ocean? Why, there is dear Mistress Frizzlefuss, who makes tea at the sailor's reading-room, having experienced the sad trial of a tipping landsman, now ogles the captains, in the hope of swinging in a sober sailor's hammock. Who can blame dear Mrs. Frizzlefuss?"

There is my friend, Mr. Dewlap, certainly one of the best meaning men in England, living in all the luxurious refinement of intellectual society; *he* looks forward to the evening at the sailor's room, as a grateful change to the uniform tenour of his existence. As evening approaches, he begins to swell with the importance of his mission; listens with impatience to the ladies at the piano, whose duets interrupt the course of his imaginings; trips to and fro over a Brussels carpet, or sips hastily his tea by the fireside of his splendid drawing-room; then, primed and loaded, hurries down to the assembled sinners, and pours forth a whole broadside of invective upon a class of men, whom he believes to be unnaturally depraved, lost, and abandoned. Abstinence, total abstinence, is his darling theme. Hear it, ye farmers, maltsters, brewers, and distillers! shut up the wine-press; root up the vineyards, and send all the ships to China for tea! All cargoes of exhilarating beverage are an abomination, for moderation is unknown in Britain, and her sons must be coerced into temperate habits by annihilating the temptation.

“Now, Mr. Seaward, if my good friend, Ernest Dewlap, Esq., left his glowing comforts to seat himself in a tap-room, it would be shame indeed. But let him take a week's spell in a merchant ship's fore-castle, without a fire, without a table-cloth, tobacco-smoked blankets and wet jackets hanging about his ears, a piece of ship-beef cut tolerably near the horns, and dabbed upon a flinty biscuit, and a hard damp oak locker for his seat, and then say, if a tin can of cold water or water bewitched with sloe-leaves, or mundungo, would add much to the comforts of his portly stomach: or whether an hour or two on shore, by a blazing tap-room fire, and a draught of good English ale, would not be too great a temptation for him to resist. Oh, the trash that I have seen served out as tea and coffee in a merchant ship, to be drunk with bad sugar, Mr. Seaward, and without milk! The good old admiral was right; sailors are on a par with the labouring community, but they are exposed to severer privations, and more than their share of humbug. Let these saints take up the sailor's cross, and ere they have carried it long and far, they will adopt a new text, and remember with gratitude, that the Author and Finisher of their faith, when surrounded by apostolic mariners, delighted in their happiness, and turned their water into wine.

“Let the magistrates do their duty in enforcing the stated hours for public houses, and restraining the panderers to vice. Let sailors' reading-rooms be no longer sectarian and severe, but supplied with amusing books of voyages, as well as religious tracts; not exclusively for sailors, but free to the well-disposed of their equals in society. This would induce an exchange of information and amusement. Sailors have enough of sailors at sea: on shore they like to mix with other men. But above all, let our merchant marine be improved agreeably with many suggestions now made by experienced indi-

viduals, and officered by a class of intelligent, able, and considerate men, showing, by their example, the temporal as well as spiritual advantages of sobriety, industry, and good conduct; and I will bet a bottle of wine against a chest of tea, that our brave mariners will not disgrace their profession as a class of men, or sink below the level of that grade of civilized life, in which it has pleased their merciful Creator to place them."

Jack Wetherall, for that familiar title had been placed before his name by some of the respectable passengers in lieu of that of captain, Jack Wetherall was as fond of a yarn as most sailors are, and after the foregoing harangue was concluded, he turned to me, and said, "My motto, Mr. Seaward, is, 'Not too much of anything—moderation in all things.' Did you ever hear of H.M.S. Hermione, and the fate of her captain, last war, sir?" "Yes, to be sure, and all the world besides." "Well, sir, I will tell you something about one of the ringleaders of that black affair, which entirely arose from *too much* discipline and *too much* drink. It happened, you know, in the year 1797, on the 22nd of September, when Captain Pigot and all his officers, with most part of the marines, were deliberately murdered"—"I believe," said I, interrupting him, "that the surgeon and a master's mate were saved." "Yes, Mr. Seaward, true, to serve as witnesses to bring the wretched delinquents to justice."

"Yet, sir, one of the ringleaders I am now speaking of, eluded the course of justice, and even served in the army and navy afterwards, deserting several times from each service. He was with Sir Ralph Abercrombie in Egypt, and deserted from the 42nd regiment, to which he then belonged; and having entered as a seaman on board a man-of-war, was drafted on board the Victory, and was close by the immortal Nelson when he fell at Trafalgar;—a ringleader of the mutiny in the Hermione, a man whose hands had been steeped in the blood of his own countrymen, committing crimes of the blackest dye, fighting afterwards in the sacred cause of liberty by the side of her greatest hero! What freaks dame Fortune plays! His name was Patrick Walsh, a native of Castlebar in Ireland, and his after-life was such that, had he suffered the fate he deserved, he would have been saved from years of torment in this world. I remember seeing him in 1820, I think an object of perfect horror; the intolerable stings of a tortured conscience dwelling on the deeds of blood in which he had been a too active accomplice, produced a frenzy which neither years nor age could mitigate; he was a confirmed maniac in Bethlehem Hospital. He had been previously in another similar establishment, where he had succeeded in killing two of the inmates. At this time, however, he was not under much restraint, as he was considered better. But it happened that he found amongst some rubbish an old knife, and one part of a pair of scissors. These he concealed carefully till he had ground the knife to a sharp edge; and one Sunday

morning he rushed on a poor sickly fellow-patient, and before he could be prevented, had inflicted wounds of which his victim died on the spot. Well, sir, he was considered so far sane as to be tried at Guilford assizes for the murder, but was acquitted on the ground of insanity. He told the jury, that he so much rejoiced at putting his victim out of the way, that if he could obtain the king's crown, and all the riches of the universe, he would not forego the pleasure of killing him. His vengeance was excited by some dispute on religion! The man, he said, had spoken profanely of the Virgin Mary!

“ But I must tell you some more of the freaks of this extraordinary wretched man, who has signalized himself in living in a state of warfare with the whole world, both before and since he escaped justice. His evil propensity haunted him day and night. By day he was constantly giving way to blasphemous imprecations, and abuse of those about him, naming them according to his gross and revengeful imaginations, among which the term ‘ Spaniard ’ was applied, evincing the recollection of his wanderings about the colony of Laguayra, after the Hermione's affair. His dreams by night were no less dreadful. He would wake and relate murders he had committed in his sleep, with infinite satisfaction, dwelling on the details with all the fury of a demon glaring from his eyes. One night he imagined he had cut the throats of his companions with a sword, and gloried in watching those who lived the longest; and after committing other dreadful absurdities, he is outrageous at seeing them alive the next morning. He roams about stamping and raving all day, with a piece of blanket crammed into his mouth; and as he is tearing it from between his teeth, imagines he is tearing to pieces more victims of his revenge. Suddenly he will stop, where he imagines he sees some persons prostrate before him; when, after giving vent to his imprecations, he jumps and stamps on them, as he supposes, exclaiming, ‘ Die, you rascals; die, you vagabonds!’ with other expressions of revenge, and then he is satisfied and pleased, until another group rises in his imagination, to be served in the same manner. He can hear no one speak without supposing that he is abusing him; and even the ducks in the pond, he imagines, are calling him abusive names, which he in return applies most furiously to them. And this, Mr. Seaward, was the state of Patrick Walsh, a ring-leader of the mutiny of the Hermione, one of the most brutal scenes that ever disgraced human nature—there he was, a hideous specimen of the human savage, deprived of reason, and living under the influence of the most unbounded passions.”

TABLE XXXIII.

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

1 Middleburgh foot = 0.98435202 English foot.

1 English foot = 1.01589653 Middleburgh foot.

Middleburgh or English feet	English feet, and Dec. parts.	Middle- burgh feet, and Dec. parts.	Middleburgh or English feet	English feet, and Dec. parts.	Middle- burgh feet, and Dec. parts.	Middleburgh or English feet	English feet, and Dec. parts.	Middle- burgh feet, and Dec. parts.
1	0.984	1.016	40	39.374	40.636	79	77.764	80.256
2	1.969	2.032	41	40.358	41.652	80	78.748	81.272
3	2.953	3.048	42	41.343	42.668	81	79.733	82.288
4	3.937	4.064	43	42.327	43.684	82	80.717	83.304
5	4.922	5.079	44	43.311	44.699	83	81.701	84.319
6	5.906	6.095	45	44.296	45.715	84	82.686	85.335
7	6.890	7.111	46	45.280	46.731	85	83.670	86.351
8	7.875	8.127	47	46.264	47.747	86	84.654	87.367
9	8.859	9.143	48	47.249	48.763	87	85.639	88.383
10	9.844	10.159	49	48.233	49.779	88	86.623	89.399
11	10.828	11.175	50	49.218	50.795	89	87.607	90.415
12	11.812	12.191	51	50.202	51.811	90	88.592	91.431
13	12.797	13.207	52	51.186	52.827	91	89.576	92.447
14	13.781	14.222	53	52.171	53.843	92	90.560	93.462
15	14.765	15.238	54	53.155	54.858	93	91.545	94.478
16	15.750	16.254	55	54.139	55.874	94	92.529	95.494
17	16.734	17.270	56	55.124	56.890	95	93.513	96.510
18	17.718	18.286	57	56.108	57.906	96	94.498	97.526
19	18.703	19.302	58	57.092	58.922	97	95.482	98.542
20	19.687	20.318	59	58.077	59.938	98	96.466	99.558
21	20.671	21.334	60	59.061	60.954	99	97.451	100.574
22	21.656	22.350	61	60.045	61.970	100	98.435	101.590
23	22.640	23.366	62	61.030	62.986	150	147.653	152.384
24	23.624	24.382	63	62.014	64.001	200	196.870	203.179
25	24.609	25.397	64	62.999	65.017	250	246.088	253.974
26	25.593	26.413	65	63.983	66.033	300	295.306	304.769
27	26.578	27.429	66	64.967	67.049	350	344.523	355.564
28	27.562	28.445	67	65.952	68.065	400	393.741	406.359
29	28.546	29.461	68	66.936	69.081	450	442.958	457.153
30	29.531	30.477	69	67.920	70.097	500	492.176	507.948
31	30.515	31.493	70	68.905	71.113	550	541.394	558.743
32	31.499	32.509	71	69.889	72.129	600	590.611	609.538
33	32.484	33.524	72	70.873	73.145	650	639.829	660.333
34	33.468	34.540	73	71.858	74.160	700	689.046	711.128
35	34.452	35.556	74	72.842	75.176	750	738.264	761.922
36	35.437	36.572	75	73.826	76.192	800	787.482	812.717
37	36.421	37.588	76	74.811	77.208	850	836.699	863.512
38	37.405	38.604	77	75.795	78.224	900	885.917	914.307
39	38.390	39.620	78	76.779	79.240	1000	984.352	1015.897

VOYAGE OF H.M.S. ACTÆON, CAPTAIN THE RIGHT HONOURABLE
LORD EDWARD RUSSELL.

England to Valparaiso.—By A. Eardley Wilmot, R.N.

ON the 18th of March, 1835, Her Majesty's ship Actæon, under the command of Lord Edward Russell, after several unsuccessful attempts to put to sea, occasioned by foul winds and bad weather, sailed from Yarmouth, in the Isle of Wight, for the south American station. In the evening we parted company with the Scylla, going to the West Indies, the Victor for India, and the Pelican for the Mediterranean, which vessels had sailed in company with us. After touching at Plymouth, on the afternoon of the 22nd, we took our final departure from England. A sailor should be proof against all hardships, climate, weather, privation of all kinds, and the feelings of nature, in being separated from family and friends. He may have a wife and children to lament his absence; perhaps an aged mother, whose support he is; and when her greatest difficulties are approaching, he is torn away to brave the world, to meet sickness, and even death, in a foreign land. But he must banish all such reflections; he must steel his heart against the softer feelings of our nature, and take as his motto,

“ D'ye mind me, a seaman should be every inch
All as one as a bit of his ship;
And with her brave the world without offering to flinch
From the moment the anchor's a-trip.”

By the time we hove in sight of the far-famed Peak of Tenerife, we had but a faint remembrance of the happy faces we had left behind. We hove to off the town to communicate with the consul, and in the evening made sail for Rio de Janeiro. The joys, the pleasures, and to many the terrors, of crossing the line, have been full oft related. No ship is exempt from the custom, and the Actæon was hailed by the venerable monarch of the deep, with the usual questions, viz.: the name of the ship? where from, and where bound to? and in the most polite terms possible, he begged to know if there were any on board who had never passed the limits of his dominions before. Lord Edward Russell answered all these questions through his speaking trumpet, with the utmost good-humour; and told his majesty that there were several who never had had the honour of an interview with him, and who consequently were unacquainted with the necessary forms on the occasion, at which his majesty was much pleased, and wished the captain good night; giving him to understand that he might expect him in the morning, and directing him to have everything prepared for his reception. He then vanished, and the splash of a hundred buckets of water, which were ready to greet him, and all those who

were green enough to get too near, and whose interest might be excited to catch a glimpse of the flaming tar-barrel into which he had stepped, and disappeared astern.

Accordingly, early the next morning, a trumpet was heard hailing the ship; the mizen top-sail was laid a-back, and presently a car, drawn by four sea-horses, came on board, in which were Neptune and Amphitrite. They were drawn round the decks, and stopped opposite the captain, who was ready to receive them, and before whom they went through the several ceremonies; such as drinking his health, and long life and happiness to the ship and her inmates. After this, the fun began with shaving and ducking, and buckets of water, and wet swabs were flying about the ship till a late hour. Those who had never crossed the line before were kept under hatches till their time came for *presentation*, on which they were brought up blindfolded from below, and saluted with buckets of water in their faces, by persons stationed for that purpose. After this preparation, they were presented to Neptune, who sat on his throne, on a raised platform in the fore part of the ship enjoying the proceedings. His majesty asks them a question or two, then calls the barber to shave them. This functionary is at hand with his razor and shaving apparatus; the former a very formidable looking affair, and larger than even the barber of Seville's, is made for the purpose, from a piece of an old saw, and the lather a compost formed of the most filthy ingredients. However, it is a penalty that must be paid, and in a man-of-war especially; and the custom, when *well* managed throughout, is decidedly a good one. Neptune, seeing that the barber is ready to operate, puts a final question to his new acquaintance; who, opening his mouth to answer him, receives the contents of the barber's brush; his heels are tripped up at the same time, and the next minute he emerges half drowned from an immense reservoir of water, ready to give his very best assistance in retaliation on others. Such is part of the amusement of crossing the line; and as it is generally a long voyage, it comes very seasonably; for none but those who have actually experienced it know the monotony and ennui of a long sea voyage.

On arriving at Rio de Janeiro, we found H.M.S. Spartiate there, with the flag of Real-admiral Sir G. E. Hamond, Bart., about to sail for England, expecting to be relieved by the Dublin. A French rear-admiral, and an American commodore, were also present. We had left England full of the hopes of seeing much of the Pacific Ocean; and having performed so much of our voyage, our thoughts were more directed to the South Sea Islands than to the attractive scenery of the harbour of Rio, or the dirty city of the Brazils. Every one on board anticipated the voyage with feelings of delight, which were afterwards fully realized.

The only novelty at Rio is the establishment of two small steam-

boats, which ply every half hour between Santa Cruz and the town, and appear to answer very well. They belong to a company of merchants, established about two years and a half, who contemplate also a line of steam-packets to run up and down the coast.

We sailed from Rio on the 16th May, for the River Plate, and anchored at Monte Video on the 28th, and found the change in the climate very perceptible.

On arriving at Buenos Ayres, we found the population divided into sects of Federals and Unitarians, in deadly feud with each other. The national colour of the President, Rosas, who is a Federal, is red, and that of the Unitarian is blue; the consequence is, as Rosas is all powerful, the principal part of the dresses of both sexes is red, while the blue party scarcely dare show their heads.

During our stay in the river, we were in attendance on the British minister, Mr. Hamilton, and conveyed him to Monte Video, where he had to settle some questions relative to the slave trade. From thence we returned with him to Buenos Ayres, and sailed for Rio.

On our arrival at Rio, we found the Dublin had arrived, and that the Spartiate had sailed for England. We were ordered to proceed as soon as possible to Bahia and Pernambuco, which we did, after a refit of ten days. We had a pleasant passage of twenty days, and anchored at Bahia on the 5th of Oct. The town of San Salvador wears a pleasing appearance, more particularly in the summer season. After visiting several minor places on the coast, among others, Maceio, St. Catherine's, &c., we again returned to Rio to prepare for our anticipated voyage round Cape Horn.

On the 31st of May, 1836, we sailed from Rio, and anchored in Port Louis, Berkeley Sound, on the 14th of June. Lieutenant Smith, the governor, came on board before we anchored, and materially assisted the master in piloting the ship up the sound. He formerly was first lieutenant of the Tyne; and when that ship went home, and it became necessary to have some person on the island to take charge of it in the English name, he volunteered his services, and remained there with six seamen. We found him very well pleased with his situation, having built several houses, and cultivated a large piece of ground, in which were growing radishes, onions, and mustard and cress, also several kinds of flowers. The English flag was flying on a staff in front of his house, and an eighteen-pounder cannonade was showing itself in angry defiance to intruders. Lieutenant Smith has accomplished much since he has been on the island, having discovered several excellent harbours and bays, and made several partial surveys. He has found out, by his activity and perseverance, what will grow and thrive upon the land, and sent home a complete statement of its advantages and disadvantages. He has also been of essential service to ships touching there, supplying them with beef, and other necessaries. These islands abound in wild horses and cattle: geese

and ducks are so common, that they are easily killed. Rabbits also are plentiful; and fish, at particular seasons of the year, frequent the coast in great numbers. We thought nothing of bringing home thirty or forty brace of ducks and geese as a common day's sport; indeed, a much greater number would fall to the share of a dexterous shot.

The situation, climate, and resources of the Falkland Islands would render them important to England as a colony; and if Englishmen could be induced to try to settle on them, with the necessary apparatus for cultivating and draining the land, they would find a tenfold harvest in return.

On the 16th we resumed our voyage, with the feeling that enough had not been done at home to give these islands a fair chance of rising into importance. At the latter end of the month we were off Cape Horn, and passed several icebergs. The thermometer then was at 27° of Fahrenheit; and we felt the cold excessively, as we had just left a warm climate. It rained constantly during the passage, and we experienced great difficulty in getting our clothes dry, which, with the cold, added nothing to our comfort.

We had finer weather in the Pacific than the Atlantic, and arrived at Valparaiso on the 24th of July, where we found H.M. ships *Blonde* and *Rover*; the former bearing Commodore Mason's broad pendant. Valparaiso,* or the Vale of Paradise, is situated in a bay at the foot of a hill, protected on the east and west by the jutting land, but exposed to the full force of the north winds which prevail during the winter months. It is the port of St. Jago, the capital of Chili, and the head-quarter of the British squadron. The port is also the principal rendezvous of the French and American men-of-war, each of whom have a commodore's pendant flying in these seas. The high land above the town is 1,260 feet above the sea, and is of a dark red colour, impressing the mind of a stranger that the country is barren and unproductive. But on travelling a little way inland, the delusion gives place to admiration and surprize at the amazing fertility of the soil. The scenery around is also beautiful. The Andes are in the distance, capped with snow, and towering above the clouds, with the immense plains extending for miles, and yielding every species of fruit and vegetables, alternately varied by high hills and mountain scenery. The climate, too, is delicious, uniting with the warmth of a tropical sun, the bracing air of an English spring. All this cannot fail to excite feelings of pleasure and delight; and an Englishman's first exclamation is, "What a pity that these people should have such a country!" The peasants are always civil and obliging to strangers, and make you perfectly welcome to their homely fare, which consists of rice, milk, and calavances. Those who can afford it, are very fond

* Named after the Conde de Valparaiso, a Spanish nobleman.

of a peculiar dish,—a mixture of fowl, potatoes, rice, and greens,—all of which are boiled up together, and form an excellent repast. The manners, customs, and dress of the people in Chili and Peru are precisely the same as at Buenos Ayres, with the exception that the women do not wear any large combs. Riding is their principal amusement, and the lasso and knife their only weapons. The government consists of a president and council, and they talk a great deal about freedom and liberty. Since the decline of the Spanish power, and the nominal independence of the different republics that once composed it, there has been nothing but misery and oppression. Blessed by nature with every advantage of situation and climate, that make them at once capable of becoming the theatre of a vast commercial intercourse with the other nations of the world, and of enriching themselves by the exportation of the valuable and important productions of their soil; instead of improving on these advantages, instead of establishing themselves by industry and activity as a free and commercial people, they have sunk, and are still sinking into sluggishness and ruin.

Now that the first fruits of their dearly-earned conquest have passed away, and the glory of the revolution is forgotten and obscured in the passing events of the present day, the people have suffered themselves to become the children of idleness and vice, and look on, without shame and without remorse, on the opportunities they have thus foolishly lost. Their rulers are becoming daily more despotic, and are gradually curtailing republican freedom. All these innovations they calmly look upon without one spark of patriot feeling; and when too late, they will open their eyes to the reign of terror around them.

The merchants of Chili chiefly reside at Valparaiso, while those who are connected with the mines are at St. Jago. We have a great deal of trade here, but the greater part is carried on by Americans. We had no sooner arrived, than we were ordered to prepare for the South Sea Islands. We received six months' provisions, and every one was busy in making preparations for the voyage. Coloured cloths, ornaments, such as ear-rings, bracelets, and rings, were eagerly provided. Gunpowder, tobacco, and knives were also in requisition; and until the day of our departure all was activity, anxiety and anticipation.

COLLIER'S BOILERS.

MR. EDITOR,—The article on "Collier's Boilers" which, as appeared in the last number of your valuable magazine, may be considered one of the many, and frequent instances where a writer of no ordinary talent can find *time*, even among a "multiplicity of engagements," to sit down deliberately, and under the cloak of honesty and disinterested-

ness, ingenuously lay before the public, statements, which indeed may have some object to serve, but which rest on no permanent foundation, while pompously supported by the opinions, surmises, and assumptions, of—nobody knows who; and opposing the testimonials of individuals whose names are well known in the scientific world, in a manner highly disreputable to fair and useful argument. Happily, however, for the public, and still more for those most deeply concerned, that kind declamation, baneful as it may be deemed, provokes a discussion by which the former arrives at the truth, and the latter in the end obtains a triumphant victory over those whose interest it may have been to employ an anonymous writer to depreciate the value and the advantages which my invention may be found to possess over their own, or to militate against their plans and prospects. Their statements, by appearing in your pages, may indeed serve their ends for a month, but the re-action, which a repetition of their worthless assertions must produce, when overwhelmed by undeniable statements of the actual facts, from personal examination and experiment, must carry with them that sort of conviction which we trust will eventually be productive of universal benefit.

Your correspondent *Hiram*, who gives nothing from personal knowledge, commences his attack on the first experiment which was made upon Collier's Boilers, in 1834, on board her Majesty's ship *Meteor*, which was the first time they were (he does not say how or why) brought under his notice. He gives an erroneous description of these boilers on the very outset, although taken from a drawing, which he surely could not have examined; but as this *mistake* has already been exposed by yourself in an editorial note, we need not take up more of your time with it, hoping that, as *Hiram* had never seen the boilers themselves, this error may by the charitable be imputed to consummate ignorance, and not to any wilful attempt at imposition; it may, however, be added, that it is in the weight of water which he has nearly doubled, as well as in the construction of the funnel, that he has been most erroneous. The contempt with which he has treated the names of the men employed, of Professor Brande and Dr. Ritchie, is, indeed, a specimen of argument which every writer must treat with indignation; and with regard to Mr. Manby, who we know to be a talented as well as a highly educated engineer of the first class, we shall be silent, well knowing, if he thinks it worth his while to reply to the laboured and inconclusive deductions and remarks which all depend on a statement he never made, that he can do so most effectually; we shall, therefore, proceed to the trial with the *Firebrand*, which vessel he assumes to have been loaded, when the fact was that she was kept as a yacht, and always in the best trim.

The comparative speed of both her and the *Meteor*, were previously known when the latter had her *old* boilers, and the object was

now to try, if with Collier's boilers, which only occupied half the space and consumed half the fuel, she maintained a superiority over the Firebrand. Nothing could be more satisfactory than this trial; and the public may rest assured, that the Lords of the Admiralty are not so silly as Hiram seems to imagine them, as to make such a trial without a due consideration to the displacement, and every other relative circumstance; and we may justly add, that whether her velocity was ten knots, or ten statute miles, is of not the smallest importance, the trial was relative and triumphantly in favour of the Meteor. If your correspondent says, "I shall omit to notice how she reached Lisbon, or how she got back to Falmouth," which he calls "of little importance," although it was the only good trial that was made; as this trial was completely successful we shall only say the omission has been made for "obvious reasons;" but we must beg leave to remove the "impression" on his mind, that no satisfactory result took place by documentary proof, Mr. Collier having in his possession the Admiralty letter of approbation; neither is he correct with respect to the *cost* and *re-purchase* of the boilers. Although it has been published why the boilers were removed from the Meteor, and returned to the patentee, Mr. Hiram pleads ignorance, and we are, therefore, bound to tell him it was simply this:—one of the chambers was damaged either by accident or *design*, after Mr. Collier left the ship, and it was impossible to repair it without great detention. The boilers were, therefore, taken out and returned, although it was the wish of the Admiralty that they should be continued: but this damage has been of great moment to Mr. Collier, inasmuch as it pointed out a method of preventing the *possibility* of even an *ill-disposed* person to injure the chambers; and also a method of replacing the chambers in a very short time if damaged. The commander of the Meteor had given in his report of the voyage to Lisbon previous to the accident, and as he did not know how the chambers were damaged, any further report was unnecessary; moreover, it was deemed extraordinary that this accident happened to the boilers very soon after they were out of the superintendence of Mr. Collier, and without throwing the blame individually on any one, we may add, it was but too evident that *foul play* had been used: and had that been suspected before the boilers were returned an investigation ought and would have taken place.

Having disposed of the "cavils" in the five first pages, we come to the Commercial Company's steamer, Glasgow, which is, "unfortunately," a recent case with which we are completely acquainted, from having actually made the first passage in that ship to Southampton, for the express purpose of putting to a fair test the merits of Mr. Collier's boiler, without having the smallest interest in their success. Mr. Hiram asks, "Were they not a failure?" We answer, from personal knowledge, "Decidedly not."—"Are they not now removed to

make way for new ones of improved construction?"—"Decidedly not."—They are removed to make way for others of the *same construction*, but of a proper size for the engines, which are of 112 instead of 100 horse power, as was supposed; and we are of opinion that the boilers, by supplying sufficient steam to engines of 12 horse power above their calculation, to propel the ship faster than (by the captain's account) she had gone before, did wonders. But, in a vessel that had to compete with others, it was natural that the Commercial Company should wish their steamer to be as complete as possible, and consequently to put boilers into her of the proper size; the new boilers will no doubt have the improvements already mentioned, and I am quite sure that Mr. Hiram will be very welcome to inspect them. Since, indeed, he had not *time* to examine the boilers himself, it is a pity he did not think of sending down some poor boy, with a measuring tape to the wharf where he might (as we did) have actually obtained the precise measurement of both the old and the new, as they lay within a few yards of each other: he would have saved himself all the trouble of his calculations, and have found to his entire conviction, that Collier's boilers were ninety-six feet smaller than one-half the size of the former boilers; and of course, all his calculations founded on the generating surface were fallacious, from his ignorance of the internal construction.

We shall now proceed to inform you, that after having made several very satisfactory experiments at the manufactory, it was determined to put the boilers to the test, on board the *City of Glasgow*, which was said to have engines of 100 horse power, but which having cylinders of $41\frac{3}{8}$ inches diameter, with a three feet six inch stroke, were certainly of 112 horse power, being twelve or one-ninth more than the boiler was calculated to supply. We made our passage to Southampton, in twenty-nine hours, under the most disadvantageous circumstances, the snow falling on the steam-chest, the casing wet, the engine newly repaired, and the vessel *without* copper, and deeply laden with iron and sugar; notwithstanding which, she went eight miles an hour when calm, which the captain said was more than she ever went before, even with a strong fair wind, and she made her passage in as short a time as she had ever done. It is true that Mr. Collier not having sufficiently calculated on the tremendous draft, a perfection he could not at first know to the full extent that his boilers possessed, had not constructed the lower part of the funnel so as to take full advantage of that circumstance; but the fact has not escaped him in the construction of his new boilers, although it appears to have escaped Hiram, though manifestly delineated in the plate from which he says he made all his deductions. During the voyage, Mr. Blaxland, the inspecting engineer to the Company, the captain, and three passengers, all declared in favour of the boiler, and were unanimously of opinion that the boilers had done all that was expected,—more

than any other boilers had ever done ; and that if the boilers had been in proportion to the engines, the vessel would have been, and no doubt will be, far better than was considered possible. We have no hesitation in testifying, from our actual observations, we found that besides the boilers being ninety-six feet less than one-half the size, they used one-half less fuel than the former ones ; and that the trial to Southampton, instead of being considered a failure, was a decided proof of the superiority of Collier's boilers over the former ones of the old construction ; and that the assertions to the contrary are totally without foundation.

Coming now to the jacket or casing, which encloses the boiler ; we never heard that Mr. Collier claimed the casing itself as his own invention—but the non-conducting substance, *between* the casing and the boiler, being the most effectual ever tried, is a decided improvement, and is consequently a great saving in fuel as well as adding to the safety of the ship and comfort of all on board. But the attack on the "breathing pipe" is, of all others, the most absurd, as it is compared to a damper, to which it has about as much resemblance as an apple has to an oyster !—the functions or the office each has to perform being as widely different, while the former is acted upon by any one, the latter is beyond the control of every one ; and we have no hesitation in saying, that whether original or not, it is one of the most important inventions that have yet been applied to the steam-boiler for being so effectual in preventing explosion, and so completely unobnoxious to accident. Your correspondent is no less incorrect in his assertion, that the circulation of the water cannot be kept up properly ; to this part of the experiment, the writer of this paid particular attention. The boiler was not blown off for five hours for the purpose of ascertaining this operation, and on examination it was found that they were perfectly clean, and that the salt had been carried by the circulation to the very spot it ought to be, namely, the vicinity of the blow-off cock ; and we have no hesitation in saying that the supposition of a want of circulation, is totally without foundation. The rest of Hiram's remarks about the funnel, comparing it to a beacon to prevent collision—and what he says about the whistle being *wretched jokes*,—you will excuse my taking further notice of the remainder, having already stated facts which we trust the readers of the *Nautical* will consider decisive, and render it unnecessary to follow your correspondent any further ; we shall, therefore, only add an observation made by that experienced and gallant officer, Admiral Sir Thomas Hardy, who said,—“ This is a subject, Mr. Collier, which has become of the greatest importance to the public : you have performed nine points out of ten of all you have promised, and that too in a first and single trial. What would have been the consequence if the great Watt had been allowed a single trial, instead of fourteen years' experimenting to complete one engine ? ” We may safely add, that if Sir Thomas

could now see the improvements which have taken place since the first trial, he would have admitted that the other point had been obtained. We are glad to find that your correspondent means to investigate the results of the new improved boiler, which has just been put on board the City of Glasgow; we hope he will have *time*, personally, to visit that ship, where we are sure he will be perfectly welcome; and we rely with confidence on his candour, as well as his zeal, for a fair and full representation of facts which are of such vast importance to the nation.

I am, sir, your obedient servant,

A. B.

(NOTE.)	By Mr. Collier's account, the generating surface is ...	1032·6	feet.
	By Hiram's ditto of boilers and chambers	1334·0	„
	Error	301·6	„
	Collier's account of the grate surface	36·8	„
	Hiram's ...ditto.....ditto.....	79·4	„
	Error	32·8	„
	Total error in Hiram's account	334·4	„

[The foregoing reply to Hiram's remarks in our last, appears as it was received, for obvious reasons: at the same time it must be observed, that the term "*we*," frequently applied, does not include the Editor of this journal either in this or in the article to which it refers.—Ed. N.M.]

Naval Chronicle.

MONTHLY GOSSIP.—So, Mr. Editor, we really are to be converted into a nation of steamers after all! and the predictions of the poets of former days are really to be realized. While highways and byways are giving way to railways, the wooden walls of Old England are becoming steam-vessels, outdoing old Jonathan Hull's picture of steaming a-line-of-battle ship. The day is not far off, when it will be as old fashioned to cross the Atlantic under drapery, as it would be to go in search of the north-west passage in pinks and pinnaces. The Sirius is off again, and so is the Great Western; the former on the 26th of May, and the latter on the 2nd of June, for Jonathan's land. Now, Mr. Editor, I am not one of those who think that any harm will come to sailors from these tinder-boxes. Not that I am going to set about proving it by a long disquisition on pneumatics or rheumatics, both of which abound in plenty, but leaving it to *time*, that *rerum imperator*, I will congratulate the spirited company of gentlemen Bristolians, and their zealous, clever, and gallant naval officer, Lieut. C. Claxton, the managing director, on the triumph of the "practical man" in the recent steam voyage across the Atlantic. It is an achievement, sir, which the navy should be proud of, and an era in steam navigation, which will be recorded in history as an

instance of British skill, enterprize, and perseverance, furnished by the ancient and renowned city of "Brigstowe." The enthusiasm of our transatlantic brethren, and the humorous jokes of the press, are interesting and amusing. "Those Britishers," they say, "whip all the world, I guess, but Jonathan whips the Britishers;" meaning, I suppose, that they go a-head faster than we do: but with all their boasted steam-boat speed, we have shown them how to cross the Atlantic.

A voyage across the Atlantic at some seasons will be an anxious one, for there are few tracks over the "watery waste" that present more formidable perils to the mariner, than that between this country and America. Icebergs, ice-drifts, fogs, north-west gales, and their huge seas. As for *vigias*, why they may, or may not exist; yet it may be as well to include them, as they have each a "habitat" and a name. By the way who knows but that the warm-hearted worthy seaman, Lieut. Church, closed his valuable life on one of these "bug-bears" to seamen, as some of the care-for-nothing, dash-along, helter-skelter kind of fellows are pleased to call them. The steady, the prudent, the common-sense seaman, however, will keep an eye towards their *locale* as he journeys on, and will not forget that the line of submarine communication between the two Boreal volcanic furnaces will have to be crossed in this track; that to-day a danger may be hove-up, and to-morrow it may disappear. Again, there is the tropical hurricane, that most wonderful of all meteors, occasionally to cross this track, irresistibly sweeping all before it, and extending to the very shores of Europe: a phenomenon, of all the oceanic kind the most extraordinary, and, until lately, one which puzzled us exceedingly. But the Americans enlightened us upon it. There are enough oceanic dangers which old Neptune has in store for the Atlantic steamers. But batten down fore-and-aft, my lads; look to your pump-gear, war small coals, for they choke the luff of your pumps; keep a bright look-out, and you may stick your spoon in the wall. As for your glacial enemies, treat them as you would a clown, or the man of Vermont, who, every time he sneezes, turns a somerset—they are fond of somersets you'll find to your cost, if you borrow upon them, so keep clear of their heels—your cotton bags will make good fenders, if you should find yourself in an ice-field of some three or four hundred miles stretch: they will take care of your paddle-boxes. Your wheels should have been amidships; when you suspend your pressure within, you will find plenty without. There's no such principle as repulsion in icy bodies: it is all attraction. Clap a good thermometer in the fore-part of your foremast, and look to it well. A loud gong in a fog is a barbarous sound, but how much more barbarous would be the gurgling of salt-water in your ears a fathom or two below the surface. What is the clanking of plates of steel or brass compared with the hollow sound of the last lingering bubble of air, the final note of all earthly sounds, the latest bodily sensation of the drowning mortal, the snap of the string of life, ere his spirit soars aloft, and his inanimate clay sinks to depths below. What is the sound of a gong to this? Better to endure a Babel of noise, than be run down by a rival New York liner! Atlantic steamers, keep a *good look-out*, and leave the result to "the cherub who sits up aloft, keeping watch for the life of poor Jack." As to the mighty

mysterious ocean-river, its path is pretty well known. The minor currents, Miss Steam shows her heel to, *a la* Point Beach. Ordinary gales and waves are neither a suitable match for fire and water. They woo and moan alternately; they dance in vain at conquest. The matchless queen of the ocean has a heart of adamant, too firm to yield to airs, or *pressing* embraces, whether soft or impetuous in their voice or action. Yet she often "stoops to conquer," and like a passionate, warm-hearted haughty dame of flesh and blood, nought can subdue her proud spirit, save oppression highly wrought; then, indeed, the whole volume of her sensibilities being concentrated, with one mighty effort bursts her effervescing bosom asunder, and she sinks amid a shower of scalding tears, never to rise again! But let not the enterprising heart be dismayed; the same perils attend sailing-vessels as they do steamers, and the vigilance and ability of the commander are the first safeguards against them. Again, I say to them, *keep a bright look-out a-head.*

And now, Mr. Editor, to other matters. You will think otherwise that I am for doing nothing but running about the ocean, seeking bugbears for steamers, which they will find out all in good time, and, let us hope, learn how to avoid. I omitted to tell you in my last that Mr. H. Dundas Morrison, a surgeon of the royal navy, has lately died, and left the sum of £18,000 (after the life interest of two legatees) to the Plymouth, Devonport, and Stonehouse Hospital, on the condition that a ward be established, and called "The Melville Ward." Mr. Dundas, it is said, has performed this good deed out of pure gratitude for the favours he has received from Lord Melville, who presided so long over the Admiralty.

The grand operation of blowing the wreck of the William from her nest in the bed of the river of the metropolis, has afforded a good piece of fun for the cockneys; and I am happy to tell you, that owing to the very judicious arrangements for dislodging her, by the explosion of 2,500 lbs. of gunpowder, and the excellent precautions of Colonel Pasley, to whom the affair was entrusted, the William has been shattered to atoms, and no longer lies accumulating a bank of mud and sand about her. The sight was magnificent in the extreme. The cylinder, containing the powder, was well secured against the western side of the brig, and on the afternoon of the 28th of May, a little after high-water, when the ebb-tide had just sufficient strength to keep the cylinder against the side of the vessel, the fuze was lighted. The effect was grand: an immense column of water was thrown up, above a hundred feet into the air, carrying with it coal, planks, timbers, masts, and rigging, in fact, everything moveable, which fell scattered in all directions. The business was complete; no two pieces of the brig could remain together, and the whole *went off* without accident of any kind, the shock being felt only on shore at Gravesend, Northfleet, and its neighbourhood. Ben says the river has seen "many a breeze before, but never such a blow!" However, father Thames was to receive another *blow*, in another similar operation, and the cure will at length become a fashionable sort of recipe for dislodging those excrescences which occasionally appear in the course of time.

The schooner Glamorgan, lying sunk in Gravesend reach, with five fathoms of water over, was dislodged in the same manner by the Colonel, with a cylinder of 2,500 lbs. of powder, on the 5th of

June, and the explosion produced a cone of water, bearing ample proof of whence it came. This vessel had about forty-five feet water over her, and the brig William about fifty-eight. The Apollo and Waterwitch, sunk last winter, are undergoing the more peaceful operations of Capt. Bush, who has been for some time engaged in lifting these vessels, with his apparatus of air-tight cones, &c., and who, I believe, has succeeded in landing some of their materials at Woolwich. It is to be hoped, that Captain Bush will not be a loser by his proceedings, but every one agrees that he has had more than ordinary difficulties to surmount, besides the annoyance of his apparatus being wantonly run foul of and destroyed.

So much for metropolitan aquatics; now for other operations in the way of invading old Neptune's real dominions of salt-water, to recover lost property. In the neighbourhood of Portsmouth, the old-fashioned and surest way of lifting a sunken vessel, has been exemplified by Mr. Sadler, the master-attendant of the dock-yard, in recovering the lost schooner Pincher, lost off the Owers, and alluded to by you in a former number, as having sunk on the 6th of March, off the Owers. Mr. Sadler started from Portsmouth on this service on the 31st of May, and with two dock-yard vessels, and a lighter, accompanied by Mr. A. Kennedy, mate of the Britannia, with fifty hands. By the next day, Mr. Sadler had succeeded in lifting her, and moving her about a mile in-shore, but something giving way, down she went again. However, on the Monday following, he again weighed her, and towed her into the Park, in smooth water, where she was bailed out, and on Tuesday she was towed into Portsmouth harbour by the Messenger. The scene presented between decks may be better conceived than described. The bodies of nine men and a boy were discovered, one in a hammock, but all with clothes on, presenting a shocking and disgusting spectacle. An inquest was held on them, and they were buried at Haslar. The only officers found were the assistant-surgeon and clerk, and these could only be recognized by their uniform buttons! the flesh, where exposed, having been eaten by fish. The Pincher has since been taken into the basin, and everything taken out of her, and placed in safety in the dockyard. Everything loose had been washed away, but everything lashed is safe. She was found with her sails set, but so much washed away by the sea, as to be useless. The sheets were found belayed, and it is supposed her hatches were open. Her lower-masts and bowsprit are not injured, and she appears to have received no injury in her hull, but her copper a good deal rubbed, and a vast deal of mud had found its way into her. It is stated, that the scene of horror she presented, has not prevented plunder going forward, as there was some money known to be on board, which has not been found. Let us hope, Mr. Editor, this will be cleared up. It is ascertained that there were thirty-one persons on board, including officers, when she capsized.

So the burnings and blowings-up of steamers are not confined to John Bull and brother Jonathan: as for this fellow, he is a most incorrigible dog at it; nothing short of blowing up half the States will satisfy him. But that unfortunate Hull vessel, the Victoria, has been repeating her vagaries in the river again, bursting her boiler, and dealing death and destruction all around her. It is high time that some measures were adopted to put a stop to this destruction of the lives of British subjects, or we shall never be safe.

It was the very same boiler that burst in March last, on board the same vessel, and which *has* been repaired since, and has again burst, *as predicted*, destroying six lives, (and uncertain it is how many more,) spreading dismay and terror around. There is something blacker in the affair than mere coal-dust and ashes mixed with steam, depend on it, Mr. Editor, when scientific men turn their backs on these things, and an engineer of celebrity washes his hands clear of it, and says, the blood shall not be on my head. However, a jury are met to investigate the circumstances which have led to the catastrophe; and it is said that scientific men have been summoned to *give their opinion of the construction of the boiler*. Let us hope they will speak out, and do their part towards abating the nuisance.

The fashion, I see, has reached the St. Petersburg and Lubeck Company. The Nicolai I., on her voyage to the latter place, caught fire in her engine-room at eleven at night, and but for the good management of Capt. Stahl, her commander, every soul would have perished. He ran her on shore at Kluz, and out of thirty-three men and one hundred and thirty-two passengers, saved all but five: they say she is insured in London!

But in the way of accidents, I have one or two to tell you of, nearer home, and the first attended with loss of life. It appears that her Majesty's steamer Meteor, going from Hamoaze into Plymouth Sound, after receiving some marines on board at the transporting buoy abreast of the Royal Adelaide, in passing her, ran foul of the flag-ship, the steamer's fore-lift and top-sail sheet catching the Adelaide's spanker-boom, and dragging the jaws from the saddle. The consequence was, that the boom fell to the deck, and crushed the officer of the watch, Mr. Thomas Lewis, and a quarter-master, named John Jones; the latter of whom died on the spot, and the former the same day at the hospital. It was one of those unfortunate accidents which will happen in spite of us sometimes, and which would have been prevented by the slightest difference in the strength of the tide or a foot or two difference in the position of the vessel; but there is often less even than that between life and death, and a useful lesson of experience has often to be learnt when that experience is wanted, as it seems to have been in this case.

The coroner's jury on the bodies have delivered the following verdict: that "Lieut. R. Pritchard, commanding the Meteor steam-vessel, and having on board a Government pilot, duly authorized to take charge of her and convey her across the river, *did unnecessarily, injudiciously, and improperly refuse to allow the said John Winnicot to take charge of the said steamer*; and that Lieut. Pritchard, in so ordering the said steamer across the river under the stern of the Royal Adelaide, ordered a course less direct and safe than another course recommended and pointed out by the pilot, before the steamer got foul of the Adelaide." Such was the verdict of the coroner's jury, upon which Lieut. Pritchard has published a letter, *denying* it in the terms expressed, asserting that *the whole is untrue*; that the said John Winnicot had charge of the Meteor at the time, and directed her across the river; and that *after the accident* had happened, it was that he took the management from the pilot, with his entire concurrence, as best knowing how to manage her, the pilot, directing how he wished her to go. Now, all this Lieut. Pritchard has asserted, and supported by witness on oath; therefore, it will be

as well to leave it for the consideration of the gentlemen, who, with the coroner, formed the jury that sat on the inquest. Either the pilot had, or had not, charge of the vessel; and it is very clear that there is a great mistake somewhere. Perhaps I may tell you more of this affair in my next. In the meantime, it is well known that Lieut. Pritchard's professional, as well as private character, is above all praise.

The other accident to which I alluded, had likewise nearly terminated fatally, by an officer of H.M.S. Rainbow, (Lieut. Cooper,) having directed a sentry of that ship at Spithead to fire into a waterman's boat, who would not obey orders, and persisted in endeavouring to smuggle spirits into the ship. The Rainbow had just arrived from a four years' service on the North American station; and every officer knows the difficulty of keeping a crew from getting liquor into the ship, when they have so much pay due, and its consequences are equally well known. This waterman (Faulknor) repeatedly endeavoured to get alongside, and was as repeatedly warned off, and assured that if he persisted, he would be fired on. By way of intimidation, Lieut. Cooper ordered the sentry to load with ball in the waterman's hearing, and privately intimated to him to break off the ball, which the sentry did. The waterman hauled off, and all was right; but soon after, he was at it again, and the sentry was told to fire, which he did, and *wounded* the waterman, having in the interim loaded with ball. Such are the facts of the case which has given rise to much ill-feeling, and while the man remained in danger, matters wore a serious aspect. As it is, there will be work for some of the gentlemen of the long robe, the sentinel having been committed for trial. Officers in such situations have much to contend with, and it must be allowed, that to a ship in good discipline, there is nothing more galling to their feelings, than to see their orders set at defiance by such worthless fellows. It is said, that the usual delay in paying her Majesty's ships off on coming home after a long period of service, will, in future, be avoided, and the experiment has been made on the Racer, just arrived, from the West Indies. Certain it is, that much drunkenness and insubordination, the ever-accompanying effects of money in a sailor's pocket, will be prevented thereby. It has been proposed to stop all leave on such occasions; but how will that stop liquor from finding its way on board. Talking of ships coming home, don't let me omit to tell you that Vice-Admiral Sir T. B. Capel arrived from his command in the East Indies at Portsmouth, on the 30th of May, with his flag in the Winchester; and Vice-admiral Sir Patrick Campbell, from his station at the Cape of Good Hope, arrived there on the 29th of last month, with his flag in the Thalia; the former having been relieved by Vice-Adm. Sir F. Maitland, and the latter by Rear-Admiral the Hon. G. Elliott, in the Melville.

Talking of naval matters, they say, that her Majesty's yacht, the Royal George, has been returned to her moorings in Portsmouth harbour, from having been docked, to be re-gilded and decorated for her Majesty's reception. On the 1st of July, it is said, she will proceed to Brighton. You know Lord Adolphus Fitzclarence commands her.

I perceive her Majesty heading the list of subscribers to the Nelson monument with the sum of 500*l.* The subscription, I see, goes on bravely. The sum of 30,000*l.* has been anticipated; and, I think,

appearances promise that about a third of the sum is subscribed already. A subscription for an equestrian statue of the Duke of Wellington, by Wyatt, I see, is going forward at the *same time*—a circumstance rather to be regretted than otherwise.

So the annual general meeting of the friends and supporters of the Royal Naval School at Camberwell has taken place since I last wrote to you, and there has been some wondering there that that establishment does not receive more support from the public! Now, granting the justness of the observations of the gallant admiral, Sir George Cockburn, who presided on the occasion, with regard to the benefit the country derives from the education of the sons of naval officers, would it not be as well that those naval officers themselves set a better example in patronizing the school, more than it appears they do? The school, be it remembered, receives only the sons of naval officers, thus excluding the public generally from any benefit, as far as education is concerned. Sir George Cockburn is reported to have said at this meeting:—"There was one circumstance connected with the welfare of the institution to which he was particularly anxious to direct their attention; he meant the apathy which unfortunately prevailed among the public to the claims which this institution had upon their gratitude.—(Hear.) For when he reflected upon the fact that it was owing to the gallant services of our naval officers, (many of whose sons were now in need of such support as the Royal Naval School afforded,) that the enemies of this happy country were kept from its shores from the year 1793 to 1820;—(Hear, hear,)—when, he said, he reflected that it was owing to their services that this happy country enjoyed a state of comparative quiet, tranquillity, and comfort during a period when every other country in Europe was exposed to the horrors of contending armies upon their soil, and to miseries of every description;—(Hear,)—when he considered, too, that not only had the commerce of the country been protected, but increased, under the vigilant exertions of our navy—(hear)—that no flag but that of Great Britain floated on the seas, and that our merchants enriched themselves through the exertions of our navy:—he said, when he reflected upon these things, it did astonish him to find, that out of seven hundred subscribers, there should be found but thirteen civilians—(Hear, hear.)"

Whether the gallant admiral's words are reported correctly, or not, I will not pretend to say, but, if some of his hearers, instead of calling out "hear," had had recourse to a little arithmetic, they would find, by a list of subscribers and supporters of the Royal Naval School, attached with the secretary's name to it, to the navy list for January last, that the number of those supporters and subscribers stands as follows:—

Civilians	-	-	86			
Admirals	-	-	75	-	1	- 205
Captains	-	-	162	-	4	- 689
Commanders	-	-	141	-	1	- 809
Lieutenants	-	-	291	-	18	- 2913
Masters	-	-	23	-	3	- 439
Physicians	-	-	3	-	0	- 10
Surgeons	-	-	43	-	3	- 648
Pursers	-	-	67	-	1	- 570
Chaplains	-	-	6	-	0	- 67
Mar. officers	-	-	29	-	3	- 98

The first column of figures shows the number of subscribers to the school in each rank ; the next shows the number of officers' widows (subscribers) of the same rank ; and the next, the whole number of officers of that rank on the navy list, by which we arrive at the adjacent fraction, showing the proportion of subscribers to the naval school in each rank. I wish, Mr. Editor, that the secretary's list of January last had enabled me to make a better report ; but figures are stubborn things when called into use, and they show that about a seventh part of the officers of the royal navy (giving them their widows to boot) are subscribers to their own school ; and that of the whole number of subscribers, about a tenth part *are civilians*, being expressly stated as such at the head of the list ! Now I am far from wishing to say anything in disparagement either of the establishment in question, or that noble service, which, it is well known, is hard enough dealt with. I am glad to see it advocated so well both by the gallant president, and his worthy supporter, Sir Isaac Coffin, than whom no one could have more exerted himself than he has done, as well as Admiral Sir Edward Codrington, in its behalf. But I really think, Mr. Editor, that the appeal here made to the public might be very properly answered by that same public to this effect :—"All you say in favour and in recommendation of your establishment, is, no doubt, very true ; but show us first that you are not like the waggoner calling out to Hercules ; show us that you assist yourselves, and then we will listen to you : besides, a tenth part of your supporters belong to us, the public." This, I think, would be a fair answer ; and what would the other six-sevenths of the navy say to it ? What they ought to do, is very clear. There is a curious increase in the proportion of the wealthier ranks of the service in the above calculation which is worthy of remark.

I told you in my last of the return of Sir John Herschel to England from the Cape. There have been great doings among our *savans* his countrymen since then ; no less than a dinner, to which four hundred sat down, and the presentation to Sir John of a piece of plate, to celebrate the return of this excellent man. I wish you could find room for all the pretty sayings and doings on the occasion of this event, which took place on the 15th of June, at one of the great London taverns. His Royal Highness the Duke of Sussex, the President of the Royal Society, acquitted himself in the chair with that good tact, ease, and condescension, for which his Royal Highness is so much esteemed ; and there were present all the *elite* in science which the country could produce. The day, whether accidentally or otherwise, was that on which Sir John's father, had he been alive, would have completed his centenary ; a feature not lost by his Royal Highness. I hope you will treat your readers, Mr. Editor, with the two principal speeches made on the occasion ;* that of his Royal Highness on presenting the vase, and that of Sir John on receiving it. Sir John, it appears, is for reforming the constellations, while others are thinking of reform elsewhere. It is gratifying, however, to find a noble Duke † has offered to assist Sir John in publishing the valuable collections which he has been making, in such a manner that could not

* We are as desirous as Argus to do so ; and shall certainly endeavour to make room for them.—Ed. N. M.

† Northumberland.

be refused; the result of which will be, that they will appear in an *attainable* form. The unassuming natural manner in which Sir John received the proffered honours, and the simple language in which he expressed himself in return, bespoke the man who had learned that great lesson, so difficult to be attained, but which must be known before any one can be really great—

“LEARN THYSELF.”

There was no ostentatious manner, no pompous declamation, in “our distinguished guest,” who received the cordial greeting of “the brightest ornaments of the British empire,” as the Royal President so happily expressed it, on that gratifying occasion. Although acknowledged the greatest, he made himself as the least of them; he had done *nothing* in his estimation, (we shall see what that nothing is;) and as a truly great man, he stood amidst the learned throng, admiring and admired; for well he knew that

“An honest man’s the noblest work of God.”

But I must leave this, or you will say I am forgetting my *nauticals*.

But now that we are on the subject of “honour to whom honour,” I hear a rumour afloat about a piece of plate to Sir Edw. Codrington, as a testimony of the high estimation in which his character is held by naval officers. I hope to have more to tell you of about this. Did you know that a gold medal was presented last year to Lieutenant Keys, R.N., through the Lords of the Admiralty, by the French Government, for services rendered to French vessels and their crews wrecked in December, 1830, on the coast of Devonshire. The record of a good deed is always worth preserving, however long gone by. I see that the services of Lieutenant P. Stark, R.N., in saving the crews of vessels wrecked on the banks of the Tay, have been also rewarded by a piece of plate, presented to him at a dinner given on the occasion. The article consisted of a salver, containing one hundred sovereigns, presented by the inhabitants of Dundee and Perth, as a mark of respect for his character, and admiration of his intrepid and meritorious conduct in rendering prompt assistance to vessels in distress, and saving the lives of shipwrecked mariners. This is gratifying to all parties; and let us hope that on future occasions the hint will be taken elsewhere. Empty praise is but a cold and unsubstantial acknowledgment of the daring deeds of these gallant fellows, who risk their lives at all hours to save their fellow-creatures, and accompanied by some useful article, however trifling, would be so much more worth having; besides, it would mark the deed, and the gift would become an heir-loom.

Another iron-steamer, I perceive, has been launched at Liverpool, by Mr. Laird, called the Glow-worm! (no bad name;) said to be intended as a yacht for Thomas Smith, Esq. She is a handsome vessel, as strong as *iron* can make her, and 160 feet long, intended to draw five feet six inches water, 400 tons. She is going to Glasgow to Mr. Robert Napier, for her engines. By the way, the British Queen, which I told you in my last, was going to that gentleman for the same purpose, is *not* gone yet. A new brig, I see, called the Pilot, of sixteen guns, is just launched at Plymouth. I am sorry to tell you that sickness has been going on at Ascension, where Captain

Bate, R.N., and several of his people have fallen victims to a fever which has broken out there. Captain Bate has done much for Ascension, but I believe that the place has been puffed into a character for affording supplies which it by no means deserves.

The Military Commission, I perceive, are calling for returns of the services of army and navy officers, with a view to consider on a system of retirement; and as these returns must be of a voluminous nature, and the subject one which will require considerable attention, it is expected that a twelvemonth will elapse before they make their report. So much for that parliamentary measure. I perceive that another parliamentary affair, proposed by Lord Ingestrie, in the House of Commons, was counted out the other day. The Noble Lord commenced moving for a long string of returns relating to that interminable subject, naval architecture, bearing principally on the noble works of the present surveyor of the navy; and by the time he got to the end of it, he found himself without a house, notwithstanding he had begun in the presence of about two hundred members. What good will his lordship's motion do the subject? I might say something more, but I see you devote little space to these subjects, satisfied, no doubt, that they are in better hands than those of Lord Ingestrie. Talking of Parliamentary measures, I met the Great African the other day at the corner of the Junior U. S. C., and asked him what he thought of the new measure of the Chancellor of the Exchequer regarding slaves and slave vessels. You know he has brought a bill into Parliament to grant a bounty on slave vessels captured without slaves on board, at the rate of 1*l.* per ton, with half the proceeds of the vessel, and 4*l.* per ton when they are captured with slaves on board. "Think of it," said he; "why, it's a premium on slavery, to be sure, (looking archly at the club-house, for why, I know not.) True, slave vessels gave no bounty without slaves on board, but they give a great deal more with than without them; and there is still a premium on them—head-money, or not, if you like." In my humble opinion, the measure is a good one.

With regard to other foreign matters, I perceive that an establishment is about to be made on the northern coast of Australia; while improvements of harbours are going forward on the southern shore. The American scientific expedition to the Pacific is on the point of sailing. Trade and commerce is looking up again at Quebec and Montreal; the Halifax Whaling Company are about to commence operations, and things in that quarter are putting on a more favourable aspect. In the East, I see that a new apparatus for the light at Madras has just reached its destination by the True Briton. The cost of it was 1,500*l.*, besides freight and expenses of the engineer officer to fix it. Report says they are going to place it in the old rotten wooden frame, and on a building which belongs to private individuals. It is to be hoped this will be looked into. I perceive at Madras they are also about reviving the marine registry office, for the supply of lascars to ships in the East Indies, and to keep the native seamen out of the clutches of those pests, the Ghaut-serangs, whose extortions from these poor fellows are even worse than those inflicted on our seamen in their own country. It is high time that the crimping system was done away in every civilized land; but much I fear, Mr. Editor, remains to be done first, notwithstanding the favourable show-up the other day at the Destitute Seamen's Home in Well-street, where Sir

Edward Codrington presided. By the way, I hope you will give us the report of that meeting. I understand that the establishment is looking up. But to revert to the Madras affair; it is said to be conducted by Mr. Young, the secretary to the Old Church District Charitable Committee, and I hope Mr. Young will meet the encouragement he deserves. I see Captain Biden is just come home from that part of the world, with a petition to our legislature, stating that British seamen bid defiance to their commanders at sea, and quit their vessels in harbour just as they please; in short, that Jack is as good as his master, and there are no means of teaching him otherwise. I told you something of this in my last. Well, I suppose things will come to their worst, and then they will mend, as the saying goes. By the way, there is another unfortunate affair occurred, which I have omitted to tell you. Her Majesty's brig *Rapid*, Lieutenant-commander Hon. G. S. V. Kinnaird, was lost in the Mediterranean, off Cape Bon, on the 12th of April last, and Lieutenant Kinnaird, it is said, is the only one who lost his life on the occasion. He was drowned by the upsetting of his boat. I perceive you have her reported as on shore in your last number, (page 430;) but it is too true that she is lost; the particulars I must reserve for my next.

I had much more to say to you, but I fear that I have already exceeded my limits. I shall therefore take my leave, and will tell you in my next about all the approaching festivities of the coronation; that is, if you will find space for them, from your devoted friend,

ARGUS.

P.S. The following is from the minutes of the House of Commons, Wednesday, 13th June.

TRINITY HOUSE.—On the motion of Mr. A. White, the member for Sunderland, a return was ordered of the dues received by the Trinity House for the three years, ending the 31st December last, and of the expenses paid by the corporation.

This is as it should be, it looks like a beginning,—like “passing the messenger,” those who would ride clear, *should* sight their anchors now and then.

THE ATLANTIC STEAMERS.

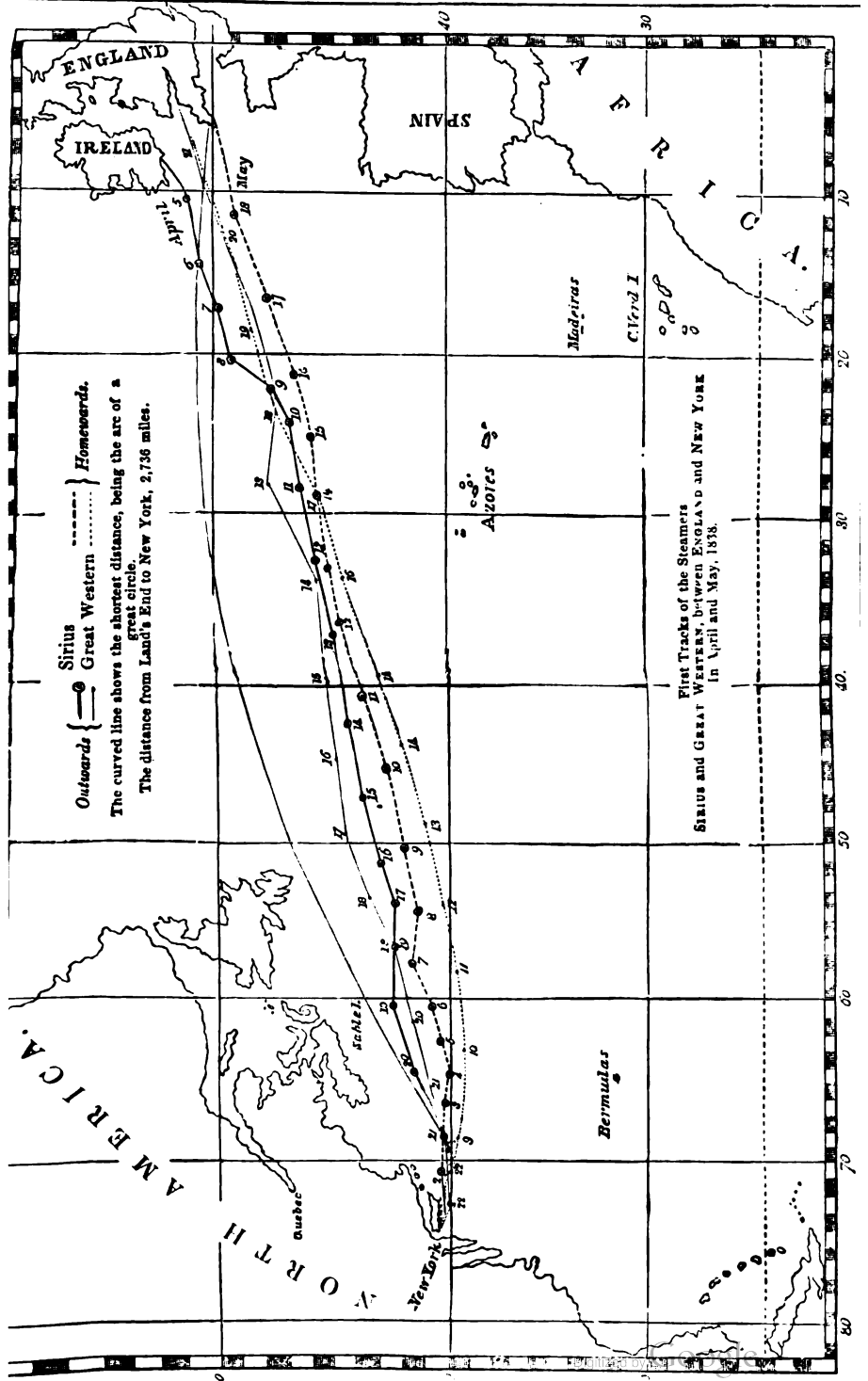
Abstract of the Log of the Sirius from Cork to New York.

APRIL 4.—Noon, mod. weather. At midnight, C. Clear, N. by E. : 2 miles. Average rate, 7·4 knots; No. of revolutions 12 per min. Pressure on boilers, 5 $\frac{3}{4}$ lb.

5. Fresh gales, W., heavy head sea. At noon, lat 50° 56' N., long. 11° 44' W. Sandy Hook, S. 76 W. : 2,674 miles. P.M. rate decreased to 4 kts., and revs. 8 $\frac{1}{2}$. One ton of coals lasted one hour and thirty minutes.

6. Fresh contrary gales, with a very heavy head sea. At noon, 50° 25' N., 14° 24' W. Sandy Hook, S. 76 W. : 2,579 miles. Average rate, 4·6 kts., revs. 9.

7. Hard gales from the westward; variable during the squalls, with a very heavy head sea; ship laboured heavily, and shipped a great deal of water. Close-reefed try-sails set. At noon, 49° 51' N., 17° 3' W. C. Clear, N. 72 E. : 301 miles. Minimum rate, 3·4 kts,



First Tracks of the Steamers
SIRIUS and GREAT WESTERN, between ENGLAND and NEW YORK
 In April and May, 1838.

revs. 8; towards midnight a little more moderate; the rate increased to 6 kts. and revs. 11.

8. Fresh breezes, with heavy weather. Mixed resin with the picked ashes. Noon, $49^{\circ} 15' N.$, $20^{\circ} 5' W.$ C. Clear, N. 72 E.: 427 miles. P.M. strong head wind, with a heavy swell. Rate, 5.4 kts., revs. 10.

9. Strong breezes from west, with heavy head swell. Using resin with the ashes and small coal. Noon, $47^{\circ} 33' N.$, $22^{\circ} 19' W.$ Sandy Hook, S. 79 W.: 2,244 miles. Rate, 6.2 kts., revs. 11; heavy sea.

10. Fresh gales, with a confused head-sea. Noon, moderate; $46^{\circ} 52' N.$, $24^{\circ} 22' W.$ Out all reefs. Sandy Hook, S. 80 W.: 2,186 miles. P.M. Fresh gales from northward. Rate increased from 6.4 kts., revs. 10 to 13. The vessel shipped a great deal of water.

11. Fresh gales from N.E., but squally, with a beam sea; using resin with small coal and ashes. Noon, $46^{\circ} 12' N.$, $28^{\circ} 25' W.$ Sandy Hook, S. 80 W.: 2,014 miles. P.M. moderate weather, with a confused swell. Rate, 8 kts., revs. 13.

12. Light winds. Tried 6 lb. pressure for a short time, then 5 lb. Noon, $45^{\circ} 34' N.$, $32^{\circ} 50' W.$ Sandy Hook, S. 81 W.: 1,833 miles. Rate, 8.6 kts., revs. 14 $\frac{1}{2}$.

13. Light winds and fine: a swell from the westward. Reduced the pressure to 3 $\frac{1}{2}$. Rate increased from 9 to 9.6 kts., revs. 14 $\frac{3}{4}$. Noon, $44^{\circ} 44' N.$, $37^{\circ} 40' W.$ Sandy Hook, S. 81 W., 1,623 miles.

14. Light breezes. One ton of coals burned one hour and fifteen minutes, without ashes or resin: with the assistance of sails, rate 9.6 kts., revs. 15. At noon, $44^{\circ} 3' N.$, $42^{\circ} 24' W.$ Sandy Hook, S. 81 $^{\circ}$ W., 1,408 miles

15. Moderate weather, with swell. At 11 P.M., taken aback. Fresh gales, with fog, snow, and sleet from W. At noon, $43^{\circ} 40' N.$ $47^{\circ} 7' W.$ Sandy Hook, S. 81 W.: 1,212 miles. The maximum rate, with strong favourable wind and a smooth sea, 11.4 kts., revs. 17.

16. Fresh gales, with a heavy sea. At noon, $42^{\circ} 48' N.$, $51^{\circ} 15' W.$ Halifax, N. 79 W.: 513 miles. P.M. Heavy gales, with snow from N.W.; a high sea running; the ship labouring heavily. The rate diminished to 4 kts., revs. 10.

17. Heavy gales from W., with a very high sea; using resin. Pressure 5 lbs. At noon, $42^{\circ} 8' N.$, $36^{\circ} 45' W.$ Sandy Hook, S. 84 W. 918 miles. Minimum rate, 3.4 kts., revs. 9, increased to 6 kts. and 12 revs.

18. Strong W. winds, with a head sea—more moderate at times. At noon, $42^{\circ} 8' N.$, $56^{\circ} 48' W.$ Sandy Hook, S. 83 W.: 783 miles. Rate increased from 6 to 9 kts. assisted by sail, revs. 14 to 16 $\frac{1}{2}$.

19. Strong breezes, with a S.W. swell. The sails set on a wind. Rate, 9 kts., revs. 16. At noon, $42^{\circ} 16' N.$, $60^{\circ} 28' W.$ Sandy Hook, S. 80 W.: 619 miles.

20. Strong breezes, with rolling swell from S.W. At noon, $41^{\circ} 31' N.$, $64^{\circ} 21' W.$ Sandy Hook, S. 82 W.: 440 miles. P.M. moderate. Rate, 9 kts., revs. 15.

21. Light winds and fine weather: using ashes and resin: with sails, rate, 9 to 11 kts., revs. 15 to 18. At noon, $40^{\circ} 15' N.$, $68^{\circ} 25' W.$ Sandy Hook, N. 87 W.: 257 miles.

22. Light breezes. Freshened at noon: $40^{\circ} 0' N.$, $72^{\circ} 48' W.$ Sandy Hook, W.N.W. 70 miles. Rate, 9.4 kts., revs. 17. At 9

hove-to, and made signals for a pilot. Sent letters on shore. Fresh water in the boilers all the way, with Hall's condensers.

Abstract of the Log of the Sirius from New York to Falmouth.

MAY 1. Sailed in the evening. Moderate weather, smooth water, wind, S.E. : with the assistance of sails, rate of going, 8·4 knots, 11 revolutions per min.

2. Light variable weather, smooth water, wind fair. At noon, 40° 21' N. 70° 42' W. Sandy Hook, N., 153 85° miles. With sails, rate averaged, 8·4 kts., revs. 12.

3. Fresh breezes, with rain from E. : increased : the rate diminished to 6 kts. and revs. 10. At noon, 40° 16' N., 66° 30' W. St. Agnes, N. 77 E. : 2,615 miles. P.M. Light winds, but heavy head sea. Midnight, fresh gales and squally : revs. 9½.

4. Fresh northerly gales, with a heavy cross sea ; towards noon, moderate, but with a heavy sea. At noon, 40° 0' N., 64° 32' W. All sail set, the rate increased to 8 kts., and revs. 11. In the afternoon, strong easterly gales, with a *confused* sea. The rate diminished to 4·2 kts., and revs. 8½.

5. Strong easterly gales, with heavy head and confused sea. At noon, 40° 18' N., 62° 43' W. Sandy Hook, W. : 528 miles. P.M. The minimum rate, 4 kts., revs. 8½. The ship remarkably easy, and the engines working very well.

6. Strong gales from eastward. At noon, 40° 40' N., 60° 30' W. St. Agnes, N. 76 E. : 2,342 miles. Towards midnight rate and revolutions increased to 6 kts. and 11 revs. The ship remarkably easy.

7. Strong gales from S.E. : towards noon it moderated, and became fair, but with a heavy rolling swell. At noon, 41° 31' N., 57° 50' W. St. Agnes, N. 77 E. : 2,222 miles. With all sail set, the rate increased to 8 kts. and 11½ revs.

8. Light winds from eastward. At noon, 41° 14' N., 51° 22' W. Cape Clear, N. 71 E. : 1,950 miles. Pressure on steam till this time, 5½ lbs.

9. Strong breezes from south with rain. With all sail set, the rate increased to 9·4 kts. and revs. 14. Pressure on steam, 3½ lbs. At noon, 41° 50' N., 50° 30' W. St. Agnes, N. 75 E. : 1,906 miles.

10. Strong breezes from southward. At noon, 42° 27' N., 45° 31' W. St. Agnes, N. 75 E. : 1,684 miles. Average rate, 9·4 kts., revs. 15 and 14½.

11. Moderate weather : rate, 9 kts., revs. 14½. At noon, 43° 30' N. 40° 50' W. St. Agnes, N. 76 E. : 1,468 miles.

12. Fresh E. winds. Difficulty in keeping the steam up, owing to the badness of the coals. Rate, 8 kts., revs. 13. At noon, 44° 27' N., 36° 54' W. St. Agnes, N. 75 E. : 1,279 miles.

13. Fresh E. winds. Pressure, 5½ lbs. Rate only 7 kts., on account of bad coals. At noon, 44° 59' N., 33° 22' W. St. Agnes, N. 76 E. : 1,131 miles.

14. Fresh N.E. winds. Rate, 8·4 kts., revs. 14. Filled some casks with salt water. At noon, 45° 23' N., 29° 23' W. St. Agnes, N. 74 E. : 971 miles.

15. Strong gales, N.E., with a heavy head sea. Rate, 8·4 kts., revs.,

15. At noon, 45° 50' N., 25° 13' W. St. Agnes, N. 72 E.: 799 miles.

16. Fresh breezes and squally, with rain from N.E. Rate, 8·6 kts., and revs. 15. At noon, 46° 31' N., 21° 6' W. St. Agnes, N. 71 E.: 625 miles.

17. Light W. winds. All sail set. At noon, 47° 44' N. 16° 36' W. St. Agnes, N 72 E.: 426 miles. The rate increased to 10 kts., and revs. 17.

18. Moderate, from S.W.: with the sails, the rate and revolutions increased at one time to 11 kts. and 18 revs. At noon, 49° 10' N., 11° 20' W. St. Agnes, N. 79 E.: 200 miles.

19. A.M. Strong gales, and squally, with heavy rain from S.W. With sails, 9½ kts., revs. 16. At 6 P.M., anchored in Falmouth harbour.

The foregoing is a tolerably complete abstract of the log of the *Sirius*, which has been placed at our disposal for the purpose; and from which, with the assistance of the chart, some idea of the voyage may be formed, as far as the performance of the vessel goes. With regard, however, to steam information, or that close account of particulars required for computations, the log with which we have been favoured, says little; and so little, that it is scarcely worth while to note that, as such data, unless it be entire, is next to useless. With regard to the *Great Western*, her log will be but little more than a repetition of that we have already given, excepting, no doubt, a little variety in weather. In our last number (p. 426) we gave a tabulated statement of the daily distances run by the two vessels, by which it will be seen, that, as might be expected, the voyage of the *Great Western* was more favourable than that of the *Sirius*, owing, no doubt, to her greater power and smoother water. The tracks of both the vessels across the Atlantic will be shown by the accompanying chart, on which we have also introduced the route which should be adopted to make the shortest passage. It is well known that the shortest distance between two points on the sphere, is the arc of a great circle, but this from the Land's End of England to New York, would pass over Newfoundland and Nova Scotia. As a convenient course, and one which may always be adopted by a steam-vessel, we have taken a point about twenty miles south of Sable island, and drawn the curve, which therefore represents the shortest navigable distance between those places. This distance is not more than 2,490 miles, and 645 miles further of navigable distance to New York, making 3,135 miles for the passage: the distance on the arc between the Land's End and New York, being 2,976 miles, the excess will be only 159. Here, then, is the intercourse of this country and North America by steam navigation fairly established, the first grand step made with it in the western hemisphere. The next, no doubt, is not far off.

SHIPWRECKED AND DISTRESSED SAILORS' ASYLUM.—The annual general meeting of the friends of this institution, was held on the 12th ult., at the London Tavern.

SIR EDWARD CODRINGTON having been moved to the chair, proceeded to observe, that the object of this charity was to receive seamen in absolute destitution on the same principle as the *Dreadnought* received them in sickness, without asking any questions as to their

creed or their country. As the funds were limited, the managers of the institution had proceeded in the most economical manner, in order that they might be able to receive the greatest possible number of men, in a state of destitution. The gallant admiral then proceeded to read the report, from which it appeared that during the past winter the asylum had been quite full, in consequence of great numbers of seamen having been deprived of employment through the stopping of trade on the river. Among the objects proposed by the charity, the report particularly alluded to the following: firstly, the asylum was constantly open as a refuge for destitute seamen of every colour, nation, and creed; and secondly, seamen were allowed to carry their chests and bedding to it, where they were secure from the harpies who existed by plundering the unwary. For this indulgence a trifling sum was required for fuel and cooking utensils, such men being expected to find their own provisions. The committee hoped in time to add to the establishment a pay office, a savings' bank, and a register office, being assured that nothing would tend so materially to raise seamen in the scale of society, as their being enabled on their return from a voyage to deposit their hard-earned wages in a place of security. The committee called attention to the necessity of placing larger funds at their disposal, and to a strict inspection of the system under which the asylum was regulated; and also to their accounts, being confident that they had effected the greatest extent of good at the smallest possible cost. The receipts for the past twelvemonth, by donations, subscriptions, &c., had been 311*l.*, which, with the balance from last year's account, made 420*l.* 16*s.* 11*d.*, while the total expenditure amounted to 393*l.* 2*s.* 2½*d.*, leaving a balance of only 27*l.* 14*s.* 8½*d.* Since the 31st May, 1837, 457 seamen had been admitted into the asylum, to whom 6,466 nights' lodgings had been granted, and 13,827 meals distributed, at the expense of the above sum of 393*l.* 2*s.* 2½*d.*, making the average about 6½*d.* per meal. This sum included every expense of rent, (40*l.*) wages; and in many cases pecuniary assistance, as well as clothing. The premises occupied by the institution, comprised a mess-room, a dormitory, and chapel, capable of containing about 100, with apartments for the superintendent attached. Sitings were also secured in the Trinity-chapel, Cannon-street road, in connexion with the Church of England. In consequence of the line of the London and Blackwall railway being about to be carried through the asylum, and the committee having received notice to quit in September, it would be necessary that large funds should be subscribed, to enable them to fit up other premises similar to the present, if the public desired that these benefits should be continued to seamen, to whom they were particularly necessary, as being a class of men proverbial for their recklessness and liability to imposition. The gallant chairman then observed that there was one peculiar feature in seamen, which was, that as they would risk their own lives for their brother tars, so they would rather starve with brother seamen than live in affluence with any other class of people. He regretted that Sir Thomas Troubridge and Captain Dundas were too ill to attend the meeting, and that Sir C. Adam was detained by official business. He was confident that if this subject were properly taken up, it would be productive of the greatest possible benefits to the naval and mercantile interests of the country. He understood that there was a feeling throughout the mer-

cantile community disposed to take up this subject on a larger scale, and on their own hands. He hoped sincerely that they would do so, and that some gentleman would bring forward a resolution to carry such a disposition into successful operation.

SIR JOHN REA REID, M.P., in moving that the report should be printed and circulated, commented very feelingly on the injuries inflicted on poor seamen, who on landing on the British shores, were immediately surrounded by crimps and harpies, who pretending to be their friends, did all they could to rob them of their hard-earned money. As a ship-owner he deemed himself bound to promote the happiness of British seamen, to whom he was indebted for all he enjoyed. He hoped that the ship-owners and merchants of this country would come forward to the assistance of this charity, and then he could entertain no doubt of its success.

GEORGE PALMER, ESQ., M.P. seconded the resolution, and observed, that the report was satisfactory as far as it went. It was evident that the committee had done as much as they could with the limited funds placed at their disposal. The great object was to increase those funds. That British sailors were deserving objects of relief was admitted by all : the chief subject for consideration was the manner in which they could best unite all parties in this commercial city, in attaining that object.—The title of the asylum was alone sufficient to excite the public sympathy,—the “Shipwrecked and Distressed Sailors’ Asylum.” Could any one suppose a more distressing case than that of a poor sailor thrown on a strange coast, without a friend who knew him, or perhaps a rag to cover him? Such a society as the present, which was designed to take care of these men while in a state of unavoidable destitution, was one which would necessarily obtain the sympathy and assistance of the humane and benevolent.

(To be concluded in our next.)

STEAM NAVIGATION TO AMERICA.

MR. EDITOR,—The following particulars respecting the navigation of the Atlantic by steam, afford so complete a contrast between what was *supposed* impossible, and what is *proved* possible, that you will oblige me by giving them a place in your widely circulated and useful Journal.

ANTI-CHIMERA.

Dr. Lardner delivered, in the winter of 1836, in the Mechanics, Institution, in this town, a lecture on steam intercourse with America. In that lecture the following passage occurred :—

“ Dr. Lardner then proceeded to observe, that one of the grandest projects which had ever occupied the human mind was at present in the progress of actual accomplishment. He meant that of constructing a great highway for steam intercourse between New York and London, between the capital of the new world and that of the old. Part that highway was in the process of formation. It consisted of several stages ; that of the railroad from London to Birmingham, that from Birmingham to Liverpool, and the steam intercourse with Dublin ; but there was another stage, that from Dublin to Valentia, which had, as yet, hardly been thought of. Ireland was a country

which, with all her political disadvantages, was blest by nature with a vast number of physical advantages, and amongst the rest he might reckon a vast number of excellent harbours. No country in the world could boast of so many fine and spacious ports, bays, and roadsteads. She had many harbours on her west coast which would serve admirably as stations for steam conveyance across the Atlantic; but Valentia had been selected as the extreme westerly point suitable for that purpose. It was a fine anchoring ground, by an island of that name on the coast of Munster. The distance from Dublin to this point was under 200 miles, which might be traversed in about eight hours. The nearest point of the continent of North America to this point of Ireland was St. John's Newfoundland. The distance between the two was about 1,900 miles—thence to Halifax, in Nova Scotia, there would be another run of 550 miles—and from that to New York would not exceed the admissible range; but touching at Halifax would be desirable for the sake of passengers.

“The only difficulty would be as to the run from Valentia to St. John's; and the voyage from Dublin to Bordeaux and back, a distance of between 1,600 and 1,700 miles, with the same stock of coals, came very near this distance. It must be observed, that westerly winds blew almost all the year round across the Atlantic. They were produced by the trade winds, being the compensating cause that restored the balance which these served to destroy, according to that beautiful principle in nature, which always provides a remedy for any derangement in the deranging cause itself. As a last resource, however, should the distance between Valentia and St. John's prove too great, they might make the Azores a stage between. So that there remained no doubt of the practicability of establishing a steam intercourse with the United States. As to the project, however, which was announced in the newspapers, of making the voyage directly from New York to Liverpool, it was, he had no hesitation in saying, perfectly chimerical; and they might as well talk of making a voyage from New York or Liverpool to the moon. The vessels which would ultimately be found the best adapted for the voyage between this country and the United States would be those of 800 tons, which would carry machines of 200 horses' power, and would be able to stow 400 tons of coals. To supply a ten horse power, daily required an expenditure of a ton of coals; and, consequently, 200 horses' power would require 20 tons of coal daily; but if the vessel carried 400 tons of coals only, it would not be practicable to undertake a voyage which would require the whole of that quantity. They must make an allowance of 100 tons for contingencies. Thus, in reckoning the average length of the voyage which might be undertaken by such a vessel, we might safely calculate upon 300 tons of coals, which would be sufficient for fifteen days; and it might fairly be concluded, that any project, which calculated upon making longer voyages than fifteen days without taking in a fresh supply of coals, in the present state of the steam-boat, must be considered chimerical. Now, the average rate of speed of the Mediterranean packets was 170 miles per day; and the utmost limit of a steam voyage might be stated at 2,550 miles; but even that could not be reckoned upon.”

In the month of January, in the same year, a letter was published in the *Albion*, stating the writer's reasons for dissenting from Dr. Lardner's opinions on the impracticability of transatlantic steam navigation.

gation direct from Liverpool, or any other English or Irish port, to New York. The writer of that letter was Macgregor Laird, Esq., now secretary to the British and American Steam Company, whose magnificent ship, the *British Queen*, built under his superintendence, was launched on Thursday week. In that letter, written nearly two years and a half ago, Mr. Laird calculated, from the Doctor's own data, that the voyage, instead of being impracticable, was quite practicable, and that it might be done under *fifteen days*; a calculation which the performance of the *Great Western*, both out and home, completely justified.

We subjoin a copy of Mr. Laird's letter, for the purpose of showing how sagacious and practical were his views, at that early period, on the subject of transatlantic steam navigation.

“ TO THE EDITOR OF THE ALBION.

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

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

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

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

"By what process of reasoning Dr. Lardner has fixed the ultimate size of steam-vessels for the Atlantic at 800 tons and 200 horse power does not appear, which is the more to be regretted, as it must be a peculiar one, from the size of vessels very little exceeding that of several in the coasting trade, and the power being much less. But I am not bound to take this for granted, particularly as all my experience has proved that we, as yet, have never had to complain of the size of the vessel, if the power had been proportionably increased: on the contrary, the Dublin boats have crept up from 250 tons to 5 and 600; and the Clyde from 200 to 400 tons; and other lines in the same proportion. In reasoning, therefore, upon a line of steam communication between Great Britain and New York, I must reason from analogy, and fortunately Dr. Lardner gives me the data. The Leeds, it appears, makes the voyage to and from Bourdeaux, a distance of about 1,600 miles, with one supply of coals: the Leeds is, I believe, 420 tons, and 140 horse power, and her displacement between her light and load marks will be about 80 tons to one foot, or perhaps only 70. Now, the distance from Liverpool or Portsmouth to New York is 3,000 nautical, or 3,500 statute miles; a little less to Liverpool. Suppose the Leeds to be trebled in capacity, so that her displacement should exceed 200 tons per foot draught; it is not necessary to treble her power, as double power propels more than double bulk; but allow her 300 horse power—her light draught of water would be about eleven feet with her machinery on board, and with 800 tons of dead weight on board, about fifteen. *I take the consumption of coals at 30 tons per day, and a mean speed of 10 miles per hour, and at an expenditure of 325 tons of common coal, or 420 of Llangmuch, I land my passengers in New York, Portsmouth, or Liverpool, IN SOMETHING LESS THAN FIFTEEN DAYS.* I have not allowed anything in this calculation for the saving of fuel that would accrue in these large engines, by working them expansively, but have the consumption at 9½ lbs. per horse per hour, and with common coal I would have a surplus of 275 tons dead weight for passengers and goods.

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

averaged more than ten miles per hour on her voyage to Malta. Now, I am of opinion, that the Dundee, Perth, Monarch, and Medea, are to be, and will be beat, but not by vessels of 800 tons, and 200 horse power.

"I hope, Mr. Editor, I have proved that it is easier to go from Portsmouth or Liverpool to New York, than to the moon; that it is more convenient to go direct than through the first 'gem of the sea;' and the last, though not the least consideration, that, if we wish to go at all by steam, we had better not wait for the Valentia railway.

"I remain, Mr. Editor, very respectfully,

"CHIMERA."

MEETING OF THE MATES OF H.M. SQUADRON, STATIONED AT PORTSMOUTH.

A MEETING was held on Tuesday at the George Hotel, by the Mates, and attended by other Officers of her Majesty's Squadron, stationed at this port, upon the subject of the refusal, on the part of Colonel Lewis, the Commandant of the Plymouth Division of Royal Marines, to allow the Band of that corps to attend the funeral of the late Mr. Lewis, Mate of the "Royal Adelaide," whose untimely death on board that ship has been already noticed. Mr. J. Aylmer Painter, of H.M.S. "Excellent," having been unanimously called on to take the chair, opened the proceedings, by stating that a letter, signed "BLUE JACKET" having appeared in the "Naval and Military Gazette," commenting on the above circumstance, the Mates of H.M.S. "Excellent" had written to their brother officers of the "Royal Adelaide" at Plymouth, for a statement of what actually occurred in this respect; to which request the following answer has been received:—

*H.M.S. Royal Adelaide, Plymouth,
June 14, 1838.*

GENTLEMEN,—The best plan of giving you a clear view of the circumstances of the attendance of the marine band being refused at the funeral of our late messmate Lewis, is to relate to you the manner in which it was asked for and refused. Two Mates of the ship went as a deputation to Colonel Lewis, with their Captain's compliments, and asked as a favour, if he would allow the marine band to attend the remains of their late messmate to the grave; to which he answered, that he would neither hear nor think of such a thing, adding at the same time, that it would be making a bad precedent. He was met on that point, by their saying that it would not be making a precedent, as the Marine Band had always attended at the funerals of naval officers who were buried with military honours—instancing the case of Lieutenant Derriman, who died some months since, while belonging to the "San Josef," and at whose funeral the band had attended. He then not only persisted in his refusal, but was candid enough to say, that had he been at Plymouth the marine band should not have attended on that occasion.

The band of the 29th regiment was then asked for, and was given with as much courtesy as the other was uncourteously refused. We have reason to thank the 29th, not only for the band, but for the

handsome manner in which it was given. The naval world being at a loss to account for such an extraordinary circumstance as the non-attendance of the marine band at the funeral of a naval officer, have very naturally thought some point of etiquette had been violated in asking for it—never dreaming that it could be refused (if properly asked for), to attend at the funeral of an officer belonging to a profession of which the marine corps is a branch.

Gun-Room Officers H.M.S.

Excellent.

The Chairman resumed by observing, that on the receipt of this answer, his brother officers and himself at this port, considered they were called upon, in the first instance, to return their grateful thanks to Lieut.-Colonel Simpson, and the officers of the 29th regiment for the kind manner in which they granted the attendance of the regimental band on the melancholy occasion referred to; and in the next, to mark their surprise and regret that the Colonel-Commandant of the Royal Marines should have found it necessary to refuse permission for the band of that corps to do so. In whatever way the present meeting might express their sense of the latter, he knew the superior rank of Colonel Lewis to themselves would not be lost sight of.—(Hear, hear, hear.)—He only spoke the sentiments also of the whole of his brother officers, when he said, that whatever comments they might make upon the subject, especial care would be taken to avoid any expression that could imply a reflection on the corps—(hear, hear.)—that whatever resolution the occasion seemed to call for, should be so framed as to preclude the possibility of its being construed into a censure of the corps in the most remote degree, or having a tendency calculated to interrupt that harmony and good understanding which existed, and ought always to prevail, between the two branches of the service.—(Hear, hear.)

After some judicious observations from the whole of the officers present to the same effect, and more particularly in confirmation of what had fallen from the chairman—their anxiety not to say anything that could imply a reflection on the corps of Royal Marines; the following resolutions were submitted and unanimously adopted.

Resolved,—That this meeting cannot but express their surprise and regret, that the Colonel-Commandant of the Plymouth Division of Royal Marines should have found it necessary to refuse permission for the attendance of the band of that corps, at the funeral of their late brother officer Mr. Lewis, of her Majesty's ship "Royal Adelaide;" but hope it will not tend to disturb the harmony and good feeling which happily exists between the two branches of the naval service.

Resolved,—That the sincere and grateful thanks of this meeting in behalf of the Mates of the different ships in Portsmouth harbour, be tendered to Lieut.-Colonel Simpson, and the officers of Her Majesty's 29th regiment, for their kind and handsome manner of granting the band of the regiment to accompany the remains of the late Mr. Lewis to the grave.

(Signed) J. AYLMER PAYNTER, Chairman.

The chairman then submitted, that the vote of thanks to Lieut.-Colonel Simpson, and the officers of the 29th regiment, should be conveyed to them in the following letter:—

George Hotel, Portsmouth, June 19, 1838.

SIR,—I beg to lay before you a copy of resolutions, unanimously agreed to at a general meeting of the Mates of her Majesty's Squadron at Portsmouth; and in furtherance of these resolutions, I beg, in the name of the Mates of the Squadron, to offer to yourself and the officers of the 29th regiment, our most sincere and grateful thanks for the kind and handsome manner in which you granted the attendance of the regimental band at the interment of our late much respected brother officer, Mr. Lewis.

Trusting that the good feelings which actuated your conduct on the late mournful occasion may ever exist between our respective services, which may then be justly termed united,

I have the honour to remain,

Your most obedient servant,

J. AYLMEY PAYNTER,

Chairman of the Meeting.

(Signed)

*To Lieut.-Colonel Simpson, H.M.
29th Regiment.*

On a motion being made that this letter be adopted, Mr. Dumaresq said, he had peculiar satisfaction in seconding it, because he knew that this was not the only instance in which the navy was indebted for kindness to the officers of the 29th regiment. It had been experienced at the Mauritius; for the moment the ship in which he (Dumaresq) was, arrived at that island, the officers of that regiment that moment invited all the officers of the ship, without distinction of rank, to become honorary members of their mess, treating them as brothers in the same service, though separate in its branch.—(Applause.)—The motion was then unanimously carried, and after thanks had been given to the chairman for his able and impartial conduct in the chair, the meeting, which was admirably conducted, dissolved.

PORT OF BIDEFORD.—It is gratifying to see our naval officers, assisting in their own peculiar line of pursuits towards those undertakings which contribute to promote their country's good; and we shall be found ever ready to record such services: with these feelings we insert the following copy of a resolution, passed at a meeting at Bideford, relative to the proposed harbour of refuge in Bideford Bay, at which the Mayor, Vice-Admiral Glynn, presided.

“That the thanks of this meeting be conveyed to Captain Denham of the royal navy, for the clear and satisfactory manner in which he has pointed out the most eligible situation for the proposed harbour of refuge in this bay, and that a copy of this resolution be transmitted to Lord Ebrington.”

NEW BOOKS.

MADAME TUSSAUD'S MEMOIRS AND REMINISCENCES OF FRANCE.
Forming an Abridged History of the French Revolution. Sanders and Otley, Conduit Street. 1838.

The peculiar position which the authoress of these memoirs occupied previous to, and during the French revolution, doubtless gave her an opportunity of witnessing a large share of the horrors of that awful period, and her reminiscences of those scenes has enabled her,

with the assistance of the talented editor, F. Hervé, Esq., whom she has called to her assistance, to produce a valuable and highly-interesting volume; one, which we can cordially recommend to the notice of our readers.

ADELE: A Tale of France. *By Miss E. Randall, 1838. Rolfe and Fletcher, Cornhill.*

Adele, besides being a tale of France, is also one of the revolution, and told with force and vigour. Those who visit Boulogne should take Adele in their hand; they will be richly rewarded in tracing with it the beauties of the little valley of Audenach, and reading of the adventurous history of Marie Antoinette and her lover, De Clermont. The whole is well managed, and Miss Randall has evinced powers of description of no ordinary kind.

THE GREENWICH PENSIONERS. *By Lieut. Hatchway. In Three Volumes. Colburn, Great Marlborough-street, 1838.*

Those who delight in sea-tales, in the real tarbrush fashion, will find enough to feast on here. The Greenwich pensioners' yarns, twice laid by Lieut Hatchway himself, must speak for themselves, and surely hold out a promise which they cannot belie. The author has wisely prefixed to his work an historical account of Greenwich Hospital, which imparts to it a value not possessed by works of this kind in general.

THE PARTHENON. *Adapted to the Purpose of a National Monument, &c. By A. Robertson, A.M., &c. Hatchard, Piccadilly, 1838.*

While our sages, our heroes, and our artists are turning their thoughts on a fit and becoming emblem, to perpetuate the renown of our immortal Nelson through future ages, Mr. Robertson has revived an idea, originally conceived, at the termination of last war with a similar motive, and adapted it to suit his views of what that should be, which is hereafter to be placed in Trafalgar Square. Mr. Robertson's proposal will, of course, go before the committee; but while we cannot withhold our tribute of admiration from the Parthenon itself, as a perfect specimen of its kind, we cannot award our approbation of its being cooped up in Trafalgar Square. The idea to us is monstrous.

SERMONS ON MISCELLANEOUS SUBJECTS. *By W. J. E. Bennett, M.A., &c. Volume First. Cleaver, Baker Street.*

It is true that we do not write "Evangelical" before our name, nor do we boast the labours which so eminently distinguish some of our contemporaries, who wear the habiliments of the church. We are, nevertheless, all working in one wide field to forward one great cause; and may, therefore, pick up a leaf when it comes in our way, even when it bears the word of the Gospel, and hold it out to our own nautical clergy. In doing so now, we may also assure them that Mr. Bennett's first volume is well worthy of being added to their store of professional works. He deals out truth with an unsparing hand, and adds value to his sermons by his excellent Gospel-illustrations.

NEW CHARTS.

GULF OF ST. LAWRENCE, MAGDALEN ISLANDS. *Surveyed by Lieut. P. E. Collins, R.N. Plate, eighteen by twenty-four inches. Admiralty.*

A neatly executed and compact plan of these islands, with views as leading marks, &c., which will prove a valuable acquisition to ships frequenting the Gulf of St. Lawrence. Lieut. Collins was a highly-talented and deserving officer, and fell in the execution of this survey.

BAY OF SEVEN ISLANDS. *By Captain H. W. Bayfield, R.N. Plate seventeen, by twenty-four inches. Admiralty.*

This is one of those important places on the shores of the St. Lawrence, of which we were in total ignorance before Captain Bayfield's survey. The plan amply shows the immense advantages it possesses as an anchorage, and in point of execution does much credit to its talented author.

GULF OF ST. LAWRENCE. THE MINGAN ISLANDS. *Western sheet. By H. W. Bayfield, R.N., F.A.S. Plate, eighteen by twenty-four inches. Admiralty.*

This chart contains the north shore of the gulf from the river St. John on the west to Esquimaux Point on the east, with the channels of the Mingan Islands. As a coasting chart, it will be an invaluable and indispensable acquisition.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

COMMANDERS,—R. Tryon, A. S. Hamond, Hon. J. R. Drummond.

APPOINTMENTS.

BELLEROPHON, 80.—*Mate*, R. B. Creyke. BRITANNIA, 120.—*Mate*, W. Everest; *Ass.-Surgeons*, J. Thompson, M.D., D. Ritchie. COAST-GUARD.—*Lieutenants*, W. T. Bellain. W. C. Hemsworth, A. Leathard. J. H. Bellamy, R. Brown, J. G. Gardner. CORNWALLIS, 74.—*Lieut.*, M. Thomas. COLUMBINE, 16.—*Com.*, G. A. Elliott; *Mate*, C. H. May. EXCELLENT.—*Ass.-Sur.*, H. Brown; *Clerk*, G. H. Mowbray; *Midshipman*, G. Napier. FORRESTER, 3.—*Lieut. Commander*, C. G. Napier. HASLAR HOSPITAL.—*Assist.-Surg.*, S. Stanley. HERMES, St. V.—*Mate*, C. F. Doyle, *Second Master*, R. S. Rundle; *Clerk in charge*, W. Bateman. HERALD, 18.—*Com.*, J. Nias; *Lieutenants*, J. Sankey, H. G. Morris; *Master*, P. Bean; *Purser*, J. Giles; *Surgeon*, Lane, M.D.; *Assistant-Surgeon*, R. A. Bankier, M.D.; *Midshipman*, J. B. Cator; *Vol.*, H. W. Cornber. LARNE, 18.—*Mate*, W. Coles. JASEUR, 16.—*Com.*, F. M. Boulton; *Master*, J. Penn; *Surgeon*, J. Lardner; *Assistant Surgeon*, J. T. Jenkins; *Purser*, E. Heaslop. MAGNIFICENT.—*Surgeon*, J. Baird. MADAGASCAR, 46.—*Lieutenant*, A. Grant. MALABAR, 74.—*P. Fisher*. PRINCESS CHARLOTTE, 120.—*Lieutenant*, A. Clifford; *Assistant-Surgeon*, H. Baker. RANGER.—*Lieut.-Com.*, J. H. Turner; *Master-Act.*, C. Hutchings; *Assist.-Sur.*, A. Stewart. ROYAL ADELAIDE, 120.—*Assistant Surgeon*, W. Scotland, M.D. SALAMANDER, St. V.—*Mates*, J. Coffin, J. D. Rhode. SAVAGE, 10.—*Lieut.*, H. Lacon. SYLVIA, *Rev. Cut.*, —*Mate*, C. Ludlow. TRIBUNE, 24.—*Captain*, C. H. Williams; *Assistant-Surgeon*, J. Thompson. TYNE, 28.—*Lieutenants*, W. Boys, Lord H. Russell. VICTORY, 104.—*Surgeon*, T. Miller. VOLCANO, St. V.—*Lieutenant-Commander*, J. West.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

APOLLO, 46, arrived at Portsmouth from Quebec, Jan. 10. CHILDERS, 16, Hon. Captain Keppel, 26th May, paid off. COLUMBIA, 2, 28th May, sailed for West Indies from Plymouth. COMET, St. V., Lieutenant Com. G. Gordon, 25th May, arrived at Plymouth from San Sebastian; 1st June, sailed for San Sebastian. CRACKER, 6, 7th June, at Portsmouth from Jersey. DUBLIN, 50, 31st May, paid off at Portsmouth. HERMES, St. V., recommissioned by Lieutenant W. Blount. JASEUR, 16, Commander F. M. Boulbee, 11th June, commissioned at Plymouth. JUPITER, 38, Mr. R. Easto, 24th May, sailed from Cork with troops for Quebec. LIGHTNING, St. V., Lieutenant-Com. J. Shambler, 25th, at Plymouth from Dublin. LYRA, 6, Lieutenant Forrest, 20th May, at Plymouth, and returned to Falmouth. MESSENGER, 1, St. V., Mr. J. King, 18th May, arrived at Plymouth from Pembroke; 21st, sailed for Dover with troops; 27th, returned to Portsmouth; 31st, went to raise the Pincher; 4th June, came in with Pincher; 8th, sailed for Plymouth; 12th, for Cork. METEOR, St. V., Commander D. Pritchard, 23rd May, arrived at Plymouth from Falmouth. MODESTE, 18, Commander G. Eyres, 26th May, sailed for West Indies. PANDORA, 4, Lieutenant Innes, 20th May, at Falmouth, from the Havana. PANTALOO, 10, Lieutenant J. Mc Donnell, 25th May, sailed for Spain; 14th June, arrived at Portsmouth from Spain. PETTEREL, 25th May, arrived at Plymouth from Pembroke Yard. RACER, 16, Com. Hope, 5th June, arrived at Portsmouth from Antigua; paid off. RAINBOW, 25, May, at Portsmouth from Jamaica; 29th, paid off. SALAMANDER, 4, St. V., Com. Dacres, 8th June, at Portsmouth from Spain. SEAFLOWER, 4, 7th June, at Portsmouth from Jersey. STAR, 6, Lieutenant Smith, 20th May, arrived at Plymouth from St. Thomas. TERMAGANT, 10, 14th June, at Portsmouth, from a cruise. THALIA, 46, Rear-Admiral Sir B. Campbell; 22nd, sailed for Chatham. WINCHESTER, 25, Vice-Admiral Sir T. B. Cepel, 30th May, arrived at Portsmouth from East Indies; 16th June, paid off at Sheerness.

PORTSMOUTH.—*In Harbour*.—Britannia, Victory, Royal George Yacht, Herald Excellent, Pantaloon, Seaflower, Arrow, Apollo, Cracker. *At Spithead*, Termagant.

PLYMOUTH.—*In Hamoaze*.—Royal Adelaide, San Josef, Minden, Jaseur, Ranger, Weazel. *In the Sound*.—Talbot.

ABROAD.

ÆTNA, St. V., Captain A. T. E. Vidal, 5th April, Cape Coast. ALGERINE, 10, Lieutenant Thomas, 19th Feb. sailed from Ceylon for Madras. APPOLLO, 46, 9th May, arrived at Quebec; 17th, sailed for England. ARIADNE, 8th February, arrived at Callao from Paita. ATHOLL, 28, 17th May, at Quebec. BARHAM, 50, Captain A. L. Corry, 16th May, at Malta; 19th, sailed. BASILISK, 6, Lieutenant G. G. Mc Donnell, 11th February, at Valparaiso. BEAGLE, 10, St. V., Com. T. C. Wickham, 15th November, arrived at Swan River. BELLEROPHON, 80, Captain S. Jackson, 22nd May, arrived at Gibraltar from Plymouth; 26th, sailed for Mediterranean. CARRON, St. V. Lieutenant Thomas, 15th April, sailed for St. Thomas; 8th May, Antigua. CARYSFORT, 28, Captain Sir B. Martin, 12th May, at Malta from Tunis. CHAMPION, 18, Com. S. F. King, 25th March, Vera Cruz. CLIO, 16, Com. W. Richardson, 5th May, sailed from Malta. COMET, St. V., Lieutenant-Com. G. Gordon, 10th May, sailed from San Sebastian for England. CONFIANCE, 2, Lieutenant-Com. Stopford, 1st May, arrived at Malta from off Tunis; 9th, at Gibraltar 10th, sailed for Malta. CONWAY, 28, Captain C. R. D. Bethune, 9th February, at Sydney from a cruise. CORNWALLIS, 74, Captain Sir R. Grant, 2nd May, arrived at Bermuda. DIDO, 18, Captain L. Davies, C.B., 26th April, arrived at Malta from Barcelona; 5th May, sailed for Smyrna. EDINBURGH, 74, Captain W. H. Henderson, 17th May, Quebec. GRIFFON, 3, 3rd May, arrived at Bermuda from New York; 8th, sailed for Barbados. HARLEQUIN, 16, Com. J. E. Erskine, 30th April, arrived at Malta from Barcelona; 16th, Malta. HARRIER, 18, Com. W. H. H. Carew, 21st January, Callao from Valparaiso. HORNET, 6, Lieutenant Baillie, 13th April, at Jamaica from Chagres; 19th, sailed for Chagres. IMOGENE, 28, Captain H. W. Bruce, 12th Feb., at Valparaiso; 16th, Callao; 22nd, sailed on her return. INCONSTANT, 36, Captain D. Pring, 9th May, arrived at Quebec. LARNE, 18, Com. P. Blake, 31st March, arrived at Madras from Moulmien. LILY, 16, 15th May, arrived at Madeira from Portsmouth; 21st, sailed for Rio. MADAGASCAR, 46, Captain Wallis, K.C.H., 16th May, arrived at Gibraltar from Portsmouth; 24th, sailed for Canada with troops. MALABAR, 74, Captain Sir W. A. Montague, 15th May,

Quebec. MEGERA, St. V., Lieutenant Goldsmith, 26, Malta from Tunis with crew of Rapid. NIMROD, 23, Com. J. Fraser, 16th April, Port Royal. PARTRIDGE, 10, Lieutenant Morris, Com., 2nd June, in Yarmouth Roads; 4th, sailed for Heligoland. PEARL, 20, Captain Lord Clarence Paget, 8th April, arrived at Jamaica from Bermuda; 14th, sailed for Bermuda. PEMBROKE, 74, Captain F. Moresby, 16th May, at Malta; 20th, arrived at Leghorn. PIQUE, 36, Captain E. Boxer, 15th April, at Halifax; 23rd, sailed for Quebec; 4th May, at Arichat; 19th, at Bic I. St. Lawrence. PRINCESS CHARLOTTE, 104, Flag of Adm., Hon. Sir R. Stopford, Captain A. Fanshawe, 16th May, at Malta; 19th, sailed. RACER, 16, Com. J. Hope, 5th April, at St. Thomas; 8th May, sailed from Antigua for England. RALEIGH, 18, Com. M. Quin, 5th February, West coast of India; 13th April, arrived at Bombay from Muscat. RAPID, 10, Lieutenant-Com. Hon. De Ros Kinnaird, wrecked on the 12th April, off Cape Bon. RATTLESNAKE, 28, Captain W. Hobson, 26th March, arrived at Calcutta from Rangoon. RHADAMANTHUS, St. V., Com. A. Wakefield, 1st May, arrived at Malta from Corfu; 19th, sailed from Malta. RINGDOVE, 16, Com. S. Nixon, 21st April, for St. Thomas; 1st May, grounded off Porto Rico, proceeded to St. Thomas. RODNEY, 92, Captain H. Parker, 16th May, at Malta; 19th, sailed. ROVER, 18, Com. C. Eden, 15th February, left Valparaiso for Rio; 11th April, sailed from Rio for England; 12th, returned having captured a slaver. RUSSELL, 74, Captain Sir W. H. Dillon, K.C.H., 23rd May, arrived at Lisbon from Plymouth. SAMARANG, 28, Captain W. Broughton, 2nd April, sailed for Rio. SNAKE, 16, Com. A. Milne, 16th April, sailed from St. Jago de Cuba on a cruise. SPITFIRE, St. V., Lieutenant A. Kennedy, 29th April, arrived at Malta from Alexandria. TRINCULO, 16, Com. H. G. Coffin, 25th May, at Lisbon. VANGUARD, 80, Captain Sir T. Fellowes, 16th May, at Malta. VICTOR, 16, 5th April, arrived at Madras from Negapatam. WASP, 16, Com. Hon. D. Pelham, 19th May, at Constantinople. WATERWITCH, 10, Lieutenant Com. W. Dickey, 11th April, at Ascension. WELLESLEY, 74, Captain T. Maitland, 8th March, at Trincomalee. WINCHESTER, 52, Captain E. Sparshott, 5th February, sailed from Ceylon for England; 19th March, arrived at Simon's Bay; 16th April, left Ascension for England. WOLF, 10, Com. E. Stanley, 5th February, had sailed for Straits of Malacca. WOLVERINE 16, Com. E. Howard, 6th May, at Gibraltar from Carthage. ZEBRA, 16, Com. R. Mc Crea, 5th February, at Straits of Malacca.

Births.

On the 12th May, the lady of Lieut. C. Caldecot, R.N. of a son and heir.

At Haylands, near Ryde, on the 25th May, the lady of Capt. C. Lock, of a son.

At Fleet, near Weymouth, on Monday, the 21st May, the lady of Lieutenant W. Pedder, R.N., of a son.

Marriages.

At St. George's, Hanover-square, Major-General Sir Thomas Hawker, to Mary, widow of Captain the Hon. F. Noel, R.N.

At Hove, near Brighton, on the 21st May, by the Rev. John Wolley, Captain William Fanshawe Martin, R.N., eldest son of Admiral Sir Byam Martin, to Sophia, second daughter of Richard Hurt, Esq., of Wicksworth, Derbyshire.

On the 31st May, at All Saints Church, Southampton, by the Rev. J. E. Shadwell, John Wynne, Esq., Royal Horse Artillery, to Ann, third daughter of Rear-Admiral Sir Samuel Warren, C.B., and K.C.H.

Lately, at Bruges, Captain Wheatley, R.N., to Caroline, second daughter of M. Hope, Esq.

At Cheltenham, Captain Campbell, R.N., to Georgina, daughter of the late Colonel Martin.

At St. Luke's Church, Chelsea, on the 2nd June, Lieut. James Francis Browne, R.N., to Miss M. Wolfe.

At Cambridge, the Rev. M. Wilkinson, M.A., Fellow of Clare Hall, to Rosa Sarah, only daughter of the late Captain Lea, R.N.

Deaths.

Died on the 24th May, at Stonyhurst College, aged 21, Joseph, the second son of Lieutenant Nind, R.N.

At Manheim, on the 19th May, Capt. William Paterson, C.B., R.N., fifth son of the late George Paterson, Esq. of Castle Huntley, Perthshire, and nephew of the Right Hon. Lord Gray, of Kinfauns Castle, in the same county.

On the 21st May, at Kingsand, near Plymouth, Lieut. Richard Glinn, R.N. (1794), aged 80 years.

On the 16th May, Lieut. A. Brooking, late Commander of the Pike.

Lately, Lucy, the wife of the Rev. Charles Hardy, late of the Royal Navy, and only daughter of Capt. James Campbell, R.N.

At Galway, Lieut. Adlard Miller, R.N., Commander of the Dolphin.

At Aberdeen, Lieut. W. Lesley, R.N., aged 57.

At his residence, Catisfield, near Fareham, Moses Hawker, Esq., aged 73, and a Purser in the navy of 50 years standing.

At the Island of Ascension, on the 14th of April, Captain Wm. Bate, of the

Royal Marines, and for some time past Commandant of that Island.

At Bath, on the 19th May, aged 19, Catherine Campbell, only surviving dau. of the late Capt. Thos. McCulloch, R.N.

At Lavington, near Weymouth, on the 1st June, James Mac Ghie, Esq., R.N.

At Bristol, aged 82, Mary, widow of Lieutenant Young, R.N.

On Sunday, the 20th May, at his residence, South-grove, Peckham, Surrey, in the 86th year of her age, Mrs. Catherine Cleverley, relict of Robert Cleverley, Esq., R.N.

METEOROLOGICAL REGISTER,

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

MAY, 1838													
Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	M.	In Dec.	In Dec.	0	0	0	0	S.W.	S.	4	3	Bc.	Bc.
22	Tu.	29.53	29.58	57	63	49	64	S.	S.W.	4	4	Od. (2)	Op. (3)
23	W.	29.80	29.82	54	55	44	56	N.W.	N.W.	4	4	O.	Op. (3)
24	Th.	29.90	29.93	49	54	46	56	N.	N.	4	4	Od. (2)	Bcp. (3)
25	F.	30.00	30.00	48	61	46	62	N.	N.E.	3	3	O.	O.
26	S.	30.06	30.08	50	56	45	61	N.E.	N.E.	4	4	O.	Bc.
27	Su.	29.97	29.85	51	55	40	57	E.	N.E.	4	4	Bc.	B.
28	M.	29.56	29.56	54	63	44	64	E.	S.	3	3	Or. (2)	Bcp. (3)
29	Tu.	29.66	29.68	59	63	49	65	S.W.	S.W.	4	5	Bcp. (1)	Bc.
30	W.	29.80	29.85	58	64	50	68	S.W.	S.W.	3	3	Bc.	Bc.
31	Th.	29.92	29.94	64	71	49	72	S.W.	S.W.	2	3	Bc.	Bcptl (3)(4)

MAY—Mean height of the Barometer = 29.96 inches; Mean Temperature = 51.8 degrees; Depth of Rain fallen = 1.40 inches.

JUNE, 1838.

1	F.	29.06	29.92	59	65	50	69	S.W.	S.W.	3	3	Bc.	Bcp. (3) (4)
2	Su.	29.82	29.78	58	67	51	69	S.W.	S.W.	3	3	O.	Bcp. (3)
3	S.	29.80	29.76	60	65	49	67	S.W.	S.W.	3	3	Bc.	Bc.
4	M.	29.72	29.75	61	64	50	67	S.W.	S.W.	3	3	B.	Bcp. (3)
5	Tu.	29.92	29.91	59	66	45	66	S.W.	N.W.	3	3	B.	Bc.
6	W.	30.04	30.07	51	54	49	58	N.W.	N.	4	5	O.	Og.
7	Th.	30.20	30.17	54	58	43	60	N.W.	N.W.	4	6	Bc.	Qbc.
8	F.	30.24	30.26	49	55	41	56	N.	N.	4	4	Bc.	Bc.
9	S.	30.21	30.16	61	66	38	68	S.	S.W.	2	3	Bcm.	Bcm.
10	Su.	29.78	29.72	60	63	46	64	S.	S.	4	4	O.	Or. (4)
11	M.	29.52	29.52	58	65	52	67	S.E.	E.	3	3	Od. (2)	Or. (3)
12	Tu.	29.56	29.60	59	60	50	66	S.E.	S.E.	3	2	O.	Bcp. (3)
13	W.	29.66	29.68	54	62	46	63	N.W.	S.W.	2	2	O.	Or. (4)
14	Th.	29.75	29.78	60	66	48	66	S.W.	S.W.	4	4	Bc.	Bcd. (4)
15	F.	29.76	29.73	61	65	51	67	S.W.	S.	3	3	O.	Or. (3)
16	S.	29.81	29.83	64	70	51	72	S.W.	S.	2	2	O.	Or. (4)
17	Su.	29.87	29.85	65	72	59	74	S.W.	S.W.	2	2	Or. (1)	Bc.
18	M.	29.62	29.58	72	73	59	74	S.	S.	3	5	Bctlr. (2)	Bcp. (4)
19	Tu.	29.80	29.86	62	66	54	68	S.W.	S.W.	7	6	Qbcp. (2)	Qbcp. (4)
20	W.	29.74	29.70	62	63	53	65	S.W.	S.W.	6	6	Qor. (1) (2)	Qod. (3)

NOTE.—On the 9th of June, a hoar-frost on the grass on Blackheath, &c. at sunrise!

ORIGINAL PAPERS.

AUGUST, 1838.

REMARKS ON THE NAVIGATION OF THE GULPH OF MEXICO TOWARDS VERA CRUZ, AND THENCE ALONG THE COAST TOWARDS LAGUNA DE TERMINOS.

VESSELS from Great Britain proceeding towards Vera Cruz, Tampico, or other Mexican ports in the Gulph of Mexico, generally after running down the trades, pass into the Carribbean sea among the West India islands; the clearest and most direct route being that between Antigua and Guadaloupe. Passing on either side of Montserrat, thence along the south coast of St. Domingo towards Jamaica, along the north shore of that island, the south-west end of the Grand Cayman, they enter the gulph between Capes Antonio and Catoche. These remarks refer to vessels navigating by chronometers, which every vessel going to the Gulph of Mexico ought to have, the currents being not only strong, but uncertain and irregular in their direction. On a late occasion, under rather trying circumstances, I crossed the gulph homeward bound in eight days, without a single opportunity of procuring a lunar distance either by day or night, while at the same time I was only one day without sights for the chronometer.

From the south-west end of the Grand Cayman in the fine season, from March to October, vessels may shape a course to enter on the Campeche Bank, not far from Cape Catoche. By going over towards Cape Antonio the distance is lengthened, and the passage often retarded by the current setting round to the south-eastward as mentioned in Purdy's directions. In the season of the norths from October to March, a more northerly course may be steered, in order to keep the vessel to windward in the event of a north blowing. Between Capes Antonio and Catoche, a current will generally be found to the north-westward. I have never had less than sixteen to twenty-four miles in twenty-four hours, and never more than thirty miles, at all the various seasons. It has, however, been found much stronger.

Having once struck soundings bound to Vera Cruz, or other ports to the southward, a course may be shaped to pass about twenty miles to the southward of the Alacranes shoals. In this course you will be enabled, in the event of a norther, to pursue your passage, carrying moderate press of sail, and if necessary edging away to leeward. If bound to Campeche or Laguna you may sight the land off Sisal, passing *inside* the Sisal shoal, and when round Point Piedras, steer

along shore in a convenient depth of water. If bound to Vera Cruz, the best and clearest passage off the bank, is between the Baxo Nuevo, and the Triangles. If in the season of the norths (from October to April) a course may then be shaped for Point Delgada, so that should a norther prevent your running down for the harbour, you may be enabled to keep to windward of the port. In the event of being caught in a norther in the neighbourhood of the Campeche Bank, the navigator is recommended in the directions hitherto published, to run on the bank for shelter, as there the water will be found smoother; or to bring up in a convenient depth of water. This will undoubtedly mislead the inexperienced, as I have invariably found, a more dangerous, short, unequal sea on the bank, in a gale than off it, and bringing up except in one particular place, would in most cases cause the loss of anchors and cables, if not the vessel. This one place where vessels may bring up with safety in a norther, is on the long, equal flat, or shoal, lying in the neighbourhood of the town of Campeche. Any where between Jaina to the northward, and Champoton to the southward, you may ride in the greatest safety, bringing up in a convenient depth of water. I have anchored in December and January on this bank in very severe norths, and never had any great strain on the cables. The water is also very smooth.

In running for Vera Cruz, from the fairway between the Triangle and New Shoal, keep well to the northward in all seasons, particularly in the season of the norths, as the currents on the coasts are strong, and their direction uncertain. Steer towards Point Delgada, keeping a strict watch on the weather. With the assistance of the barometer the approach of a norther may generally be known, the barometer generally falling two-tenths of an inch, or to about 29·80, twelve or fifteen hours previous to its commencement. So soon as the norther sets in the barometer begins to rise and generally attains 30·20, or 30·30. The falling of the barometer and a very light wind, generally from the southward, with a light mist or haze on the horizon, are pretty sure indications of a gale. Previous to the commencement of the gale the current generally runs to the northward, after its commencement to the southward. These currents are strong, and have caused some melancholy accidents. When running down for the coast, great care ought to be taken to get observations for latitude as often as possible. Do not rest contented with the sun's meridian altitude, but ascertain your latitude from the planets, fixed stars, or moon, as often as possible. If a norther commences blowing when you are approaching the coast, and you are a sufficient distance to windward, keep as much sail as you can on the vessel, and make short tacks, so that on the gale decreasing, you may be able to gain the harbour previous to the commencement of another. Vessels standing out during the strength of a norther on one tack, are such a distance off, that they cannot reach the anchorage before another.

I have known vessels ten days knocking about on this account, after having been in sight of the coast, immediately to windward of Vera Cruz. Previous to the commencement of a gale, the high lands to windward of Vera Cruz may be seen a considerable distance off, and afford an excellent mark. The snow-capped peak of Orizaba* and the Cofre de Perote to windward, and the volcanic mountain of Tuxtla to leeward, are easily recognized.

In running down for the harbour from a position to windward, care must be taken not to get to leeward, as Vera Cruz is situated in a deep bight, and from erroneous calculations of the distance of the high land strangers frequently get to leeward, and are in danger of the reefs. The coast in the immediate neighbourhood of the city is very indistinct, being a low range of sandhills. Keep a good look out from the mast-head, and, when once seen, it is easily kept sight of, the spires of the cathedral and lighthouse being very conspicuous. I would on no account recommend running down for the light at night. In any season it is dangerous. The light is good, and is a good guide when you are close to the fort before dark, and cannot enter, enabling you to keep your vessel in a proper position till morning. Between the northers in their season, and in the fine season, the land and sea breezes are tolerably regular on the coast, the former coming off from the westward shortly after sunset, and giving place to the sea-breeze at 9 or 10 A.M. The land-wind is in general very light. If, in running towards the harbour with the castle in sight, with the sea-breeze, it is seldom so far to the northward as to permit your entering by the northern channel, between the castle and Punta Gorda. You must keep up on the larboard tack until you see the Blanquilla reef. So soon as this is observed, steer directly towards it, until about two cables' length distant, then keep away between it and the reef on which the castle is built, keeping about a cable's length from it. The reefs are very well laid down in the plan of the harbour in Laurie's chart of the Gulph, copied from the Admiralty chart, and no danger can arise, as you can easily see the channels; and, in the event of its falling calm, you can always let go an anchor, taking care, however, to warp into the harbour as early as possible. The pilots come out a very short distance, seldom going outside the reefs; when on board they are of very little service, as they know nothing of working a vessel; they will merely point out to you a position for anchoring. In the season of the norths not a moment should be lost in securing your vessel. In the fine season, moor with two bowers, one N.W. and the other S.E.; in the season of the northers, moor with two bowers ahead to the north, taking great care that your anchors are clear. Pay out a long scope of cable, then carry out your stream anchor as far as your hawser will reach to the S.E., and heave it taut,

* See a sketch of this in our vol. for 1835, p. 153.

send down top-gallant masts and yards, and see all clear to hoist your topmasts. Take care also to hoist up your boats every evening, and give your long boat, if out, a good scope of painter. There is seldom time to make any preparation after the norther commences. In getting into a berth, endeavour to get your anchors as close to the reef as you conveniently can. There are rings in the castle wall, to which old directions recommend your mooring. Most of these are now broken, and the remainder so decayed as not to be trusted.

I have seen several accidents happen in this harbour through carelessness in mooring. Never, on any account, trust the pilot to moor your vessel in this harbour: see to it yourself; see your anchors well stocked, (if iron stocks,) and everything complete previous to coming to. If the vessel once starts, there is no room again to bring-up, as the breakers are close astern. Should you enter the harbour with the breeze from the E.S.E., or eastward, and let go your anchor; always take care to weigh this anchor before you moor, as the vessel swinging to the E.S.E. breeze, would be sure to give you a foul anchor, if you merely haul her stern round. Yet I have actually seen a man, calling himself a seaman, do this very same thing; the consequence of which was, no sooner did a light norther commence blowing, than the anchors came home, and had one of them not fortunately hooked the anchor of another vessel, his vessel would undoubtedly have gone ashore. In Vera Cruz there is very little trouble with cargo, as the custom-house has excellent lighters for discharging. Vessels going to Vera Cruz with the intention of afterwards proceeding along the coast to Laguna, should endeavour to bring as much ballast with them as possible, as it is very expensive; a lighter load, which they call twenty tons, (but which you will find considerably less,) costing fifty-five dollars.

In leaving Vera Cruz for Laguna, in the fine season, so soon as you are clear of the reefs, you can take advantage of the land and sea-breezes, and beat up alongshore, taking care to give the reefs off Point Anton Lizardo a good berth; afterwards your lead is a sufficient guide. Having advanced as far as Chiltepeque, or Tabasco, you will often find a strong current running alongshore to the northward; and, in order to avoid being driven to leeward with it, when the sea-breeze dies away, it is advisable, in the fine season, to bring up, with a kedge and hawser, having everything in readiness to heave away on the setting in of the land wind. Sailing along the coast from Vera Cruz, the entrance of the Lagoon is easily recognized by its forming a wide gap in the trees. The masts of the vessels in the harbour will be seen over the west end of the Island of Carmen, the trend of the coast to windward of Laguna, also, is widely different from that of the coast to leeward. The appearance of the coast to leeward is one uniform level, with no distinguishing marks. You are told in the books of directions to look for the Altos, or mountains of St.

Gabriel, and they are placed in the charts immediately contiguous to the coast. They are, however, in fact, far inland; and, in a number of voyages which I have made to this place, I have never seen them but once, and then only for a very short time, while the atmosphere was particularly clear. No one need, therefore, trust to seeing them.

In the season of the norths, on leaving Vera Cruz, stand well out to the north-eastward, in order to gain such an offing as to enable you to run with a norther, and when it does come on, carry such sail, as you think will bring you pretty near the coast at its conclusion, always recollecting to steer well to windward of Laguna. When you make the coast, you may be uncertain, from want of observations, whether you are to windward or to leeward. In the first place, notice carefully your soundings; to windward you will have pretty hard bottom, with four and five fathoms, about three miles from shore: to leeward you will have very soft mud, and be five miles from shore in four and five fathoms water. Secondly, observe carefully the direction of the coast: as before observed, the coast to windward has a very different bearing from the coast to leeward: in the third place, the appearance of the coast to windward is very different from that to leeward: the land to windward appears at a distance as if indented with small hillocks; it is, in fact, only irregularities in the trees; to leeward the coast presents a most uniform appearance, being one continued level. I have often heard of great difficulty being experienced in making the coast, and recognizing the place, but have never found much, from attention to the foregoing remarks. I may here observe, that the hand-lead-line ought to be very particularly marked in going to Laguna, (I have often seen lead-lines a foot or two wrong in two fathoms,) moreover, on this coast, my lead-line is always marked to feet between two and three fathoms.

In running for the entrance of the Lagoon from the westward, keep your lead going, and be careful not to approach the coast off Punta Xicalango, the western entrance of the Lagoon, as a bank, with only eight to ten feet on it, extends a considerable distance from the point. Having made the island of Carmen to windward of the Lagoon, keep the lead also going in running down; and, on approaching the west end of the island, which forms the eastern side of the entrance to the Lagoon, give the shore a good berth, as a shoal, partly dry, extends a long distance from the point. Bring the west end of the island of Carmen to bear S. by E., and the extreme point of land to the westward, S.W. by W., you will then be in about three and quarter fathoms, and if the pilot be not out, in a fit place to anchor, and wait till he comes. The pilots come out with the land wind in the morning, in small canoes, and lay off, fishing until two P.M., when they return with the sea-breeze. If, therefore, you make the port in the afternoon, it will be necessary to wait till morning, as it is very

unadvisable for a stranger to attempt entering without a pilot. Should, however, any untoward circumstances occur, to render it necessary, by attending to the following directions, a vessel may be conducted over in safety.

From the above-named anchorage steer S.W., keeping a look-out for a few Indian huts, situated on the western shore, (you can ascertain their position from the masthead previous to entering.) So soon as you bring the village to bear south, or little westerly, steer for it, until you get into $2\frac{1}{2}$ fathoms; keep along the western shore in this water, until the centre of the town of Laguna bears east; then haul up towards it, anchoring when convenient, in about five fathoms, two hundred yards from the shore. In several voyages to this place, I have made the longitude of the fort, $91^{\circ} 40' W$, the mean of three chronometers well regulated, from Vera Cruz, assuming the longitude of the castle of St. Juan de Ulloa to be $96^{\circ} 7'$, (sights taken in an artificial horizon.) The latitude I have made $18^{\circ} 37' 30'' N$. Vessels may load up inside the bar to $12\frac{1}{2}$ feet, taking water and long-boat in; you must then proceed outside the bar to a sufficient depth of water, and complete the cargo with lighters. There is a very heavy sea when riding outside the bar, in a norther, but I never heard of many accidents occurring. The holding ground is excellent, and, with one anchor and a large scope of cable, you may, in general, ride in safety.

Homeward bound from Laguna, at all seasons, I prefer keeping along-shore on the Campeche Bank, in my opinion, as the safest and speediest passage. On this coast, you have in general strong land winds; so much so, that in several voyages, I have seldom been more than forty-eight hours from Laguna to Point Piedras. When the land-wind ceases, you can stand in-shore with the sea-breeze, your lead being a sure guide all the way, up to Point Piedras. There is only a shoal spot off Jaina to be avoided, on which, I believe, there are sixteen to eighteen feet water. When as far as Point Piedras, in the season of the northers, it is advisable to make as much northing as possible, in order to be able to run to the eastward, with a norther when it blows: in the fine season you can take advantage of the winds, standing on whichever tack, is most favourable. On passing Point Piedras, however, care must be taken to avoid the Sisal shoal, and the Madagascar, or new shoal, on which H.M. frigate Madagascar struck, and remained some time, on her passage from Vera Cruz to Jamaica, in July, 1837. She got off, after heaving overboard several guns, and losing an anchor and chain. The officers of the frigate surveyed the shoal, and found it to be a coral reef, extending $1\frac{3}{4}$ miles N.N.E. to S.S.W., the least water on it sixteen feet; its centre they placed in $21^{\circ} 25' 30'' N$., and in $90^{\circ} 25' W$. I have heard the existence of this shoal doubted by several persons, they affirming that it must have been the Sisal shoal, as no vessel has hitherto been known to have touched on it. This may be from the generality of vessels

trading to this part of the gulph, being of a light draught of water, or from the recent formation of the coral, of which it is composed. However, its existence is undoubted, as we have the authority of the officers of the Madagascar; and, not three months after, she was aground on it, I passed over it in the vessel under my command, then drawing $14\frac{1}{2}$ feet; the vessel touched once lightly abaft the mizen-mast, there was a heavy swell at the time; it is steep to, as so fast as I could pass the lead overboard, we had five fathoms, seven, eleven, and thirteen in succession. I then made the lat. $25^{\circ} 30'$ and the long. $90^{\circ} 28' W.$, by chronometer. After beating off the bank, the navigator may proceed through the Strait of Florida, by the very copious directions given in Purdy's Colombian Navigator.

During my residence on the Mexican coast, at various seasons, I have never observed any regularity in the rise and fall of water; it is more a current than a tide, influenced mostly by the winds; and this is also the opinion of the pilots and fishermen on the coast. The bearings given are magnetic.

MEXICANO.

BEACHY HEAD LIGHT.

MR. EDITOR,—Captain M. White's directions for channel navigation, published by authority of the Admiralty, have puzzled me for some time past, with respect to the Royal Sovereign shoals, and I have only just been able to satisfy myself, that there is a considerable error therein, which I might sooner have found out, by mere reference to the bearings he gives us, were it not that the book seemed to demand entire confidence.

It is stated therein, (page 51,) that the centre of the Royal Sovereign shoals lies from Beachy Head, N. $86^{\circ} E.$, $6\frac{1}{2}$ miles., and that the light in sight clears them half a mile. The light, he further says, is only open, bearing N.W. $\frac{3}{4} W.$; also, (p. 52,) that a course, E. $\frac{1}{4} S.$ from any position off Beachy Head, takes you the same distance from Dungeness, the bearing of the centre of the shoals from the head being *true*, the courses and bearing upon which the light is visible, being compass.

Now there is an evident inconsistency in all this; taking for granted that the shoals bear true, N. $86^{\circ} E.$ Steer from directly off the head, S.E. $\frac{3}{4} E.$, which you must do to keep the light in sight; and how much short of *two miles*, (instead of half a one,) will this carry you to the S. of the shoals? Again, at an offing of one and a half, or even two miles, steer E. $\frac{1}{4} S.$; and how does this clear the shoals? From the former distance you must be carried without them, and from the latter right upon them. I have adopted a course of E. by S. $\frac{1}{2} S.$,

from an estimated distance of one and a half mile from the head, and suppose, that by so doing, I pass about half a mile outside the shoals. (then E. to Dungeness,) but I shut in the light, at about one half the distance from Beachy Head to the shoals.

I am of opinion, that this light is very much misplaced, and that it should have been upon the very pitch of Beachy Head. If I am right in the above statements, it is evident that it is not to be used as a mark, to clear the Royal Sovereign shoals, except at a very great loss of distance. Were the light upon the headland itself, a bearing of it would do very well, but going westward, no one knows when to open it. Beachy Head, proverbially dark as it is, (especially from the E.,) you cannot estimate your distance from, and the consequence is, a great loss in increasing your distance. As the *Nautical*, Mr. Editor, seems the proper channel for such remarks as these, I take the liberty of addressing them to you.

I can only account for this error not having been sooner taken notice of, from the little attention which has always been paid to these shoals, arising from all large ships, those in the foreign trade generally, keeping too far out, to make it necessary to bestow any thought upon them, but as Capt. M. White says, there is only nine feet water upon them, it is evidently necessary for some correct directions being given respecting Beachy Head Light, in reference to them, for the use of those vessels, which find it convenient to navigate nearer the shore.

I am, Sir,

Your obedient servant,

A MASTER OF A BRITISH MERCHANT SHIP.

[It is clear on a reference to the chart, that an E. $\frac{1}{4}$ S. course, as given in Captain White's book, will lead a vessel from Beachy Head to Dungeness, but it is not stated that she must be at least four miles off the Head, when steering that course, to clear the shoals in question. Nor is it stated when a vessel may open or shut in the light, when passing the Head. We may, therefore, recommend, that vessels passing down channel or from the eastward, should not get into less than fifteen fathoms before they open the light: they may then steer a channel course to pass Beachy Head. And vessels coming from the westward up channel, when passing Beachy Head, should not shut in the light till they have deepened their water to fifteen fathoms, when they will be sufficiently outside the shoals to steer the course E. $\frac{1}{4}$ S. for Dungeness, which course will take them about five miles from it.—Ed. N.M.]

TABLE XXXIV.

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

1 Warsaw foot = 0·9769503121 English foot.

1 English foot = 1·0235935115 Warsaw foot.

Polish or English feet	English feet, and Dec. parts.	Polish feet, and Dec. parts.	Polish or English feet	English feet, and Dec. parts.	Polish feet, and Dec. parts.	Polish or English feet	English feet, and Dec. parts.	Polish feet, and Dec. parts.
1	0·977	1·024	40	39·078	40·944	79	77·179	80·864
2	1·954	2·047	41	40·055	41·967	80	78·156	81·887
3	2·931	3·071	42	41·032	42·991	81	79·133	82·911
4	3·908	4·094	43	42·009	44·015	82	80·110	83·935
5	4·885	5·118	44	42·986	45·038	83	81·087	84·958
6	5·862	6·142	45	43·963	46·062	84	82·064	85·982
7	6·839	7·165	46	44·940	47·085	85	83·041	87·005
8	7·816	8·189	47	45·917	48·109	86	84·018	88·029
9	8·793	9·212	48	46·894	49·132	87	84·995	89·053
10	9·770	10·236	49	47·871	50·156	88	85·972	90·076
11	10·746	11·260	50	48·848	51·180	89	86·949	91·100
12	11·723	12·283	51	49·824	52·203	90	87·926	92·123
13	12·700	13·307	52	50·801	53·227	91	88·902	93·147
14	13·677	14·330	53	51·778	54·250	92	89·879	94·171
15	14·654	15·354	54	52·755	55·274	93	90·856	95·194
16	15·631	16·378	55	53·732	56·298	94	91·833	96·218
17	16·608	17·401	56	54·709	57·321	95	92·810	97·241
18	17·585	18·425	57	55·686	58·345	96	93·787	98·265
19	18·562	19·448	58	56·663	59·368	97	94·764	99·289
20	19·539	20·472	59	57·640	60·392	98	95·741	100·312
21	20·516	21·495	60	58·617	61·416	99	96·718	101·336
22	21·493	22·519	61	59·594	62·439	100	97·695	102·359
23	22·470	23·543	62	60·571	63·463	150	146·543	153·539
24	23·447	24·566	63	61·548	64·486	200	195·390	204·719
25	24·424	25·590	64	62·525	65·510	250	244·238	255·898
26	25·401	26·613	65	63·502	66·534	300	293·085	307·078
27	26·378	27·637	66	64·479	67·557	350	341·933	358·258
28	27·355	28·661	67	65·456	68·581	400	390·780	409·437
29	28·332	29·684	68	66·433	69·604	450	439·628	460·617
30	29·309	30·708	69	67·410	70·628	500	488·475	511·797
31	30·285	31·731	70	68·387	71·652	550	537·323	562·976
32	31·262	32·755	71	69·363	72·675	600	586·170	614·156
33	32·239	33·779	72	70·340	73·699	650	635·018	665·336
34	33·216	34·802	73	71·317	74·722	700	683·865	716·515
35	34·193	35·826	74	72·294	75·746	750	732·713	767·695
36	35·170	36·849	75	73·271	76·770	800	781·560	818·875
37	36·147	37·873	76	74·248	77·793	900	879·255	921·234
38	37·124	38·897	77	75·225	78·817	1000	976·950	1023·594
39	38·101	39·920	78	76·202	79·840			

PACIFIC ISLANDS.—*Extract of a Letter from Captain Bruce,
H.M.S. Imogene, at Valparaiso, Jan. 14, 1838.*

DURING our late cruize of twenty-one weeks in the Pacific, we have fixed the position of the "Felix and Ambrose Group," and the islands of "Bellinghausen," "Rimitara," and "Rurutu," near the Society islands. All the islands to the northward and westward of these require surveying and examination; the wrecks upon them are numerous; and some of the inhabitants are savage, and others very well disposed and friendly. The islands of

Ascension 6° 50' N. . . . 163° 25' E.

Strong 5° 5' N. . . . 158° 20' E.

Pleasant Isl. . . . 0° 33' S. . . . 167° 4' E.

for example, are inhabited by people who are disposed to kindness and friendship, but being now infested with runaway convicts from New South Wales, and by them instructed in acts of piracy, cannot be trusted.

[We do not find the former of these islands in the charts. The others are laid down as follows:—

Strong I. 5° 25' N. 163° 12' W. by Arrowsmith.
(not in Kruzenstern.)

Pleasant I. 0° 20' S. 167° 18' E. by Arrowsmith.
0° 15' S. 167° 4' E. by Kruzenstern.

Ed. N.M.]

VOYAGE OF HER MAJESTY'S SHIP *ACTÆON*, CAPTAIN THE RIGHT
HONOURABLE LORD EDWARD RUSSELL.

*Valparaiso to the Marquesas, Sandwich, Tahiti, and Pitcairn
Islands.*

WE sailed from Valparaiso on the 29th August, 1836, and after a pleasant and interesting passage of thirty-five days, (having found the trade-wind in latitude 23° 51' S., which carried us to the island,) we anchored in Resolution Bay, off Santa Christina, one of the Marquesas, on the 3rd of October.

The natives of this place, only a short time ago, lived in all the horrors of cannibalism, superstition, and ignorance; continually making war upon each other and the neighbouring islands, and perfectly unknown in the intercourse of the world. Cook, although he has described these islands, and given a short account of their manners and customs, together with a small history of the people themselves, has not related much of their character, appearance, or their general mode of living. Since his time they have become more civilized; Europeans have become more familiar with them, and from such intercourse they have gained confidence in themselves, and become com-

paratively enlightened. There are two English missionaries residing on the island, who have so far influenced the mind of the king (who is a well-inclined man) as to induce him to forbid the eating of human flesh, and offering human sacrifices, and to destroy their idols, so that barbarism is gradually yielding to civilization. The natives appear to be partial to the English, calling the king of England their friend. The land of Santa Christina is very high, 2,000 feet above the level of the sea; the soil is fertile, the valleys being covered with cocoa-nut trees, plantains, and bread-fruit, small firs, &c. Cotton grows in abundance, and is of a superior quality. The men wear only a small piece of drapery, manufactured from the bark of the mulberry tree, and are stout, tall, and well made; very active, mild, humane, and hospitable. The average height of the men is five feet ten inches; although there are many six feet. The men are tattooed all over their body, which gives them a very curious appearance. Their colour being copper, the tattooing makes them nearly black. The tattooing is done with a powder obtained from the candle-nut, which is so called from being used by them to give them light. It is about the size of a walnut, and the wood of an oily nature. The females are better clothed than the men, and are less tattooed, lively, volatile, and fond of pleasure. With all these qualities, they appear incapable of conjugal affection, parental fondness, filial reverence, or social attachment; uniting with all these many of the vices and weaknesses of polished society. The king and chiefs appear to be selected from their size, as the king was the largest man in the island, and the chiefs next to him in size. We trafficked with them for their ornaments, and anything curious they had, they taking in return tobacco, powder, (which they valued very much,) and particularly old clothes. We gave them old uniforms, and cocked hats, which they immediately put on, and strutted about apparently conscious of the sensation they created among their companions, who looked upon such presents with an eager and jealous eye. They were generally very fair in their dealings; but unfortunately, from our too great desire and anxiety to possess ourselves of what to us was wonderful and curious, we spoiled the market, for they soon became knowing enough to find out that we would go to almost any length to get them.

Their food consists of cocoa-nuts, bread-fruit, and fish, which they eat raw, and, as a sauce, use salt water! The bread-fruit is baked in a stone-oven, and is excellent. It has much the taste, if such can be imagined, of a mealy potato, and a yam mixed together and baked.

They devour fish without the trouble of cooking it; the inside is taken out, and it is then washed in salt water. Water is not very plentiful at Santa Christina, and a ship finds great difficulty in obtaining it, on account of the surf and the rocky approach of the shore. The heavy rains, in a great measure, form their only resource in this most useful article, the water pouring into the valleys from the heights above.

We were obliged to float the Actæon's casks on shore, and even then had much difficulty in filling them, and getting them off again. Resolution Bay is very commodious, and affords safe anchorage. It is about three-quarters of a mile from point to point; that is, from N. and E. to S. and W.; and from thirty to ten fathoms of water, a fine sandy bottom. It contains about two hundred inhabitants, and the whole island about three hundred. Pigs and fowls are the only *European eatable* inhabitants of the island; the dog is found here, but a complete cur.

At Dominica, only three miles from Santa Christina, the natives are still cannibals, and devour their prisoners of war; white men they merely kill, not liking their flesh, saying, "It is too salt."

The natives of Santa Christina are certainly the most splendid race of men in the South Seas; no others are to be compared to them. Captain Cook assimilates them, in appearance as well as language and customs, to those of Tahiti, but it will ever be a matter of doubt and argument how these islands were first peopled. The Chinese caste of countenance is observable in many; their images and carving are all Chinese; the way they dress their hair is Chinese.

On Thursday, October 1st, we departed from our anchorage in Resolution Bay, with a breeze from the northward, and steered a N.W. $\frac{1}{2}$ N. course for Oahu, the principal of the Sandwich Islands; passed Hood's Island, to windward. Saw the Island of Hooapoah, and in the afternoon passed it to leeward. This island has a most remarkable appearance. At 4 P.M., altered course for Noohiva of the Marquesas,* but the night being squally, and very dark, we bore up again for Oahu. On the 7th we passed the Hergest rocks, with wind moderate from eastward, and crossed the line on the evening of the 10th, in longitude $144^{\circ} 43' W.$; wind, E.N.E, fine W.; running nine knots. I am induced to give this journal of our passage from day to day from the Marquesas to the Sandwich Islands, as it may be of use to those who may go that road hereafter, and show them the prevailing winds at this time of the year.

A ship on a voyage from Valparaiso to the South Sea Islands, allowing that she touches at the Marquesas in the first place, should steer a N.W. course, as by doing so she will sooner obtain the trade-wind. We steered more to the westward, and consequently did not fall in with it until the latitude of $23^{\circ} 51' S.$, thereby making a longer passage than otherwise. On the 23rd, we anchored in the outer roads of Oahu, the wind not allowing us to go in further. At day-light of the 24th, we were towed into the basin of Honolulu, by the boats of the whale ships at anchor. The channel, from the outer to the inner roads, is very remarkable. Buoys are laid down on the eastern side, to which we made fast our warps. The rocks between which the chan-

* See S. directions for Santa Christina, in our February Number, page 73, by Mr. Biddlecombe, master of the Actæon.

nel lies from the outer to the inner roads, are dangerous, and the channel with only nineteen feet water in it, appears left purposely by nature as a passage for ships.

We saluted the king (Tamiameha III.) with twenty-one guns, which he returned with the same number, from cannon of all sizes. The fort is large, and very conspicuous from its being painted white; it is built of turf, and contains about forty pieces of cannon, a great number of them being so old and bad that it is too dangerous to fire them. Canoes came off the instant we anchored, bringing milk and fruit, which were very acceptable. In point of civilization, Woahoo seems to have surpassed the other islands of the South Seas, owing, no doubt, to the more frequent intercourse with Europeans. It has also the advantage of some American missionaries, who have succeeded in making it unlawful for any man to cultivate more ground than is actually necessary for his support, and in establishing various oppressive laws, which are not calculated either to add to the happiness or prosperity of the islands. A chief once told me, that when a native sells a pig, and supposing that he gets eight dollars for it, he is obliged to give four to the king, and two to the chief of his district, who can even demand the other two if he pleases, so the poor native, for the value of his pig, and the expense he has been at in feeding it, only gets two dollars. The same system is observed with regard to all other articles belonging to the natives, which at some future period, if persisted in, will produce murders, stratagems, and crimes, and all the horrors of civil warfare. The present effect of this mistaken policy is, that hundreds of natives are seen idle, having no encouragement to work or cultivate the land.

The seat of government is at a town called Honolulu, containing about seven thousand inhabitants, of which number from 300 to 400 are English, American, &c., the greater population being Americans. The king is a young man, twenty-one years of age, intelligent, if his energies are roused, but otherwise stupid, given to drink, and other immoralities, which the missionaries rather encourage, as by so doing they flatter him and keep up their power. The queen-regent is a bigoted old woman, thwarting the king in any good he may be inclined to do, and forming a strong party-feeling in the island. We arrived fortunately for the residents most opportunely, as our presence was required to bring the king to a right understanding concerning Europeans and the native government. Property was unsafe during even the lifetime of the owner, and after his death it went to the king, thus leaving his children (if he had any) poor and unprovided for. This, with many other important regulations, was duly settled by Lord Edward Edward Russell, much to the joy and benefit of the residents. Mr. Charlton, the English consul is an excellent man, and particularly well adapted for the situation he holds there. Firm and decided in his character, he keeps the native government in order;

and his demands are punctually attended to. We had several opportunities of bearing testimony to his good qualities.

The principal production of Oahu are potatoes, (sweet and common), bananas, plantains, cocoa-nuts, melons, of all sorts, and tara, a vegetable eaten and cultivated by the natives, and which has much the taste of a yam. Cotton also grows here, sandal-wood, and most of the fruits of equatorial latitudes. This island is capable of growing coffee, sugar, and other West India produce, to a great advantage, the soil being admirably adapted, and better in point of richness than any of the West India islands. The horses are excellent, and plentiful. Beef is not so common, but ships are supplied with it. The race of men, in point of stature and appearance, bear no resemblance to the other islands, being much inferior. This is attributed to their promiscuous intercourse and immoral mode of living. They have degenerated very much, and I am afraid are still on the decline.

This island, as well as most of the others, is volcanic; we observed the remains of several volcanoes, apparently very old. The soil, as in all volcanic islands, is of a dark nature, and particularly fertile, and, if properly cultivated, would yield an immense produce.

His Majesty paid frequent visits to the Actæon, and was much pleased with the attention he received. Once he came in a general's uniform, and witnessed our exercise at the great guns firing at a target; he was also much pleased with the manner in which the marines went through their drill.

On the 19th of November, the pilot came off, and after having done all the good we could for the residents, and impressing on the minds of the king and his chiefs the necessity of good and liberal laws, and cautioning them against oppression and cruelty, we set sail for Tahiti, (commonly called Otaheite), having the king and his chiefs on board. As soon as we got clear of the outer roads, they got in their boats, gave us three hearty cheers, which we echoed, and returned to Oahu. The wind was fresh from E.N.E., with a heavy sea. We crossed the line on the 2nd December, weather fine, and wind moderate from eastward; in longitude 156° 37' W. On the 4th, we passed between the position of Independence and Sarah Ann's Islands, as laid down in the charts, but saw nothing of them. Saw the islands of Bolabola, Maurua, and Otaha, on the 12th. Bolabola is very high, and very remarkable. There is a dangerous reef running between Bolabola and Otaha. 14th, saw Ulietea and Huaheine, also Sir Charles Saunder's Island. Tahiti may be seen on a clear day from seventy to eighty miles off, it being seven thousand feet above the level of the sea. These islands are all inhabited, and have missionaries upon them—I hope of a better caste than those of Oahu. We saw the Island of Eimeo on the 15th; a large and very remarkable island, distant thirty miles from Tahiti. At 10 A.M., of the 17th, a

pilot came off from Tahiti, and worked the ship to her anchorage in the harbour of Papiete, through a very difficult and dangerous passage.

This harbour, sometimes called Wilks' Harbour, is spacious, very deep, and capable of containing a great many ships. It is protected from the sea by a reef, which extends nearly the whole length of the island, and is a most extraordinary production of the coral insect. The entrance is very narrow, but has a good depth of water. The fort is on a small and beautiful island, outside the shipping, covered with cocoa-nut trees; and the guns, which are few, and of various sizes, are each housed in a small-roofed shed. The queen of Tahiti, Pomare, resides there when a man-of-war comes in, so people say, but she did not do so on our arrival. The land over the harbour is very high, and the appearance of the shore from the anchorage gives you a favourable idea of the place. Nor were we disappointed. The produce of the island is much the same as at the others, consisting of the usual tropical fruits. Beef is not bad, but the horses are few, and very inferior.

The natives are superior to the Sandwich islanders, resembling more those of the Marquesas, averaging five feet ten inches in height; well made, intelligent, and active; good features, and fine expression of countenance; they are particularly civil and obliging. They are also tattooed a little, and very well. The women are handsome, well made, and well conducted, and the natives generally have received much benefit from the missionaries; particularly from Mr. Wilson, who resides at Point Venus, and whose church is well attended: he also keeps a school, which is attended by nearly all the children on the island. The queen is favourable to civilization, and supports morality in all its degrees. Notwithstanding the use of spirits is forbidden, I have seen many cases of intoxication among the natives. Tahiti contains about 8,000 souls, established on different parts of it. We found it warmer here than in any other parts of the South Seas. The thermometer varied from 84° to 88°, and the atmosphere was close and sultry. We trafficked with the natives for shells, which are found in abundance; in return for which we gave them knives, tobacco, and handkerchiefs, &c. Gaudy ornaments, such as earrings, bracelets, &c., they prize little, but handkerchiefs and knives they value much. The Queen came on board during our stay, and was saluted with twenty-one guns, which pleased her very much, although she was rather frightened at first. She had refreshments in the captain's cabin, and in the evening went away. She is a portly personage, and appears to have had at one time some pretensions to beauty.

On the 27th of December, we set sail for Pitcairn's Island, so interestingly connected with the history of the *Bounty*. On the 29th, saw the Island of St. Paul's, bearing from us S. by E. to S.E. twenty-six miles, and on the 30th saw Gloucester Group.

January 3rd, 1837, we discovered a group of three islands, to

which we gave the name of Actæon's Group,* calling them separately Melbourne, Minto, and Bedford Islands. They were supposed to be discovered in 1834, by a Mr. Henry, the son of a missionary at Tahiti, and he named them after his wife Sophia Islands. But this is perhaps mere rumour, as in the latitude given by him they were not to be found. We made Pitcairn's Island on the 10th, the weather squally, and the wind strong from the northward. This, and the following day, were so squally, and the sea ran so very high, that we were nearly bearing up for Valparaiso, as we could not work to windward; but fortunately on the 12th, the wind moderated, and our captain landed. Three canoes came off to the ship, through a very heavy surf. In these were Edward, John, Matthew, and Arthur Quintal, George Adams, and Charles Christian. Edward Quintal brought a note from Mr. Hill, which he delivered in due form. Mr. Hill was the man that had imposed upon the simple natives, by making them believe he was sent out by the English Government to take charge of them, and look after their morals. They never being accustomed to any deceits of this kind, placed implicit reliance in all he said. The consequence was that he became their ruler, and at length acquired such power over them, that he could make them do anything he wished; although latterly they obeyed him more from fear than any admiration of his good qualities. We had heard of this man at Valparaiso, and consequently were very much prejudiced against him, and, as it turned out, most deservedly so. Mr. Buffett, whom Captain Beechey speaks of in his work, and to whom he gives an excellent character, was a passenger with us from Valparaiso. He had been long resident at Pitcairn's Island as a schoolmaster, and was much liked; but having a numerous family, was obliged to discontinue his services. This man was flogged by Edward Quintal, (Mr. Hill's right-hand man,) at his suggestion, for some trivial reason, and in consequence was obliged to leave, his wife and family remaining behind. His life even was considered unsafe. Things were in this state when we arrived, bringing back Mr. Buffett from his place of exile. We were heartily welcomed by all the island, to whom Mr. Hill, or, as we jocosely called him, Lord Hill, from his supposed importance, was very unpopular. Edward Quintal, with two or three more, were great supporters of Mr. Hill; the reason of this was not from any love towards him, but from his responsible situation, and promises of making Edward Quintal his successor. All these proceedings caused a great party feeling; and their pride and consequence being flattered by his placing them thus above the rest, they fancied themselves infinitely superior to those around.

The inhabitants amount to ninety-two, the greater proportion of them being Quintals. Lord Edward Russell landed on the 12th;

* See a chart of these islands in our January Number.

and having assembled all the people to hear the different causes of complaint, gave judgment against Mr. Hill, telling the natives who he was, and that he had no longer any power over them; also giving him to understand that he must leave the island by the first opportunity. Mr. Buffett was kindly received by his old friends, and found his family and children well. Mr. Hobbs, another Englishman, was elected schoolmaster, by the general voice; and, although not so good a man as could be wished, still will be of much service to them.

Bounty Bay, so called from the place where the mutineers landed, and where the *Bounty* was destroyed, is where ships lay off and communicate with the shore. Canoes came off with stock and refreshments, it being impossible for boats to bring such things without much danger. The productions are cocoa-nuts, bananas, sweet potatoes, and yams, which are cultivated by the inhabitants, and of a superior quality; also water melons, and excellent tobacco. Wild goats and poultry are plentiful, and the island is covered with verdure. They are obliged to work very hard at their yam beds, at certain seasons of the year, and, in consequence, are a strong, hardy race, well made, tall, and active, and very expert in the management of their canoes. The women are handsome, and above the common height, particularly strong and nimble. Their houses are well built, clean, and comfortable; and, in every respect, this little community cannot but claim the admiration of every impartial and unprejudiced person, who, taking into consideration their fathers' crimes, would otherwise look upon them with no very favourable eye. We brought for their use a great quantity of kettles, fishing lines, and hooks, knives and forks, and clothing, all of which they were much in want of.

All the mutineers of the *Bounty* are dead. John Adams, the last survivor, died about five years ago. The wives of Christian and Adams alone remain out of the first generation. They are natives of Tahiti, and very old, being nearly eighty-seven, but still strong and active, which proves the salubrity of the climate. Mrs. Christian recollects Captain Cook in his first voyage, and showed a very great respect for him. There were several small remnants of the *Bounty* left, such as pieces of copper, and some parts of the different bulkheads, also the keys of her store-rooms; all of which were eagerly seized, and, as may be imagined, prized very much. We were astonished at the intelligence and quickness of the reply to any question we put to most of these people. They went through the kings of England without a mistake; knew perfectly well all the reigning monarchs of Europe, and leading men of our own country, which made them doubly interesting to us. To find a race of men, inhabitants of one of the South Sea Islands, speaking our own language, and following our customs, could not fail to interest us all; and, when we see they have been brought up in everything that is good and proper, that as yet no

immorality has crept in among them, and every sin is abhorred, and they continue to live in all simplicity and truth, we are, at once, disarmed of every ill-feeling arising from a reflection on the manner in which they came thither, and forget the crimes of their fathers. No doubt appears to remain that Pitcairn's Island was inhabited a considerable time previous to the arrival of the Bounty. Stone hatchets, and other implements of war, have been found buried in the soil; also the remains of several morais, or burial places. This proves that people of some description once lived there, and were either driven away, or left it for some more convenient spot.

MERCHANT SEAMEN'S DUES.—*Bideford*.

THE view to be taken of this trust is that by Act of Parliament, a tax is imposed on seamen to produce a fund for the relief of decayed seamen, their widows, and children; and, consequently, it is not like a benefit club, from which parties can withdraw when they please; but the act gives the power to owners and masters to elect whom they please, to make by-laws and distribute the funds. If they are dissatisfied with their mode of management, they can, at the end of each year, appoint others from among themselves. Instead of any information on the subject being intentionally withheld, the trustees of Bideford have felt a pleasure in giving the fullest information in their power upon all matters relating to the receipts, and disbursements, and principle upon which pensions are granted; and their list shows the scale of pensions for this port. Allowances under special circumstances, and the temporary relief lists can only be explained by the by-laws. The greatest evil which has yet occurred was the difference of opinion on the 26th section of the Act, which by some is considered as intended for men maimed or hurt; by others, that it applies to *all* cases of sickness. If the latter be the intention of the Act, it will not be possible for this, and many other ports, to say how long they can continue their permanent pension list. For instance, among a list of cases for influenza, bad feet, &c. &c., we have recently had a demand from one port for a man ill of a complaint which could not have been meant in the Act, and for which a charge was made upon the trust of 3*l.* for four days' attendance, &c., and his expenses home, though only *one* day's sail from this port. From another port, a claim of 6*l.* for one man ill of small-pox. The men, it is true, were, when taken ill, in ships belonging to this port, but we have not yet been able to learn that they ever contributed a farthing to our funds. It would be very useful if the principle of granting pensions at each port was published, as we are most anxious for any information by which we can improve our system, with the view of doing the greatest possible good to those for whose benefit it is intended. Enclosed is the scale of pensions, in case you should feel disposed to inform "A seaman" in your last

number, that he may see it at your office. As the clause of the Act referred to now stands, and is interpreted by some, it gives power to those who are a disgrace to any service, to go on board ship for a few days—complain of illness and get a few pounds for expenses, under pretence of returning to their ports; but the money once paid they get well, and within a week from their first illness, ship themselves on board a vessel belonging to another port, to play the same trick; as no reference is made to any other port, and no proof required of services. In such cases the *parish* should send such men home, and let the authorities at the port they are sent to make their claim upon the Seamen's Trust; this would prevent imposition, and the expenses would fall on those from whom they may be legally due.

A FRIEND TO THE TRUST.

[Our correspondent forwards us a copy of the Port of Bideford Seamen's Trust for 1837, in which it appears there are seven classes of persons receiving permanent pensions, and four classes receiving temporary relief, making in all 193 persons.

The following is a tabulated statement of the disposal of the Trust:—

PERMANENT PENSIONS.

Class.	Service.	Age.	No. in class.	Average allowance		Total Sum.		Remarks.
				£	s.	£	s.	
1	45	70	4	4	4	12	12	
2	40	65	4	3	6	13	4	
3	35	60	5	2	14	13	14	
4	30	55	8	2	2	16	16	
5	21	50	19	1	10	27	5	
6	10	40	71	0	18	69	9	And others disabled by loss of limb, &c. after five years' service, and the widows of mariners killed or drowned after five years' service, and all such
Orphans of deceased pensioners.			2	1	1	2	2	as paid most part of their last five years' dues at Appledore, before the commencement of the new Act.

TEMPORARY RELIEF.

Class O Widows...	5	0	18	4	10	
P Widows...	7	0	18	5	17	For children, one at 9s.
P Widows...	7	0	18	6	6	For themselves.
Monthly temporary relief	10 men	various.	16	10		Sums varying from 5l. to 10l.
Donations	49	various.	26	2		To poor seamen, widows, and children, whose petitions for permanent pensions were rejected. This change arose from special instances, on first carrying the Act into effect, and will not occur again.

The following is the general abstract for the year 1837, of the Bideford Trust.

		£.	s.	d.
Permanent Pensions	115	155	2	0
Temporary Lists: O. and P.....	19	16	13	0
Monthly Temporary Relief	10	16	10	0
Donations	49	26	2	0
Expenses of Management, Treasurer, Secretary, Receiver.....	3	37	0	0
		<u>£251</u>	<u>7</u>	<u>0</u>

The abstract contains also further statements relating to the sources of the funds, the stock, &c., but as our object is merely to show that our correspondent desires publicity, the above we consider sufficient to give here. We shall merely add from the return that the number of vessels and men at the principal stations at which a majority of the owners resided on the 31st December, 1837, were as follows:—

	No. of Ships.	No. of Men.
Bideford and Out-stations	56	297
Appledore	36	184
Clovelly and Hartland	17	45
	<u>109</u>	<u>526</u>

We have complied now, we hope, with the wishes of our correspondent, and would strongly recommend to attention his observations respecting the publication of the proceedings of these trusts at the different ports. If such proceedings were published in an annual pamphlet, the size of our own *Nautical*, as it really appears that the trustees would benefit each other, by the information they would thus convey, they might at once refer all inquiries to it. The sale of such a pamphlet would surely cover its expenses.—Ed. N. M.]

MANNING THE NAVY.

London, May, 1838.

In the March and April numbers of the *United Service Journal* the above subject occupies some of its pages, and after great pains are taken to mystify it, the conclusion arrived at, is, that impressment is never again to be resorted to; indeed it may fairly be questioned, whether in these days it could be tolerated.

It is unfortunately at the same time, quite an acknowledged fact, that even in time of peace, the objections to entering the Navy, are such, that a squadron, nay, a single ship, cannot be manned without great difficulty and delay by volunteers. What then is to become of our proud bulwarks when threatened by a formidable naval enemy?

Much pains have been taken in your very useful periodical, to hold up to ridicule the grand "panacea" of Sir James Graham's "register of merchant seamen," the cost of which be it observed, the last naval estimates show to be 2,425*l.* annually! and for what? "*to enter in a*

book at the Custom House, the name of every man who serves on board a British merchant ship." What in the name of common sense is this to effect towards manning the navy? Many of these names are fictitious, more are illegible and mis-spelt, and no clue given by which they can be *found* and *identified*, except their own account of the place of their birth, and their age. It really does seem to be about the most useless proceeding that ever entered into man's mind; to imagine for one moment, that *such a registering* of men's names should be the means of manning the navy! The correspondents of the *United Service Journal*, in the articles alluded to, admit, in practice, the total failure of this famous bill; indeed, although, in the speeches of "would be politicians," this act is mentioned as a "great step towards manning the navy," it has never yet been explained *how* it could happen that, for instance, putting down in a certain book my name and that of my crew, should ever induce one of us to enter on board a man of war! It would be doing the country a service if one of the correspondents of the *Nautical* would enlighten its readers on this subject. Unless some useful *practical end* can be shown, let us have done with the trouble, which, to shipowners, is also some expense, inasmuch as it occupies a Custom-house clerk a good part of a morning in preparing the necessary lists to be given in upon the completion of every voyage; and this, too, besides the expenses to the country for the sum annually voted, is only a small part of the cost caused by this useless bill, 2,425*l.* being, doubtless, to provide for the establishment of the principal office in London; whereas, in every Custom-house at the outports, this absurdity must occupy at least one clerk, the expense of which does not appear in the public estimates. It is difficult, therefore, to say what the whole charge amounts to, with what the public is taxed, to carry into effect this piece of legislation attributed to Sir James Graham.

Let us now see and consider what are the substitutes proposed in the *United Service Journal* for impressment, and the failure of the register of merchant seamen: they are *conscription* and *enlistment*. The former is, in effect, extending impressment to the public, instead of confining it to the sailor; to make a certain portion of the public thus balloted for, serve on board a man-of-war, whatever may have been the nature of individual pursuits; or to find a substitute. And this measure, it is thought, may answer; even should it cause a very large portion of a man-of-war's crew to consist of sheer landmen: for instance; farmers, waiters at taverns, and any description of land-lubbers. The only part of the argument on which this scheme is founded that will bear entertaining for a moment, is the asserting of the undoubted right of calling upon every one to aid in the defence of the country in which he lives, and in which his property and family are protected. This scheme will however hardly, I should think, find another advocate.

The other method, "enlistment," is nothing more than extending the present volunteering system, which is expressly limited to the time of the ship's being in commission, in which the man enters, to volunteering for life! and this is attempted to be made palatable to the sailor, by giving him a uniform! and encouraging him to pride himself upon being superior to the merchant-seamen!! and such like idle distinctions are to produce a set of "men-of-war's men," content to submit voluntarily their whole existence, to the discipline and privations of a man-of-war!! This scheme is about as plausible as the other, and, in my humble opinion, the arguments by which it is attempted to be upheld, are prompted by the same spirit which has been the principal cause of preventing the merchant-seaman entering the navy heretofore; namely, that absurd distinction always aimed at by naval men in their practice of looking down with contempt upon the merchant service, and which has disgusted the seaman from time immemorial. The bearing of these officers, unfortunately in too many cases, when brought in contact with the merchant-ship's crew, in their treatment of the skipper, down to the cabin boy, shows such total absence of all courtesy as could have led to no other conclusion on the part of the merchant-seamen who have witnessed it, than that those same officers despise all rule but that of tyranny.

I am, however, far from denying that, on this score, a very great alteration for the better has taken place in naval officers; and, I will fully admit, that in the present day, there is no situation which a seaman can be in, (for a period to be limited,) at all comparable to his station in a man-of-war; and my wish is to impress seamen themselves with this fact, and to counteract the absurd notion, put forth in the *United Service Journal*, fostering that distinction, which is to induce a "blue jacket" of a man-of-war to consider himself a different being from his fellow in the merchant-service. It would accord much better with the common sense of the present day, rather to *raise the latter up to the proper standard*. If all distinction could but be done away with, where is the difficulty of manning the navy? The pay is much better than that of the merchant service; taking the proper view which is done on this head by the writer in the *United Service Journal*, even putting all bounty and pensions out of the question, which latter never have been, and never will be, of any effectual use in manning the navy.

I have already in your pages, Mr. Editor, stated what I conceive will be the only effectual method of accomplishing this great end—the manning of our fleet; and I again ask, where is the difficulty, or hardship, of obliging every one who goes to sea, to serve three years in a man-of-war immediately after the expiration of his apprenticeship? As I have already suggested, oblige everyone, before he can recover any pay whatever for services in a merchant-ship, to *serve three years in the navy*. Enact, that everyone who goes to sea shall

be an apprentice from four to seven years, (or at all events serve three years in the navy); let this apprenticeship expire, in either case, at the age of twenty-one; and then call upon him for three years' service to the public—to be for ever after a free man. Substitutes to be allowed for those of superior education who can afford it, till this training is gone through, either in person, or by substitute. Let it become law, that *no man is a sailor*; let his claim for wages earned in the merchant service be rejected by magistrates and courts of law: let his indentures be registered; and give the office established by Sir James Graham, and now useless, something to do, that may tend to a beneficial end. Oblige owners, under penalty, to make the proper returns to this office of their apprentices; and, lastly, let every master of a merchant-ship be fined 50*l.* who ships a man, that does not bring a certificate of his service in the navy having been duly performed.

Where, I ask again, is the hardship of this on the sailor? What possible objection to his passing three years of such service (when he is paid for it) in a public ship, from twenty-one to twenty-four years of his age? What a set of well-ordered men would not this produce? To subject a young sailor, just at that age, to rules of regularity and discipline, could not but induce good habits: and what a valuable set of available men they would become for the rest of their lives, fit for every service afloat: great numbers of them would remain in the service, or soon rejoin it, and a far greater number would be ready to volunteer for it, whenever wanted, if paid upon such *emergencies* as the merchant-sailor, and which they should be. The navy ever wanting men, under the operation of this system, I think would be out of the question. The treatment they receive in men-of-war, at the present day, only requires being more known amongst them, to induce an abundant supply; and, this plan would, of course, effectually ensure it, as every seaman would know a man-of-war of course. Look at the contrast they would make, upon first joining the service, just emerging out of all the drudgery and discomforts of an apprenticeship on board a merchant-ship, escaping from the filth and irregularity, both of living and accommodation, they have been used to,—to say nothing of the *arbitrary* rule they have probably endured: compare it with the care taken of them on board the man-of-war; the regularity and good habits of such ships; the attendance on divine worship; the *insensible* manner in which they would learn respect for their superiors; and, then, can any doubt be entertained that all this would not only tend to make them comfortable and satisfied with the service, but more than probable, render them good subjects, and valuable members of society, for the remainder of their lives? What, on the contrary, is the *probable* course of the British sailor, freed from all control at the age of twenty-one? an almost certain life of debauchery, broils, insubordination, and mutiny in the merchant service, both afloat and on shore!!

All bounty and pension would be here saved to the public, except the reward for good conduct to those who remained in the service, and which number, I repeat, there can be no doubt, would be such, as to fully supply the demand for all superior ratings, and insure a proper proportion of well-practised experienced, "men-of-war's men;" mén, who from the continued supply of young hands amongst them, would still be reminded of the merchant sailor, would be his instructor, but should never be taught for one moment to consider themselves as a distinct and separate class. The superior habits of naval officers of the present day, would aid all this most admirably; and, from the constant succession of young men under their control, undergoing professedly a training for the merchant service, let us hope, that all the ridiculous distinctions, so jealously kept up in former days, would be softened down to acts of courtesy on all sides; while the increasing good sense in the public officers, as well as in those of the merchant service, aided by the good order, which will assuredly prevail in the latter, with such a set of well trained seamen, as this system will produce, would unite all parties in endeavouring to produce the greatest amount of public good.

To conclude, all experience has hitherto proved, that the fleets of Britain, *cannot* be manned by volunteers. Impressment, in its operation, was cruel, partial, and consequently unjust in the extreme; separating a man from his family for years, for life, was the most abominable proceeding, and which, probably, for years to come, will render the naval service unpopular, and dreaded by seamen. That all this will be removed by the means here suggested, I can have no doubt, and will eventually render the "manning of the navy," so far from being a matter of difficulty, that it will, on the contrary, become, as it ought to be, the favourite service with British seamen, and render their employment in it as much an object of ambition, as it now is with the officers.

"A SKIPPER."

SEA SNAKES.

Madras, 7th Feb. 1838.

Dear Sir,—The accompanying letter which Dr. Bland of H.M. ship *Wolf* has kindly made public at Madras, is no doubt intended particularly to meet the eyes of persons of the nautical profession: I therefore forward the letter for publication in your journal, as sure means of furthering the object in view.

I remain, yours truly,

J. T. M.

P.S. The above letter of Dr. Bland was written upon the information he had collected subsequent to the accident, but the following taken from the *Madras Conservative*, is an account given by the medical officers who attended Mr. Hayman at the time he was bitten by the snake.

POISONOUS SERPENTS.—*Remedies for their bites.*

Madras Roads, 29th Jan. 1838.

The following appeared lately in a Madras paper, and was copied into several English journals:—

“On the 9th of October last, while her Majesty’s Brig *Algerine* was at anchor in Madras roads, one of the sea snakes, so common in the bay of Bengal, came along-side, and was hooked on board with a boat-hook, by one of the men, when Mr. HYMAN, a mate, belonging to H.M.S. *Wolf*, but at that time lent, and doing duty in the *Algerine*, took hold of the animal, which seized his left hand over the Metacarpal bone of the index finger, and held fast the doubled up skin, until taken away by force. This took place at 7. 30. A. M. after which, thinking the affair a trivial one, he went down to breakfast, soon after which, he became slightly sick and giddy, felt considerable uneasiness in his throat, which began to swell, became unable to articulate, insensibly, and died at 10, 30 A.M., exactly three hours after he was bitten.

“A few exceedingly small punctures were seen on the hand, and two medical gentlemen saw the patient not long after the accident, (not until the symptoms showed themselves,) but so rapid and fatal was the poison, that very little time was left for any remedy to take effect, at the same time it must be borne in mind, that about an hour was lost by the patient treating the affair lightly and of no consequence; it is very doubtful, whether any good could possibly have arisen from any mode of practice, however energetic, put in force somewhat too late. Immediately after death, the throat became discoloured, the body covered with dark spots, and in a few hours so offensive, that it was necessary to have it buried the same afternoon.

“The snake was preserved, and, on examination, I found it to be six feet six inches in length, six inches in girth at the vent its thickest part, from whence ran the compressed tail, like the blade of an oar, by which the reptile swims, general colour yellow, with forty-three narrow black bands or rings, nearly equi-distant from head to tail, both jaws and palatine arches well furnished with small arcuated teeth, many of the back teeth broken and decayed, apparently from age. The snake is the *Coluber laticaudatus* of Lin: the same that SHAW names the *Hydrus Colubrinus*, and is plentiful all over the Indian ocean, straits of Malacca, and the bays and rivers of India.

“As venomous snakes are known by having insulated fangs in front of the upper jaws, it has been supposed that those which have no pierced fangs, are not venomous; there is, however, good reason to doubt the correctness of this opinion, and, in the above serious case, where no fangs were present, a direct proof to the contrary: all are furnished with a maxillary gland for secreting poisonous fluid, and it is now well known, that the molar or back teeth are furnished with

grooves, which would readily convey poison, and to strengthen this opinion, it may be here mentioned, that a tribe of snakes spread all over India, called, 'rock snakes,' and whose mouth and jaws are formed like the non-venomous, have been discovered lately, to have the first maxillary tooth furnished, with a tube for transmitting poison.

"Having often heard an opinion expressed particularly by sailors, that sea snakes were harmless, and seen them handled in consequence of such belief, I was led to make some inquiries from natives of this country, and particularly the Malays, among whom these reptiles abound, and was invariably told, that the sea or river snake, the 'Ular-Sawa,' of that people was highly dangerous, and invariably produced death, instances of which they had known.

"In consequence of the above case, ending in the death of a fine young man, 21 years of age, who had always been remarkably healthy, and as a caution to all whom it may concern, I have considered it my duty, to have this account published.

"WILLIAM BLAND, *Surgeon, H.M.S. Wolf.*"

The foregoing narration cannot be read without exciting feelings of the deepest commiseration and regret. But our present object is, to make known to naval officers and other voyagers, such remedies as have been used with success in the prevention of the dangerous effects arising from the punctures received by human beings from the fangs of poisonous serpents.

It is an erroneous opinion very generally entertained by sailors, that the sea-serpents of India are not venomous; it is not certain that all are so, as there may be more than one variety which frequent the waters of the Bengalese gulf, and possibly some of those may be merely harmless snakes. But the repeated instances which have occurred of persons losing their lives from having been bitten by these reptiles should act as a warning against handling them; and it should be borne in mind that the virulence of the poison remains after the death of the animal.

It certainly appears a little singular that these reptiles should be found dallying in the waters of the ocean, as they are unprovided with gills. From this fact, unquestionably water is not their natural element, and it becomes a curious question of physiology to determine the origin, or rather the cause which impels these creatures to sport in the sea, which most land animals approach with caution, and seldom or never venture to immerse their bodies in, unless compelled by the pressing exigency of escaping immediate danger from the pursuit of enemies. It might be supposed, on first reflection of the case, that the warmth of the climate alone prompted them to seek relief from its effect, by plunging and sporting in the cooler medium; and, perhaps, not erroneously, as it is known from ocular proof that in Halifax harbour, in Nova Scotia, snakes are sometimes found swimming,

or rather gliding through the water, during the fervid heat of summer, which, while it lasts, is little inferior in intensity to that of the Gulf of Bengal. We have ourselves captured two snakes in the act of creeping out of the water into the lower deck ports of a ship of the line, whilst lying in the port just named; and in no part of the world, whether inter or extra-tropical, have we seen so many of the Ophidian race as on the Dartmouth side of that harbour. That they seek the waters for food seems unlikely; not that we should be at all surprised at the discovery of their possessing a propensity for fish, as we are assured, though certainly where unlooked for, that the smaller of the feline tribe have been known to take a day's sport at fishing: we would rather object from the fact, that there is no scarcity of birds and lesser quadrupeds in the localities. The serpent is as eminently a carnivorous animal as the cat; and we recollect to have once caught a snake with its head buried in the back of a toad, whilst the unfortunate legged reptile was writhing with the intense pain of the contact. Our endeavour, had we made one, to save the mottled batrachian, by sacrificing the snake, which was a large one, would have proved abortive. The poor creature was irrecoverably wounded in the vitals, and soon yielded to the violence, after a few convulsive struggles!

It is not improbable that if a simple mode of treatment were attempted *immediately* after the infliction of the wound, the result would prove successful. The instinctive apprehension of danger arising from a wound of this nature, would inspire the anxiety to counteract its effect; and, in the absence of medical advice, the following proceeding might prove successful. Apply a ligature as speedily as possible within the part bitten, to arrest absorption, as far as that primary point could be accomplished in a rude manner; then scarify the wound, and wash it well with a solution of hartshorn, with lime-water, or a weak solution of lunar-caustic, or, if none of these were at hand, with water alone. After having accomplished these preliminary measures, cauterize the wound with a red-hot iron, and take doses of eau-de-luce, or, if this be not procurable, hartshorn and water; put the patient into a cot, and cover him with blankets to induce perspiration. If the bite happen on any part of the body, or limbs, where a cupping-glass could be effectually applied, this ought instantly to be done, after scarifying the wound. Sucking the part wounded to extract the poison is an operation that has been practised from remote antiquity. In a case of desperate necessity, the unpleasantry of such a mode would be removed in a great measure by the satisfaction that would arise from the feeling that we might by such an act be instrumental in saving a fellow-creature's life. The mouth of the operator should be washed with olive oil, or, indeed, with any other which is innocuous; no evil can arise to him who performs this humane office, whilst his mouth, gums, and lips, are sound, even if

he were accidentally to swallow the poison. It is a well known fact that the Indians eat animals that have been killed with poisoned arrows with perfect impunity. Does not this seem to imply that the blood is principally, if not solely, affected by the poison?

In a memoir read before the Academy of Medicine at Paris, a few years ago, Dr. Barry states, that the immediate application of a cupping-glass to a poisoned wound will prevent the progress of the absorption; and, finally, that after the cupping-glass has remained a certain time, the poison may be removed from the surface, and all unpleasant consequences averted by simply washing the part with water. The experiments by which the Doctor was enabled to arrive at these simple means of obviating the ill effects of poisons on the external parts of the body, were repeated before the Committee of the Academy, and were perfectly satisfactory. Arsenic, strychnine,* prussic-acid, the upas-tienté, and the bite of a viper, were tried on dogs, &c. It is not improbable, as surmised by Messrs. Butler, that the effects from the bite of a rabid dog would in like manner be neutralized by the same mode of treatment; we would, however, strenuously recommend first incision, and, after the use of the glass, &c., the cauterizing of the wound.

Southernwood, a well known garden plant, is reported by a correspondent of the *Hants Telegraph* to be a specific for the bite of the viper; he asserts that it is used on the continent, and never known to fail. The recipe is as follows:—Decoction of southernwood, a handful boiled in three pints of water to two pints; as soon as prepared, take a quarter of a pint; in fifteen minutes after, another quarter of a pint; two more quarter-pints within an hour after the two former draughts; half a handful of the inner bark of the ash tree, dried or green, may be added. The effects produced, are vomiting and expulsion of wind. The writer asserts, that were he not certain of the efficacy of the recipe, he would not have communicated it.

Southernwood—*Artemisia abrotanum*—is a perennial shrub, native of southern Europe. It is administered as an anthelmintic and sudorific, and is also employed extensively as a fomentation. In the form of a lotion or ointment, it is applied to cutaneous eruptions.

From the testimony of Dr. Brooks, the following is stated to be an effectual remedy for the bite of the rattle-snake:—Root of plantain, *plantago lanciolata*; and horehound, *marrubium alyssum*; a sufficient quantity: bruise them in a mortar, and squeeze out the juice; of which give, as soon as possible, one large spoonful. If the patient be swelled, it must be forced down his throat. This generally will cure; but, if he finds no relief in an hour after, give another spoonful, which never fails. If the roots are dry, they must be moistened

* *Strychnine* is the poisonous principle of the *nux vomica*, and of other apocynææ, to which the upas tienté, or celebrated Javanese poison belongs. Prussic acid is obtained from the bitter almond and laurel leaf: they are very active poisons.

with a little water. To the wound may be applied a leaf of good tobacco moistened with rum.

Tobacco.—It has recently been ascertained that the juice of this drug, (which is itself a poison,) when chewed and swallowed, neutralizes the fatal effects of arsenic when taken internally. The circumstance, which occasioned the discovery, occurred accidentally to a young lady, the daughter of a physician of the United States of America.

The bark of the *strychnos colubrine* has been used as an antidote to the bite of the snake cobra capella, or coluber major. Brandy and water, and other stimulants, have been used on such occasions.

It might prove a useful precaution if a small box, containing cupping-glasses, with a phial of spirits of wine, paper, ligatures, &c., were sent with the watering and wooding parties from her Majesty's ships.

As the simple mode of applying the cupping-glass may not be known to every body, it may be stated here. Take a small piece of paper, saturate it with spirits of wine, ignite it, drop it into the glass, which dexterously invert, and place it over the wound with gentle pressure; in a short time the flesh will rise, and the glass retain a firm hold.

ARGONAUT.

NAVAL CHANGES.

A ship has always been held as an admirable example of the ingenuity of man: her bulk, form, and apparent strength, her intricacies of yards, masts, and rigging, have ever struck the non-professional observer with admiration. Writers have been wont to describe her as the most beautiful object of man's creation, and with reason too, for perhaps there is no object more poetical than a ship, especially when she—

—————"under sail,
Spreads her white canvass to the gale."

Yet there is no contrivance, excellent as a ship really is, that, considered as a piece of mechanism, is more defective. Seamen formerly were so tenacious of things as they were, that improvement had to fight its way against prejudices, which they once maintained as steadfastly, as they have ever done the nation's glory itself. The proposal of any alteration was, at one time, sure to be received with jealousy, and to be looked upon as an innovation,—as an attempt to destroy what the majority were certain could not be meddled with without deterioration. Improvement, however, has stolen upon Jack by degrees; slow at first, but with more commendable speed at last: intricacies and incumbrances have been removed, and facilities have been welcomed.

If there be any of our readers who can remember the heavy apparel, the ribs and trucks of former days, they may remember too, that

sailors then considered their ship perfection ; they may do so now with a better grace, certainly ; and, notwithstanding the dislike which still partially exists to all change, it were a marvel if the tars, who delight in the Vernon, would have much veneration for the king's largest and most puissant ship "The GREAT HARRY," could she make her appearance again some fine morning at Portsmouth. These are extremes, and there stand some three hundred years between them.

This much is to show by what slow process art has advanced in the building and equipment of ships, that it might be compared with the progress she has made in the construction and machinery of the ship's great rival, the steam-vessel. The recollection of the first essay to navigate the river Thames in a steamer, is fresh upon the minds of most of us. A steam trip to Richmond, or to Margate, not many years ago, was an adventure to talk about. The young cockney who spent his holiday with so much risk, was looked upon by his compeers of the counter as having achieved an immortality. They wondered "*how he could be so wenteresome.*" The "*wonder*" soon, however, instead of "*growing,*" wore away, and ladies even were "*convinced it would not blow up.*" Ere long, the vessel, once believed to be fraught with so much danger, became the thing desired, and was sought after as the one necessary to a pleasure-trip to the Nore ; to be navigated, not simply for the benefit of the voyagers, but for the benefit of half the benevolent institutions in the metropolis. The next step that hardihood attempted, was to steam it to Scotland, then to Holland, France, Ireland, to Spain and Portugal, and, with each advance experience prompted improvement, better figure, better fastenings, better machinery. The voyage to India was performed, not with much advantage, in point of time, but under circumstances which leave so much hope of future advantage, that the East India Company have ventured to send valuable vessels on the same errand.

So far prejudice has not stood much in the way of improvement in steam-vessels. People have not been much alarmed at three or four hundred horses power, nor have engineers or proprietors objected much to alteration in the engine "department." "Go on!" has been the prevailing cry, with a few seasonable interruptions of "ease her," "stop her," &c. But doctors have disagreed about crossing the Atlantic, largely reckoning that the seas of the Bay of Biscay, and those "off the Cape," were difficulties not worth attention ; as mere sprays compared with the watery terrors to be met with between London and New York : a voyage, held by Dr. Lardner, "to be as vain to attempt as would be one to the moon."

It was attempted, nevertheless, by the "GREAT WESTERN," and the "SIRIUS," and both reached their destination, have returned, and sailed again. Such has been the rapid and successful progress of steam.

The undertaking thus spoken of, steam's last stride, has opened to England and to English capital, an opportunity of partaking in the carrying trade of America, in which, so long as ships were the medium of communication we had not the remotest chance of successful rivalry. We have but to look at the splendid American packet-ships, and admit, that the conveyance of both goods and passengers must, without the employment of steamers, have remained with our transatlantic friends. The value of this trade, as productive of profit on freight and passage, is perhaps little short of a million annually. The prospect of sharing this, and whatever increase may be consequent upon quicker voyages, have induced the formation of companies for running steam-vessels between the two countries, a project that it were well to have established.

Anticipating the issue of the late experiment, London and Liverpool have each furnished a steamer, to be so employed. "THE BRITISH QUEEN," is of this port: "THE LIVERPOOL," speaks for herself. They are both specimens which do honour to the architects who modelled them. "THE QUEEN" is the largest; "THE LIVERPOOL" of the greatest comparative power: about the machinery of the latter there is some improvement that we shall be glad to be made more fully to understand, but they recommend themselves to notice in the *Nautical*, as the precursors of a line of steam-vessels, which may hereafter form, as the old East Indiamen did, a squadron for the purposes of the state when the state shall need them: they will become a nursery for steam-ship seamen, a class of Englishmen who will be wanted when the prophecy shall be fulfilled, that "England's next naval war will be decided by the aid of steam-vessels:" a prophecy which no naval man doubts will come to pass; an event which a wise Admiralty will provide for.

Here I must leave the subject, for I find myself fancying a British line of battle, formed with the cooperation of war-steamers. When that shall be, may Britons have mercy upon the unfortunate mortals, whom arrogance, ambition, or tyranny may send to such an encounter!

H.

[Since the above has been in type, we have been informed that the "Liverpool" has been dispatched as the leading ship of the Atlantic Steam Navigation Company.—ED. N.M.]

PRUSSIAN MERCANTILE NAVY.

10, Fenchurch-street, 26th May, 1838.

MR. EDITOR,—An official account of the number of Prussian merchant-ships and their tonnage, may not be out of place in the *Nautical Magazine*, to correct the many erroneous and overcharged statements which have heretofore been hazarded by certain advocates for a repeal

of the reciprocity treaties between Great Britain and Prussia, and I therefore transmit to you the following particulars :—

The total number of Prussian merchant-ships amounted on the 1st January, 1837, to 581 vessels of $70,098\frac{3}{4}$ normal lasts, of 4,000lbs. weight per last ; equal to about 130,300 tons British.

In the course of that year there was an addition in the aggregate number of sixty-five vessels, forty-seven of which were newly built.

The reduction, on the other hand, amounted to forty-seven ships ; twenty-three of which were lost at sea, and six were broken up.

On the 1st January, 1838, the total number of ships was 600, of $73,680\frac{3}{4}$ normal lasts, equal to about 136,800 tons British.

The increase, as compared with the year preceding, is therefore nineteen ships of 3,582 normal lasts, or about five per cent.

There were about thirty new ships on the stocks, measuring 4 to 5,000 lasts, nearly ready for being launched.

During the year 1837, the number of Prussian ships which passed the sound amounted to 2,319, whereas that of British ships was 3,417.

Believe me to remain, dear Sir,

Your most obedient servant,

B. HEBELER, H.P. Consul-General.

AMERICAN STEAM-BOATS.

ALL the world has heard of the extraordinary speed of the steam-boats of the United States ; the fame of their passages up the Ohio, the Mississippi, and also the Hudson, from New York, when the tremulous motion of the vessel is such, that the very glasses are shaken off the tables ; all this, and the accounts of their wonderful velocity, have long since reached the shores of Europe, and have formed the subject of discussion among many, and, we may also add, of disbelief. Those whose fortunes have led them to the United States, and who have embarked in these vessels, will have had ample opportunity of judging this matter for themselves ; but to those who have not, the drawing of the most celebrated of these vessels, accompanying our present number, will be acceptable. By the attention of a correspondent, (a resident of Brooklyn itself, and also an American,) we are enabled to add to it a list of the fastest steam-boats now in the " New York Waters," with such particulars concerning them, and the routes which they run, as furnish us with ample materials for arriving at a tolerably correct idea of their speed. The times occupied by the passage, and the distances between the several points, may be said to be actually measured, and deducting the loss of time in landing, we thence arrive at the grand question of the speed of each vessel. This we have supplied in statute, as well as nautical (or geographical) miles, believing that an exaggerated rate of a vessel is often given in the former, when it should always be in the latter.

TABLE.

Name of Vessel.	when built.	Length in feet.	Beam in feet.	Draft in feet.	Cylind		Wheel.		Dip, ft. in.	Rev. per min.	Steam.	Engines.	Boilers.	Route.	Average passage.	Loss in landing.	Dist.	Speed in		Remarks.
					Stroke ft.	Diam. in.	Rad. ft. in.	Face. ft. in.										Statute miles.	Nautic miles.	
De Witt Clinton	1828	235.	28.	5.	65	10.	11.	16.	3.	25	10	1	2	Albany.	11 hours	45. m.	147	14.3	12.4	short pass. 10h. to Van
Swallow	1836	225.	23.	5.	46	10.	12.	10.	2.2	26	18	1	2	do.	9. 1/2	22.	147	16.1	13.9	9h. to Van
Rochester	1835	300	24.	5.	44	10.	12.	12.	2.	26	35	1	2	do.	11.	45.	147	14.3	12.4	do. to Van
Utica	1838	185.	22.3	4.4	39	10.	11.	12.	2.	23	35	1	1	do.	11.	33.	147	14.0	12.1	West Pt. no
N. America	1827	228.	30.	5.	44	8.	10.	14.6	2.8	36	18	2	1	do.	11.	33.	147	14.0	12.1	landings.
Lexington	1835	210.	23.	5.	48	11.	12.6	11.	3.	27	20	1	1	Providence.	12. to 14*	5.	183	15.2	13.2	11h. 30m. to Pr.
Massachusetts	1835	302.	29.6	4.4	9.	11.6	10.	11.	2.6	25 1/2	18	2	2	do.	"	"	183	14.2	13.2	13h. do.
Rhode Island	1836	211.	27.6	6.3	60	11.	12.6	11.	2.8	25 1/2	20	1	2	do.	14†	"	183	13.0	11.3	12h. 15m. do
Narraganset	1836	212.6	27.	6.	56	11 1/2	12.	10.6	2.	24	18	1	2	do.	"	"	183	13.0	11.3	11h. 45m. do
New York	1835	230.	24.	5.	50	10.	12.6	10.6	2.8	22	15	1	2	New Haven	4 1/2 to 5.	"	76	16.2	13.2	
Splendid	1840	222	27.	3 1/2	36	7.	8.6	7.	2.6	24	18	1	2	do.	6.	"	130	11.3		
New Haven	1834	180.	22.6	5.	46	10.	12.	9.	2.8	22	14	1	1	do.	5 1/2	"	140	14.0	12.1	
C. Vanderritt	1837	178.	24.	4 1/2	41	10.	11.	12.	2.	27	12	1	1	Bridge Port	"	"	150	14.0	12.1	
Cleopatra	1835	183.	24.	5.	47	11.	11.6		2.4	25	25	1	2	Hartford.	"	"	150			
Bunker Hill	1835	180.	24.	4 1/2	41	11.	10.6	10.	2.3	26	20	1	2	do.	"	"	150			
Charter Oak	1837													do.	"	"	140			
Norwich	1836	180.	26.	5 1/2	41	10.	10.3	10.	2.3		21	1	2	Norwich.	"	"	140			
New York	1837	160.	23.6	3 1/2	38	10.	11.	9.	2.2	24	21	1	1	Charleston.	70.	"	722	10.3		One mast
Columbia	1836	185.	22.6	5.	38	10.	12.	10.	3.	22	18			do.	67.	"	722	10.7	8.9	do.
Home	1837	210.9	22.6	7.	56	9.	11.6	9.	3.	21	14			do.	"	Lost.	722	10.7	9.2	do.
Neptune	1837	221.	25.	7.	50	11 1/2	12.6	9.6	3.	21	14		2	do.	"	"	722	10.7	9.2	2 masts, just finished.
Bell	1837	180.	26.	5.	50	10.	12.6	10.	2.6	25	25			Albany.	10.	22.	147	14.7	12.7	

Note. These boats all take their departure from New York; the draft of water varies on the same passage according to the turn.
 * 12 hours by day, 14 by night. † By night

There is yet an important particular to be taken into the account regarding the Albany vessels, namely the current of the Hudson, which if we assume at the moderate uniform rate of three miles per hour, and that the passage given is performed against the stream, we shall have the enormous rate of seventeen miles per hour for the "Swallow!" To be sure she is no beauty for model, whatever she may be for speed; but the "New York" steamer is of a peculiar genus, to be found in perfection only in her own waters—a sort of *rara avis* adapted to the notions of brother Jonathan.

It will be seen that the speed of most of the other steam-boats in the table does not approach that of the Albany vessels, which may in some measure be accounted for by part of their voyages being performed along the seacoast, where they are subject to a breeze and a swell to impede their progress, besides their build partaking more of the nature of sea-going vessels. But with regard to the American river steamers, an attention to their speed, their "go-ahead" motto, is the first consideration, and as large an engine as the vessel will carry is put on board. It is in fact so powerful, that the motion can be felt distinctly as the stroke of the piston is given when at its maximum rate; and the spring of the vessel may be with much truth likened to the bound of a racehorse when he has gathered himself up for a fair start. The fastest boats use firewood, which gives them a great advantage over those which use coal, as they can "fire up" in a few minutes. The "New York," which runs to Newhaven, is considered one of the fastest boats, although supposed not yet to have been put to her full speed. But the north river (Hudson) boats

have, as the following extract from the *Albany Evening Journal* will show.

“GREAT TRIAL OF STEAM-BOAT SPEED.—There was a beautiful trial of speed last night between the steam-boats ‘Swallow’ and ‘Rochester,’ which are undoubtedly the two fastest boats in the world. They came out of their berths in New York together, and for twenty miles ran neck and neck, neither gaining or losing a foot. The ‘Swallow,’ however, finally glided ahead, and continued to gain gradually until she arrived here at half-past two o’clock, the ‘Rochester’ being eight minutes behind. The ‘Swallow’ made five and the ‘Rochester’ six landings. There was a strong ebb-tide most of the way. Had the boats left with a favourable tide they would have come through in eight hours.—*Albany Ev. Jour.*”

The “Lexington” is a boat highly spoken of at New York, both for strength and speed, making nothing of the sea, it is said, in her way to Providence; and the “Neptune,” at the time our accounts left New York, was to start in a few days for Charleston. Her passage it was expected would be performed in fifty-five or sixty hours.

The American system of steering forward, (which by the way is not originally the American, but our own Symington’s), it will be seen is indispensable in a true American steamer. No helmsman could have a chance of doing his duty immersed in the crowd of passengers both above and below abaft, and he is consequently perched in the *house* just before the paddle-boxes, with two and sometimes three bells at his immediate command, which he operates on by means of lines leading to a rail close by him. With these he makes the signals for starting either or both wheels, or for stopping or backing them according to his intentions, thus avoiding the confusion of calling out from one person to another. at the same time steering the vessel and keeping her on a direct course for any object by means of the flag-staff before him, and the dart suspended from it over the bows. By seeing these on with each other he knows when he is amidships in the vessel, and he has only then to keep them on with the distant object.

We may now add a word or two respecting the speed of these vessels and its effects, some remarks on which in a recent number of the *Athenæum* are so much to the purpose that we shall insert them here.

“As public attention is just now directed towards America, and the novel mode of communication so auspiciously opened with that country, we shall take the opportunity of once again adverting to that *destructiveness* which we begin to consider as a constitutional characteristic of the American people. Since we adverted to the subject of their fires, intelligence has reached us of another loss of three millions of dollars at Charleston—a city which does not contain more than 30,000 inhabitants. But the utter carelessness of life and property in America, is as manifest in the fate of their boats as of their

buildings on shore The papers just received bring accounts of deplorable disasters on the Ohio, by which *between one and two hundred lives were lost!* The same journals speak of other accidents, on a smaller scale, but which we should think sufficiently exciting, were it not for the greater calamity which eclipses them. The sad story of the Charleston packet last season is not yet forgotten, where ninety lives were lost; or that of the 300 emigrating Indians who perished about the same time on board a boat which was swamped in a western river. The year before was marked by the burning of the *Ben Thersod*, on the Mississippi, when more than 200 of her passengers, we think, were destroyed! Thus every season is distinguished by one or more enormous disasters of this kind, unheard of in any other country; while multitudes of minor accidents so crowd the papers, that no notice is now taken of them on this side, and a very slight one on the other. For instance: a mere mention, in three lines, was made the other day of the burning of three steam-boats at once, off New Orleans. We have before us a remarkable statement in the 'Western Magazine' (Cincinnati) of the *mortality* among western boats, that is, on the Mississippi waters, for the two years from 1831 to 1833. In that period, *sixty-six* boats went out of service on these waters, of which only fifteen 'abandoned' ones appear to have come under the head of 'unseaworthy' strictly, while the other fifty one were lost by *accidents!* The character of these accidents will be understood when we say, that seven were lost by ice, fifteen burnt, twenty-four 'snagged,' and five destroyed by collision with other boats. The proportion of the steam-boats destroyed yearly in these various ways was more than 'twelve per cent. of the whole number employed.' We have seen it recently estimated that '1,000 lives are lost per annum' on an average, by steam-boats in the United States. Of the property destroyed, we say nothing; but surely this destruction of human beings cannot be thought of without horror. Congress we see has had the subject under discussion, and we hope they will put a check to this evil. If there be no other way, carelessness must be made as criminal by law as it is in fact, in such cases."

And more recently still the *Athenæum* also adds as follows, under the head of *Steam-boat Accidents in America* :

"We took occasion lately to advert to this subject, and some recent arrivals bring it once again under consideration. That these *accidents* mainly arise from a headlong impetuosity, and childish rivalry seems clear enough. The *Ben Thersod* caught fire in running a race. The American public ought to put down this practice; on the contrary, it is sanctioned and stimulated by paragraphs like this:—[i. e., the paragraphs we have before quoted.] This voyage which is about 150 miles, appears to have been made in *between eight and nine hours!* We have in another paper a description by

a passenger on board the *Franklin*, from Louisville up the Ohio to Cincinnati of a race carried on the whole of that distance, which is about 150 miles, by this boat with a rival one named the *Phillips*. In this case there was a wager of one hundred dollars between the captains that the *Franklin* would beat by an hour. The other boat had a half hour's start. At fifty miles she was nearly "over-hauled;" at thirty more, she was passed, (having slight stoppages to make with the mails) but by only five or six lengths. The passengers of the leading boat, some sixty, including ladies, now entered into the sport which they had hardly understood before:—"The contagion spread 'Go a-head, Captain, keep her in the wake, huzza for the *Phillips*' was in every mouth. Nothing could exceed the spirit of the firemen and deck hands. The hatches were thrown open, pine knots covered the deck, and two or three axes kept going in splitting and breaking them; the deck passengers were huddled into the bow, to give the boat more dip; the chain wagons were hauled from the tops of the chimneys, while dense clouds of black smoke filled the atmosphere over us. It was plain that no less excitement prevailed on board the *Franklin*. Thus far, she had been queen of the waters. And so they keep on for the next twelve or fifteen miles. "In passing Warsaw, the two boats were 'neck and neck,' and we were saluted with loud and continued cheers. No response was sent back from either boat—not a sound was heard, save the sonorous breathings of the scape-pipes, and the whirl of the water-wheels."—After this, "the boats, which till now had been abreast, and from ten to fifty feet apart, struck each other with a slight concussion. The ladies, of whom there were twelve or fifteen on board the *Phillips*, became alarmed, and besought their husbands to interfere. While this consternation prevailed in the ladies' cabin and state rooms, a different scene was witnessed without: the two boats seemed to be lashed together, the officers of each shaking hands across the railings, and the firemen and crew looking defiance. The river in front of the boats, from the light of the furnaces, seemed a sheet of fire, while the sky continued overclouded with the dense volumes of smoke which poured forth from the chimneys. In passing Petersburg, the boats again struck with a more violent concussion than before; the alarm of the ladies increased,"—and so on.

The above is a capital picture of that practice of the American steam-boats, to which nine-tenths of their accidents no doubt, may be attributed. The firemen might look defiance at each other, and not leave their posts, as the furnaces are so high, that they have nothing to do but to rake the ashes of their fire *overboard* on each side, an advantage by which, considerable labour is saved, in comparison with our process. But we entirely agree with the concluding remarks of the *Athenæum*.

"What an atrocious game is this to be played with human life!

That the passengers encouraged it, only aggravates the case ; and so do the cheers from the shore. We fear that the Americans are too careless of life. Their driving habits of business, and the adventurous frontier character of a part of their population, may account for it. The great number of their steam-boats has familiarized them with scenes such as we have here described. Think of more than forty boats on Lake Erie alone, of nearly 400 on the Mississippi, for it must be allowed, as we said of the burning of buildings, that the Americans are as enterprising in one way, as destructive in another. But none of these circumstances can excuse the practices referred to, though they go some way to account for them. On the contrary, the great number of the steam-boats, and the usual comparative lightness of their construction, is the strongest argument for a more careful management on board, and for the interference of the public and the government."

We shall conclude these remarks on American steam-boats with an extract from the last number of the *Quarterly Review*, on Atlantic steam-navigation, a plain, straight-forward article, which treats the subject in a masterly style, and speaks thus on the points in question.

"To be sure, *accidents* will occur! more or less, these are to be expected, as things are at present. By and bye we trust, among our "improvements"—this liability will be very essentially lessened ; meanwhile, however, we anticipate some trouble. The competition will soon be of the keenest description ; the race ground is most luxurious ; the prize tempting ; and even passengers themselves, too often enter so much into these feelings, as to become greatly chargeable with the blame which is commonly laid on others. We confess we are alluding to the case of the Americans rather than to our own ; and we hesitate the less to acknowledge it, as we consider that their own interest even more than ours, in the steam-navigation of the Atlantic, is likely to be affected by what we must take leave to call the abominable and disgraceful recklessness in the management of this kind of vessel, which prevails to such an appalling extent among them. We are aware that it is *not* a universal, a national trait, as some late writers have asserted broadly. The New England and New York boats rarely meet with an accident, though they adopt the high-pressure system like the others, and run at the greatest rate of speed which is known ; neither is the community at large, either of the south or west blameable. The horrid disasters we hear of, every few months or oftener, peculiar to the United States, and to this part of them in their awful extent, and by which it is estimated at least *a thousand lives a year* are lost ; these are almost always caused immediately by gross misconduct on the part of a few persons in authority, who, for the sake of a race with a rival, or with some pretext equally cogent, run the most imminent hazards without the slightest hesitation. We have seen accounts of these races on the

western rivers for a distance of a *hundred miles* or more—much of the time neck and neck—the whole ship's company on either side meanwhile desperately engaged, and wrought up to the highest pitch of excitement in the murderous struggle. In this way the *Ben Thersod* got a-fire on the Mississippi two years ago, when hundreds of passengers perished; and such is the secret of most of the *accidents*, which, in nine cases out of ten, are no accidents at all, but ought to be criminally visited by the law of the land, as much as murder in any *retail* shape. We have heard an American friend of ours, allege, that no countryman of his would hesitate running the risk of his life for the sake of getting *anywhere*, half an hour before *anybody else*. Matthews, we remember, made it apparent, in his way, that the yankees do everything in *twenty minutes*. These are caricatures of course, the one no more than the other, but both, we fear, too well based on fact. The Americans carry their energy a little too far; they retain too much still of the wild impetuosity of youth; they want a new infusion of old John's steady and regular blood. We like no such driving fashions, such helter skelter haste in steam-boats, especially on Atlantic voyages least of all. Congress we see, has the matter in hand, and we trust it will be with effect, and meanwhile, as even legislation, (especially in that country,) will not do everything without public opinion; as the managers and masters of steam-boats, who have very often been set on, and always tolerated, may also be awed by that public to whom they owe their character and their bread; we earnestly hope, that the general voice may make itself heard, and trust that arrangements of the most solid and effective nature may be promptly adopted.

Thus much for a plain hint, which we are sure, must be taken in good part; for when we hear, by a single arrival, of one hundred and seventy human beings destroyed in one boat, and one hundred and twenty in another, it is high time for all parties who have to do and deal with such a catastrophe-working community, and are likely to have much *more*, to speak out. And yet we were going on to say, when this hint occurred to us, that accidents or no accidents, nothing apparently can stand in the way of the complete triumph of the new dynasty of the seas. Even granting, which God forbid! that these disasters are to be regularly continued on board the boats from the one side just as regularly as if, like friction in machinery, they were an indispensable incident to the navigation, still we English *can* patronize British boats which *do not* blow up three hundred people every three months, while the Americans, on the other hand, can, if they so choose, go on being blown up just as before. If they have more accidents, so have they less fear. "Practice makes perfect." "There is nothing like taking things coolly," even hot water, or steam. And, as this is, their system at home, so may it be abroad. As they are the great steaming people of the age, surely this trifle of

merely crossing three thousand miles over sea instead of running about as far up a river, will never alarm them.*

THE PILOTAGE BILL.

London, July, 1838.

MR. EDITOR,—The senseless outcry which a set of interested men have been making, with a view to defeat a very useful measure, I perceive was followed up the other day by a letter in the *Times*, signed *Nauticus*, (a pilot no doubt). It is, however, to be hoped that the two members of the Board of Trade, and the Lord of the Admiralty, who are bringing forward the measure, will be above giving it up, when, no doubt, a full inquiry had satisfied them of its useful tendency. I have already through your pages, Mr. Editor, (August, 1835,) shown the evil working of the present system; how injurious it is to the energies of young sailors; how perfectly it renders everybody (pilot excepted) indifferent about the navigation of our ports. I will venture to say, that you may take at hazard a hundred masters of ships, and you will not find half a dozen of them who will not at once admit that they do not know anything of the matter. We are, in fact, necessarily quite ignorant of our own ports! and pilotage apart, I have shown that the constant presence of a pilot tends to render a young sailor indifferent about the management of his ship in narrows; thus preventing the acquirements necessary for working a ship in situations of difficulty. The swinging of a ship at single anchor in a tideway, is also a matter so perfectly unknown amongst the officers of a ship in the foreign trade, that I don't believe there is one in 500 who is master of that one manœuvre.

I am told that even merchants and shipowners have petitioned against this bill, which is to effectually cure all the difficulties and ignorance I have just complained of. If this be the case, I can only presume they are labouring under a very erroneous idea of its tendency; for what can the possible effect be, the absolute certainty indeed, otherwise than speedily to make a considerable portion of the masters of merchant-ships as able as the pilots themselves? Where, in the name of common sense, do the pilots acquire their own knowledge? Where are all the masters of men-of-war instructed how to navigate their ships in pilotage water? Why, in their practice and observation in merchant-ships and men-of-war, to be sure; and why should not a master of a merchant-ship, with all the local knowledge attained fit to pass him as a pilot, (and this he must attain to allow him ever by the new bill to keep charge of his own ship in pilotage water,) why should not he be pilot of his own ship? Where is the

* A steam-boat ascended the Mississippi and Ohio a few weeks since, sixteen or seventeen hundred miles in six days and seventeen hours, as we learn from a gentleman then on the spot.

evil to arise from all this? Why, as a pilot told me the other day, the evil is, that *there will eventually be no need of pilots at all!!* just of course the very thing the bill contemplates; which is to make everybody understand his own business properly, and not to require a schoolmaster all his life.

That pilots should, however, be jealous, and that they should have bestirred themselves to keep up their importance, is not much to be wondered at; as they, of course, consider they have a sort of vested interest in their appointment: and, in this land of justice of ours, every man's property of every kind, however injurious it may ever be to the public weal, must be treated with respect. I would beg, however, to state my deliberate opinion, that the proposed bill will in no way injure the existing pilots; as it makes it imperative, the taking a pilot by a much greater number of ships at present exempt, than it will in all probability release from the obligation, (no ships being actually and unconditionally exempted by the new bill except such as carry the mails, the masters of which are to be presumed as qualified); and, according to the opinion I have already expressed, I think pilots need not fear that all at once we shall all prove fit to pilot our own ships. Eventually, no doubt, (as is intended, and as should be the case,) the business of pilots will nearly disappear, but not during the existence of those of the present day. Trusting, Mr. Editor, that this bill *will pass*,

I am your well-wisher,

“A SKIPPER.”

Naval Chronicle.

MONTHLY GOSSIP.—Well, my Worthy, here I am again with my budget of odds and ends of all kinds. And first of John Bull. As for him, honest, sober-minded fellow, he has been *lionizing* and *lionized* so much since my last, that his head has been fairly turned, and he has scarcely yet composed himself to his usual easy-going ways, from the effects of that all-engrossing and ever-to-be-remembered glorious event, the coronation of our young Queen Victoria on the 28th of June. As for business, that was not to be named; every thing in the shape of honest and fair dealing was suspended, and holiday-making substituted for it. Even your own *Nautical*, Mr. Editor, like the rest of the periodical flights from the press, I perceive, was hurried off before its due time.

Well, I suppose, I must not venture to talk of the joyous doings of the said 28th; for never did nation yet rejoice to its very centre so thoroughly, as did the people of this civilized land on that day—good-humour, kindness, and satisfaction were depicted in every countenance; each strove to be on the best possible terms with his neighbour; all were determined that so glorious a day should not be sullied by even an angry look. The particulars of the procession

from the palace to the abbey, composed of the gorgeously arrayed foreign representatives of the sovereigns of the earth; the different branches of our own Royal Family, with her Majesty, in whose honour all were thus busily assembled; the enlivening appearance of the military, and the joyous assemblage of some three or four hundred thousands of British subjects, through which it passed; all this, and what took place in the abbey, when that august, solemn, splendid, and imposing ceremony was gone through, of placing the crown of these realms on the brows of the fair monarch of the land,—must all be left to be pictured by your gifted readers, Mr. Editor, in their own generous and loyal minds. Nor may I breathe of the rejoicings throughout the land, when “The Queen,”

“Fair England’s fairest rose,”

received her costly diadem, surrounded by the royalty and nobility of the land. May it rest lightly on her head! An account of all this interesting ceremony, I apprehend, the *Nautical* itself would hardly contain. But if the land was alive on that day, as it most assuredly was, the water was no less so; and the Thames perhaps presented a spectacle of confusion and nervous excitement, unequalled by any other river. The numerous steamers crowded with passengers, rolling about the pool, listing fearfully to either side, and the rapidity with which they passed up and down the river, was alarming enough to those in boats. However, the only ill effects of it, besides *raising a sea* in the river, that astonished some of the cockneys, was sinking a barge near the *Phæton*, a French steamer, which brought over that worthy veteran, Marshal Soult.

By the way, Mr. Editor, have any of your naval friends paid a visit to this vessel. Your correspondent, *Mercator*, I think, in one of your former numbers, has given John Bull a few broad hints on the subject of *armed steamers*, and told him that the French were wide awake to this important matter, (and so is our very good friend, the Emperor Nicholas.) Perhaps it may not be amiss just to enquire whether he has seen those said French steamers, now lying in the river Thames, attending on the great French marshal. If not, and the said black vessels remain, it would be as well for him just to take a look at them off the Tower, and observe their tremendous armament. Why, in a war, this Frenchman would clear the channel! We have nothing that would oppose her. She would blow all our small craft to atoms, and laugh at us. But, Mr. Editor, it would be no laughing matter at Lloyd’s, where faces would be somewhat elongated. These French steamers make but little show; not much is said about them; they may not be very large, but they are confidently ugly. Query—Do the French build them so unattractive that they may pass unnoticed? Be that as it may, they are certainly built, as far as possible, at variance with the good taste of our French neighbours in their general naval architecture. I said they brought Marshal Soult over, the veteran warrior, opposed to the hero of Waterloo, (you know whom I mean,) who has met with a reception in this country, which has given him a better idea of the character of John Bull, than he ever obtained of him on the continent. The hearty welcome which the gallant soldier has received from every one, (and he has visited nearly every place worth seeing in the metropolis,) is the theme of admiration even in Paris. It was altogether

foreign to his expectations. He has known how to appreciate us as enemies, and now he has learnt how to esteem us as friends. It has been facetiously said, and with no untruth, of this veteran, that as he escaped with his life from our troops on the continent, John Bull is determined, by way of making up for it, to *kill him with kindness*, now he has got him in his power! On his visiting Greenwich Hospital, the portrait of Nelson was pointed out to the Marshal. He instantly took off his hat!! This reminds me of the mark of respect paid to the memory of Cook by one of his countrymen. These are honourable traits of character, and are felt with all their force by honourable minds.

And if we have been gay at home, Mr. Editor, our ships have been no less so abroad. At Quebec I perceive the landing of Lord Durham, on the 29th of May, from the Hastings, was followed by grand doings, to which the presence of the Cornwallis, Hercules, Malabar, Pique, Inconstant, Andromache, Pearl, Dee, and Medea, contributed not a little. In fact, it is said, that what with the men-of-war, the merchantmen, the presence of 1,600 British troops, the thunder of artillery, and the deafening cheers of the thousands who were present, Quebec has witnessed a sight which may not again occur for some time. And Admiral Sir Robert Stopford and his officers have been equally busy at Toulon, where the coronation of Queen Victoria has been celebrated in downright hearty good earnest. Sir Robert, I see, after entertaining the King and Queen of Naples, has carried off with him the golden opinions of the Frenchmen of Toulon, and has been as cordially entertained by the Prefect and good people there, as Soult has been welcomed in London. Ah! Mr. Editor, depend on it, it matters little what nation a warm, upright, and generous heart belongs to; it is made of the same right sort of stuff all over the world, and that I have found in a good many places, which it has been my lot to visit.

By the bye, talking of Quebec, reminds me of all those unfortunate

“Hard words, jealousies, and fears,”

which

“Set folks together by the ears,”

and which have recently been dealt out in that part of the world. So the affair of the late rebellion has been followed by a retaliation in the destruction of the steamer “Sir Robert Peel,” by fire, for our sending the Yankee steamer “Caroline,” over the Falls of Niagara; and a brigand chief, a downright outlaw, armed *cap-a-pie*, named William Johnson, has declared himself at war with Great Britain! and, with a handful of desperate followers, has taken to the strong holds of the thousand islands in the river St. Lawrence. He is said to be hardy, bold, and resolute; and though one thousand pounds have been offered for his person, by Lord Durham, the chances are he will not be taken alive. It is gratifying to observe, Mr. Editor, in the midst of all this petty warfare which has been carried on by some of the evil disposed *canaille*, both of the American and Canadian frontiers, that the two governments look on the whole business in its real light; and the President of the United States responds to the appeal of our government in a strain, which shows that the attempts of these people to embroil the two countries in a war will be unavailing. “Such design,” says the President, “cannot succeed while the two governments appreciate, and confidently rely on, the good faith of each other

in the *performance of their respective duties.*" Doubtless, the President is quite right, as all right minded men must see that the whole affair has been the work of radicals of the William Johnson breed. And, if we may judge from what is going forward at Sacket's harbour, it will soon be set at rest, and the said brigand chief where he ought to be, viz., in the hands of justice, to be dealt with according to law.

But you will say, I am becoming political, Mr. Editor; and, as I know you abjure politics, by way of changing the subject, or as a collateral branch of it, whichever you please, what think you of our gallant naval writer, Captain Marryat, having been hung and burnt in effigy in those ultra radical places, Detroit and Lewiston! yes, fairly burnt in effigy, made up of a bundle of rags, straw, and all the copies that could be collected of *Midshipman Easy!* Taunts, howlings, and hisses, were dealt out plentifully by the *free and enlightened citizens*; merchants, lawyers, mechanics, and all, old and young, rushed to the *scene of danger!* and like so many savages of New South Wales, *danced round the fire!* yelling and screaming, till the effigy was consumed; the effigy of the man who had had the brazen effrontery, at Windsor, on the occasion of a dinner, on St. George's day, to give the health of Captain Drew!! Bravo Jonathan; this is going ahead, as you have it, in real earnest; you may go ahead thus, but you will not gain much in the esteem of civilized lands by such gallant acts of heroism! Doubtless, Captain Marryat enjoyed a good laugh on the occasion, and peradventure the event may fall into his next book, where, in spite of the fires of Detroit and Lewiston, it will be handed down to posterity. Of course, you know it was Captain Drew of the Royal Navy, who headed the party that sent the rebel schooner Caroline over the Falls of Niagara. Aye, they had better not burn their books in that part of the republic I guess, Mr. Editor: education and civilization seem to be much wanted there.

Well, before I have done with Canada, let me ask you a word about the merchant-seamen. What is Jack about there? I see the masters and owners of British vessels at Quebec, welcomed the arrival of Lord Durham with an address, pointing out the necessity of adopting some means of protecting the trade of that place from the heavy losses to which they are exposed by the ill conduct of their seamen, who, from the prospect of obtaining higher wages, and the allurements of the crimps, are induced to desert their ships, whereby serious injury arises. Oh Jack, sorry I am to say this of thee! If I meet you on shore in your own country, you are sailing under a very different flag from that of *bad faith!* Well, the shipowners at Quebec are for establishing a police, and suppressing disorderly houses, the resort of the seamen; and adopting certain measures which had already been taken by Lord Durham, who promised his best exertions for the encouragement of British shipping, and the protection of British commerce. Indeed, Mr. Editor, it is high time the scandalous, indecent, and vile practices regarding our merchant-seamen at Quebec, were put a stop to; and let us hope, that by the active measures of Lord Durham, Jack will be regained from the haunts of profligacy, debauchery, and crime, which have been prepared for him, and into which he has too readily fallen at that place. But to judge by the general state of the merchant-seamen of this country, in various parts of the world, either the merchant-seaman's act is very ill understood, or very ill attended to, or it works very ill indeed. Every day gives

fresh evidence that the discipline of the mercantile marine cannot be maintained. Trifling penalties, (a day's pay for instance,) and convictions got with difficulty, make seamen laugh at their Captains! How long is this to go on? By the way, the sooner that pilotage bill which was gagged the other day in parliament, the sooner that comes forward, the better. I see there are certain of the cinque port pilots, (twelve I believe,) allowed to bring vessels up to London! (above Gravesend;) and if the vessel has a steam tug, the owner can deduct the usual allowance from the pilotage, as is done by the river pilots; although it is pretty certain that these twelve pilots are far less skilful than the river pilots, and, in fact, unfit to bring ships up the pool without steamers. It seems either that *they* are not named in the order in council, or that not being under the Trinity corporation do not come under the regulations, and that others have not been framed to include them. Please to look to this, Mr. Editor.*

I find that, besides a chamber of commerce being established at Madras, improvements are going forward in the way of supplying water to shipping. Hitherto when water has been required for the ships in the roads, they have had to send their boats for it to the Honourable Company's watering place, nearly a mile from the marine department and custom-house, and in the S. W. monsoon they have always had a tedious heavy pull-up; especially when blowing fresh, and a strong current running to the northward. All this is ordered better now, besides a reduction made in the charge for water. Pipes have been laid down, at the recommendation of the master-attendant, from the old waterage along the beach, to abreast of the custom-house, where the boats generally ply. Application, I see, has also been made by the head of the marine department to the officer in charge of the arsenal, for leathern hose, which will save the necessity of rolling the casks into the surf, and which may possibly lead to a further reduction in the charges for water.

Your nautical readers, Mr. Editor, will also be glad to learn that improvements are going forward at Madras to facilitate the embarking and landing from ships. Previous to the bulwark on the beach being built in 1821, by Major Havilland, a temporary landing-place was used opposite the sea custom-house; but since that time, persons have had to walk over high and uneven stones, in going to and from the boats. The government has sanctioned the construction of a wooden jetty, which is now completed. It is fifty-three feet long, in a direction parallel to the beach, and extends from the coping-stone seaward, over the bulwark twenty-six feet, in a sloping manner, corresponding with the declivity of the beach. On the sea margin of it, nine strong piles are driven into the sand, with cross planks, three inches in thickness. The only drawback to this little jetty arises from the uncertainty of there being always a sufficient beach to admit of a boat to approach it with safety when much surf is on. Sheds, for the convenience of persons shipping cargo, are in active progress, extending two hundred feet along the beach. By the bye, talking of Eastern affairs, I find that that enterprizing officer, Captain Lynch, who was with Colonel Chesney on the unfortunate Euphrates expedition, reached Hit, on that river, with his steamer, on the 31st May, after 120 hours' steaming for 539 miles above Basra, against the stream of the river, at its

* If ARGUS will illustrate this by stating a case, we will insert it.—Ed. N.M.

strongest time of the year. He expected to be at Belez in a few days, after thus completing his ascent up the river to 1,079 miles. Aye, Mr. Editor, that Euphrates affair has been unfortunate from the beginning; but depend on it, sooner or later, people will find out that it is not so bad as it is said to be. Looking in at Calcutta the other day, I observed the French frigate L'Artemise, of sixty-two guns, Capt. La Place. I merely notice her to mention to your naval readers the excellent order she was in, and that her guns are fitted with *percussion locks*. I believe that improvement (?) has not yet found its way into our men-of-war.

More bad doings on the African coast, Mr. Editor,—that grave of gallant naval men. I see that valuable officer, Commander Dickey, of the "Waterwitch," and several of his crew, have fallen victims to the fever; Dr. Threshie, the assistant-surgeon of the "Viper," also; and there has been more havoc at Ascension, the command of which place I see is given to Captain R. S. Tinklar, of the Marines. So there are hopes of the old and vexatious question of the Jersey oyster fisheries being finally and fairly settled by the mixed commission now sitting, and there will be an end to the seizing and detaining; and the retaliation consequent thereon of fishing-boats, both French and English, but principally the latter. The conciliatory spirit of the French authorities goes far towards ensuring this happy termination of the affair.

The "Beagle," I find arrived at Swan River on the 15th of November, and was busy preparing for her examination of the western coast of Australia. I regret to inform you that Captain Wickham, her commander, had been suffering severely from dysentery. She is to be at Sydney in September next, preparatory to a projected examination of Bass Strait. The "Hastings," just arrived from Quebec, I find, has been inspected by Earl Howe, at Portsmouth, and is fitting up for the reception of the Dowager Queen Adelaide, to convey her, it is said, to Malta, a more genial climate in winter time than that of England. Pray, what is there at the bottom of this affair between Mr. Moore's yacht and the coastguard people? Something mysterious, it is said. You know the vessel is stated to have been repeatedly and wantonly *fired into with ball* by coastguard-men. I hope to tell you more about it in my next. Talking of firing ball-cartridge, I see the affair, which I mentioned in my last, of the wherry-man being shot by a marine of the "Rainbow," is at an end. Things were in due train, it appears, at Winchester, for the trial of the marine, James Adams, and the judge had explained the law to the grand jury, when these gentlemen put an end to the whole matter by *ignoring the bill*, as might have been expected.

A new lighthouse, I perceive, has been commenced at Ardglass, and there are symptoms of the same kind about to take place at St. John's Point, alluded to in my letter in your May number. It is said, also, that Scottish commissioners are about to inspect the Covesea skerries, in the Moray Frith, with a similar motive. Talking of lights, I am *delighted* to see, that the disgraceful state of the *lights* on the coast of the United States, has been represented in a spirited letter to the American government, by Messrs. Blunt, of New York, and, as it has thus been brought under the notice of Congress, it is hoped that these *glaring* evils will not be allowed to continue longer in their present condition.

Sir William Symonds, I perceive, has been launching another of his sixteen gun brigs, the pilot.* By the bye, I perceive Lord Ingestrie gained his point after all, the other day, in parliament. What benefit the country will gain thereby, remains to be seen, Mr. Editor. One Wise-acre, says, it will prevent the occurrence of wrecks in the merchant shipping! which, to me is wonderful: another says, it will improve naval architecture, perhaps he means marine insurance! surely that thrives well enough already! Depend on this, Mr. Editor, that it will neither improve our men-of-war, nor will it establish a marine board, and John Bull will go on as he has done, *building* his ships, and *sailing* his ships, and *finding* his ships, just as he pleases. But Sir Robert Peel, it appears, suggested the form of the motion, that, "Copies of any reports of the senior officers during the respective trial cruises be laid before the house;" and so the long string of returns has dwindled into this at last. The gallant surveyor would have no objection to go further, I am sure. I am sorry to inform you, that Lieutenant Ayscough has been dismissed the *Barham*, and placed at the bottom of the list of lieutenants, by the sentence of a court-martial. The king of the Netherlands has directed a gold medal to be presented to Captain T. Stock, the master of the *Ranger*, brig, for saving the crew and passengers of the brig *Padang*; and, before I forget it, let me tell you also, that Lieutenant Roberts who navigated the *Sirius* steamer to New York, has been presented with an elegant piece of plate for his good services: and this by-the-by, brings me to the Atlantic steamers! Well, *Steam-navigation*, I guess, goes on as *swimmingly* as ever. It is no matter of theory now, all downright fair play, fair going. The *Great Western* averaged nine miles per hour going out, and something more than ten miles per hour, coming home from New York; the thing is becoming as common as rail-road travelling, and, if I mistake not, the mails will be expedited by it, as those were on shore by the rail-roads. I mean the mail to Jamaica, *via* New York. The passage for a steamer to Jamaica, (north side) from New York, is but five days; hence twenty days would reach Jamaica from England! It was only the other day that her Majesty's ship, *Rainbow*, performed this passage in sixty-three days! nine weeks; and twelve weeks have frequently been the passage out. Indeed, thirteen weeks was the common passage for a convoy. Just imagine, Mr. Editor, the ships, graced with a green vegetable fringe, their bends mottled with white incrustations of salt, displaying visible confirmation of the dilatory slowness of their progress! Well, all this has had its day.

One effect of these Atlantic vessels, is to increase the old New York liners. These fine vessels, I see, are sailing *five times* in the month instead of twice, as formerly. But Atlantic steam-navigation, no one doubts now, is established; and notwithstanding, Bristol is bestirring herself, and *about* to build three more vessels, the size of the *Great Western*, to be called, respectively, *the President*, *the Great Britain*, and *the United States*, the Bristolians must take care that Liverpool does not take the lead of them, as she has long since. Liverpool has already a steamer running to New York, called

* Her dimensions,—length, 105 feet,—breadth, 33 feet,—depth of hold, 15 feet,—nearly 500 tons.

the *Royal William*, the property of the Dublin steam packet company, commanded by a lieutenant of the navy. She left this country on the 5th of July. Then there is another Atlantic company close on their heels, whose advertisement I saw in your last number, Mr. Editor, with their steamer, the *Liverpool*; but, if the *Liverpool* men bestir themselves in earnest, and with the same active energy which has raised their city to its present eminent station, they will not fail to reap their full share of reward, and assist in showing the world that the Atlantic is not that impassable gulf between the old and new world, that theorists made it out. But *Liverpool* *must* take the field in her own defence, and let me advise her not to be afraid of size and power in her vessels.

Well, the *British Queen* has reached Glasgow, and is now taking in her engines. Great things are said of her, and greater are expected. Then again there is something said of steamers to the Brazils, touching on the coast of Portugal, Madeira, the Canaries, and Cape Verd Islands, and why not Sierra Leone? Doubtless, there is much to be done on the coast of Brazil, and a company, which I perceive is forming to navigate the extensive estuary of Bahia, similar to that of Rio Janeiro, will be followed by others of the same kind, on other parts of the coast. In fact, steam-navigation is now rapidly establishing itself by means of British capital in those parts of the world for which it is peculiarly calculated. There was a little iron vessel called the *Voador*, which left *Liverpool* for Rio Janeiro in May last, and which has found her way, I see, into *Maranham*. What has been the cause of her getting so far to leeward? Is it that her compass was affected? By-the-bye, that point ought to be cleared up; and I am glad to find that some experiments are going to be made by order of government on an iron vessel in the river. It is an important point in steam navigation, and so is the proper construction of boilers, Mr. Editor; at least, so John Bull thinks, if his friend Jonathan does not. Two more accidents since my last, in the United States waters, by which above a hundred persons have found a watery grave. This would not do in the river Thames, if we are to judge by the expression of feeling at the meetings of the coroner's inquest of the *Victoria*. This affair is not *yet* terminated, and we are *yet* to learn what will be the verdict of the jury. One or two points seem to be pretty clearly established in the evidence, for which the public stand indebted to Mr. Seaward, Mr. Penn, and Mr. John Dickson, engineers, as well as to Mr. Ewart, the government engineer of Woolwich dockyard. These gentlemen have spoken out plainly and seem to be quite agreed that the accident *has* arisen from "a concatenation of unfavourable circumstances in the boiler!" These, no doubt, will come out at the conclusion of the inquest, which is adjourned to the 31st of July. In the meantime, John Bull is to be assured (!) of the perfect safety of the boilers of the other Hull vessels of the same construction, from the fact of their not having *yet* exploded, and from the numerous instances which have been cited of certain Scotch vessels' boilers which have *already* exploded! *Mais nous verrons*, Mr. Editor, as soon as the jury terminate their laborious and unpleasant task.

That ingenious gentleman, Captain Ericsson, I see, is busy trying experiments with his propeller, fitted to an iron vessel, constructed by

Mr. Laird, of Birkenhead. She is called the "Robert Stockton," built for Mr. Ogden, the United States' consul. I hope, if Captain Ericsson is successful, that he will favour your readers with a description of his machine, from which I anticipate more use in river than in ocean navigation. By the bye, the logs of the first voyage of the "Great Western" have been published, with her tracks, in a very creditable form by the managing director, Lieutenant Claxton, R.N.; and afford an exciting and highly interesting account of the voyage. Here is a sample of it:—"Tuesday, 10th, (they left Bristol on the 7th,) at 2 A.M., two sail in sight; a large ship abeam to windward, standing E.; a ship on weather bow, close-hauled on larboard tack; wind W.S.W. Soon discovered a black ball painted in the foretopsail of the latter, by which we knew her for a packet-ship; hoisted our colours, the American at the fore; kept the steamer up a point, and at 11 passed and spoke her; the South American, seven days out of Liverpool for New York." This overhauling of one of the *liners* from Liverpool on the third day after starting, was a matter of exultation and triumph, which even the log does not fail to record. The "salutations were in the courtesy of the seas," as the liner was plunging and dashing the foam about her bows, in all the misery of being close-hauled, with every inch of canvas set against a fresh breeze in her very teeth. The words exchanged by the captains were few; adieus were made; three hearty cheers were exchanged, the helm was ordered to starboard, and the "Great Western" resumed her course; her passengers, envied, no doubt, by those of the liner, stretching away out of her's on the larboard tack. By the bye, I perceive, Mr. Editor, you gave these steamers a hint in your last, in pointing out the course they should steer; they ought to see to it, and not increase their distance by running off it.

Your devoted,

ARGUS.

P.S. You have heard, I suppose, that Sir John Herschell has been created a baronet, and I perceive that her Majesty, the Queen, has directed the royal standard to be displayed at the palace when she is in London, in the same manner as it is at Windsor, that her subjects may know whether she is in town or not, without inquiry. This is as it should be, and I am rather surprized that our late naval king did not adopt the same plan. It would not be amiss, however, if the flag was looked after and *trimmed* or *cleared* occasionally, as the eddy winds cause it to foul now and then. This is a grave offence to a *nautical* eye, although it might pass unobserved by a military one. Her Majesty's *naval aid de camps* know this very well, and some one should see to it. They well know such slovenly work would not be tolerated by any admiral, captain, or other officer afloat in her Majesty's navy, where every flag and pèndant aloft flies clear from the *truck*, Mr. Editor, and so ought the standard of our country, *par excellence*; more particularly when it announces the presence of our much beloved Queen Victoria. As I said, such half-mast-high-work may pass muster before a landsman, but it will not do in the eyes of

ARGUS.

MENAI LIGHTHOUSE.—Notice is hereby given, that, in fulfilment of the intention expressed in the notice from this house, bearing date the 6th of April last, the light at the north-eastern entrance of the Menai Straits, will be exhibited for the first time, on the evening of Thursday, the 28th instant, and thenceforth continued every night, from sunset to sunrise.

Mariners are to observe, that the light in this tower will be stationary, and of a red colour, visible from N.W. $\frac{3}{4}$ W. seaward, to S.W. $\frac{1}{4}$ W., excepting that by the intervention of Puffin Island, the light will be eclipsed to vessels upon the bearings from it of E. by N. $\frac{1}{2}$ N. to E. $\frac{1}{2}$ S.

N.B. Masters of vessels, and others, are hereby cautioned not to approach the lighthouse within the distance of fifty yards, on account of a ledge of rocks which extends under water from the base of the building.

By order, J. HERBERT, Secretary.
Trinity House, London, June 14th, 1838.

SHOEBURY-NESS BUOY—Swin Channel.—The southern edge of the Maplin Sand having undergone some change, the Shoebury-ness buoy has been removed about $1\frac{1}{2}$ mile E. by S. $\frac{3}{4}$ S. from its former position, and an additional black buoy laid on a projecting spit of that sand, about two miles further eastward. The present positions of these buoys are as follow, viz. :—

The Shoebury-ness buoy (black) lies in 3 fathoms at low water, spring-tides, with

Hamlet windmill in line with the west end of southend terrace	N. W.
Queenborough windmill in line with the highest windmill at Mile Town	S. W. $\frac{1}{4}$ W.
Nore light-vessel	S. by W. $\frac{3}{4}$ W.

The east Shoebury buoy (black) lies in 5 fathoms at low water, spring-tides, with

A white windmill inland in line with the third house eastward of a long barn on Foulness Island	N.N.E.
Prittlewell church on with the third building eastward of Shoebury Preventive Station House	N.W.
Black Tail Beacon	E. $\frac{1}{4}$ N.
Shoebury-ness Buoy	W. by N. $\frac{1}{2}$ N.

Note.—The foregoing bearings are all magnetic.

By order, J. HERBERT, Secretary.
Trinity House, London, 6th June, 1838.

HOOK OF MARGATE BUOY—Margate Sand.—The south-west spit of Margate Sand having undergone some change, the white beacon buoy, marked "Hook of Margate," has been removed $\frac{3}{4}$ of a mile W.S.W. from its former position, and now lies in 4 fathoms at low water, with the following marks and compass bearings, viz. :—

Reculver new church, in line with the south side of Reculvers old spires	W. by S. $\frac{1}{4}$ S.
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ENLARGED SERIES.—NO. 8.—VOL. FOR 1838. Digitized by Google

West end of Birchington Wood, in line with Birchington western windmill S.S.E. $\frac{1}{4}$ E.
 Gore Patch Buoy N.W. $\frac{3}{4}$ W.

The Gore patch buoy has also been removed about forty fathoms in a south-western direction, and now lies at six feet at low water spring-tides, with the following marks and compass bearings, viz. :—

West end of Cleave Wood, in line with the Preventive Station on Birchington Cliff S. by E. $\frac{3}{4}$ E.
 East end of the miller's house at Chislet, in line with the west end of Vantepier farm buildings S.W.
 East last buoy N.W. $\frac{3}{4}$ W.

The corporation has also caused a large beacon buoy of a new description to be placed experimentally nearly midway between the east and west tongue buoys.

By order, J. HERBERT, Secretary.

Trinity House, London, 6th June, 1838.

NEW HARBOUR LIGHT OF CHERBOURG.—Notice is hereby given, that a small red-coloured fixed light will continue to be shown every night upon the little tower recently built at the extreme end of the eastern jetty of the Port de Commerce of Cherbourg.

This light stands thirty-three English feet above the high-water mark at equinoctial spring-tides.

In clear weather, this light may be seen at the distance of a league upon either of the channels into Cherbourg Road.

It is to be observed that a line drawn through the buoy off the western extremity of the Breakwater and the above-mentioned little tower, also passes through the *Fort du Homet*, so that the light is concealed by the fort from those vessels which are to the westward of that line.

Hydrographic-Office, Admiralty, 7th July, 1838.

ROYAL GEOGRAPHICAL PREMIUMS.—We have great pleasure in recording the following address of W. R. Hamilton, Esq., president of the Royal Geographical Society, to Colonel Chesney, at the last anniversary, on the occasion of presenting him with the royal premium. “Colonel Chesney,—When, on two former occasions, it fell to my lot, in the presence of the Royal Geographical Society, to present the annual royal medals awarded by the council,—first, to Captain Sir John Ross, and afterwards to Captain Back, I congratulated them on the triumphs they had achieved over the difficulties which had met them in the regions of perpetual snow and ice, amidst inhospitable and untrudged deserts, and on tracts of land, which they had brought to light for the first time, since the world was tenanted by man.

“It is now my no less pleasing duty to offer to you the warm acknowledgments of this Society, and to present to you the Royal Premium, for the equally brilliant successes which have marked your progress under the opposite extreme of temperature; in re-opening to the civilized world a large portion of those countries, which, in times of yore, were the seat of extensive monarchies, which abounded

in flourishing and populous cities, and whose inhabitants were equally famed for their conquests, their commerce, and their science, but which countries have long been excluded from the pale of polished nations, and plunged in a state of barbarism, perhaps more to be deplored than the life of the hunter in the woods, because it presents a combination of the sloth and ignorance of savage life with the ruins of a degenerate civilization.

“ In the year 1830, you were prompted by your own ardent zeal for the honour and welfare of your country, and by your wish to confer upon it a signal service, by extending its commercial resources, with a direct view, too, to the enlargement of geographical knowledge, to visit the south-eastern provinces of the Turkish empire: You spent nearly three years in exploring those regions, and in surveying the shores, depths, and shallows of the Euphrates, its resources, difficulties and facilities, in order to ascertain the feasibility of its navigation with European vessels, properly constructed; and thus making this river, once so celebrated in the annals of antiquity, but which had for twenty centuries rolled along its majestic waters uselessly to man, again available for the noblest purposes of life, again to be the channel for social and commercial intercourse; but not merely for the benefit of the Assyrian and Chaldee, but for the great purpose of approximating, as nearly as possible, the shores of Britain, the emporium of Europe, to the great towns of India, now the brightest spot of the continent of Asia.

“ This project, the offspring of your enlightened benevolence and patriotism, was followed up by your own characteristic energies; and, after many difficulties thrown in your way, by the doubts and hesitations natural to those who were to be responsible for the prudence of the undertaking, your views were adopted, and you succeeded in prevailing upon the government to fit out the Euphrates expedition.

“ On the results of this expedition, (whatever differences of opinion may still exist respecting the practicability of adopting the line of the Euphrates, as the means of that regular commercial intercourse to which I have alluded,) there can be but one opinion on the ability with which it was planned, the foresight with which all the necessary accompaniments of it were provided, the skill by which it was directed, and the cordial co-operation with which it was conducted to its close, by all who were assigned to you as assistants in the task. Those individuals have received substantial proofs of approbation, whether by immediate promotion, or by equally acceptable testimonies, in the shape of employment in those countries. But it is the peculiar province of this society, and a most gratifying duty at the same time, to testify their appreciation of the distinguished service you have rendered to the science of geography, as well in your first independent journeys, as afterwards, when an officer in the public service. You have been the pioneer, to point the way, and to open the road into a large range of country, hitherto very imperfectly known: you, and those under your command, have really navigated, for the first time in modern history, two of the most celebrated rivers of the ancient world—the Euphrates and Tigris: you have added largely to our knowledge of Syria and Mesopotamia, Assyria and Susiana; you have carried on a line of levels from Iskanderun to Bir, and thence along the whole course of the Euphrates to the Persian Gulf; you have laid down the course of the Orontes, from its mouth to Jisr

Hadid, and you have done more than enough to secure to yourself a place among the distinguished geographers of our time. These are the grounds upon which the council of the Royal Geographical Society have judged it right to award to you the first royal premium, which the munificence of our illustrious patroness, Queen Victoria, has placed at their disposal, for the reward and encouragement of geographical researches; and, I have only to add the expression of hearty satisfaction which I feel at being the organ of the Society on this auspicious occasion."

To this address, Colonel Chesney replied:—

"Sir,—The honour just conferred by the Royal Geographical Society of Great Britain would be most gratifying to any man; and for many reasons it must have an increased value in my estimation, if I thought I had really any other claim to it, than that of having been at the head of the energetic men who actually performed the work.

"My individual efforts prior to the late expedition have been kindly noticed, but I must hope for permission to pass by, altogether, the descent of the river Euphrates in 1830, which is now but an imperfect recollection; and the award being in reality for the late expedition, I cannot help feeling some regret that the rules of the society do not permit me to urge the claims of those which were greater than mine individually; for I, at least, cannot forget that the almost unequalled labour of the transport across Syria, was chiefly accomplished when I was confined with a brain fever; and that the leading discoveries in geography were made when I was not present. It is true that every individual performed his part admirably; but the situation of some made them more conspicuous than others. For instance, the discovery of a new river and the examination of Susiana, took place when I was in India, Major Estcourt being then in command; and, as you all know, the valuable mines, &c. in Kurdistan were met with by Mr. Ainsworth, when coming home from the Euphrates steamer, which had been laid up at Bagdad, after a successful navigation of more than 3000 miles of unknown rivers; and it is sufficient to observe, that this was accomplished under the direction of Lieutenant Cleaveland, R.N., and his two persevering Lieutenants, Messrs. Charlewood and Fitzjames, without having touched even once the dreaded rocks of the rivers Euphrates, Karun, and Tigris, of which we hear so much in this country.

"As, therefore, both the credit of anything like the advancement of geography, as well as the more daring part of the navigation, belongs to others, I should have been still more gratified, if the award had passed through me to one of the gentlemen who remained to the close of the expedition; but as it has been decided otherwise, I accept the medal as their representative; and in doing so, I would offer my warmest thanks to the president, and other distinguished individuals, composing this society, which I hope will add to the distinction already conferred, by permitting my name to be added to its numerous list of members.

"It may not be quite out of place to say a few words about the late enterprise, which, we all know, was not popular. Why, I cannot say; but I am not without the hope, that the distinction conferred on the expedition this evening, may, in time, lead to a different state of things, as the geography of Asia becomes better known. We have had to contend with prejudice, and ignorance, its handmaid, to an

extent which would have been amusing, if the effects had not been so fatal. Of this, were it not invidious, I could give other instances, which would be enough to show that I do not expect to make the question really understood by the public for some years to come. Here, however, the case is very different, and the award of to-night will be the harbinger of better times, when the real state of the question is fully known and fairly looked at, which is all that the officers of the expedition ever desire.

“ Men are ready to encounter the greatest dangers and the most trying difficulties for a brief period ; but protracted trials like ours, during a temperature which varied between 108° under a tent, and 8° below zero in a house, with at least *one* serious attack of illness in every individual case, are seldom met with the same unshaken constancy that was displayed by the officers and men throughout the gigantic operation, which alternately engaged Lieut. Lynch and every other person, myself excepted. This work, which would have been nothing comparatively, if the Pacha had not broken up the judicious arrangements made as to canals, boats, &c. by Lieut. Lynch before we arrived, was effected, after the successive illness of Major Estcourt and all the others, by Lieut. Cleaveland, who was in charge of the operation for the second time, when he brought in the last boiler to Port William by means of 104 bullocks and 52 men guiding them through the deep mud. Besides the difficulty, there was another marked circumstance attending the transport, viz., the decided honesty of the Arabs, who were entrusted with many valuable things, which were taken, unattended by any Europeans, from the sea to Port William, almost invariably without loss, and subsequently they continued to bring our letters and parcels of money, wherever we happened to be, with equal fidelity : indeed, we never had but one misunderstanding during the two years we were amongst the different tribes of Arabs.

“ The descent and survey of the river now commenced, March 16, 1836, by the two vessels which had been thus carried across, with the most perfect success ; and all went on smoothly to the 21st of May, when our first and only calamity occurred, by the loss of the Tigris, and with her twenty fine fellows, and most of our tools. Great as this calamity was, which thus deprived us of half our means morally and physically, it was not without some advantage in furthering the ulterior objects. My original instructions were to break up the expedition on reaching Basrah, which were repeated in a letter I received from the president of the Board of Control, about ten days before the storm, the contents of which I had kept to myself, not to discourage the others, and meaning to obey. But when the vessel was carried to the bottom I determined to continue the expedition at my own risk, chiefly on the ground that it would have reflected on the nation to abandon it at such a moment ; and I look back with gratitude on the willing support I then received from every one, at a time when a recent calamity of such magnitude might have justified a very different course from that of giving up their pay, in order to lighten the expense and lessen my responsibility. The Euphrates steamer having continued the descent to Basrah with the same marked success as before, and there being no means whatever there to replace our tools, or even obtain planks, we proceeded to Abu-shehr, where she was refitted after much difficulty and great delay.

“ On returning to the Euphrates we examined the rivers Bahamishir and Karun, after which we carried an Indian mail to Bagdad. After this was done we commenced the ascent of the Euphrates, when its waters were at the lowest, but we found sufficient even for a large vessel, till an accident happened by cracking the cross-head of the air-pump, and she returned with one engine only, without the hope of doing anything more; but as it was opportunely and successfully repaired alongside the *Hugh Lindsay*, the Euphrates was despatched to continue the examination of the rivers of Susiana and the Tigris, under Major Estcourt, while I proceeded to India, to arrange, if possible, for the continuance of the expedition; and I succeeded when too late, for Major Estcourt had already broken it up at Bagdad, in consequence of renewed orders from England, before he was told from India to proceed.

“ During an undertaking, which is mixed up like a nursery tale with rocks, cataracts, deserts, and millions of Arabs living by the plunder of an occasional traveller, we had no accident whatever but the breaking of the cross-head; and our only regret was the loss of many valuable men, amongst whom was a most promising officer of artillery, Lieut. Robert Cockburn, and another individual who will long be regretted by this and other societies. But Lieut. Murphy had already completed a series of observations from the Mediterranean to the Persian Gulf, which will transmit his name to posterity as having been the first to lay down a certain base for future explanatory journeys, both northward and southward from it, as a starting point. Other objects have been attained during the expedition by the remaining individuals, to whom I hope to do some little justice in the work now in preparation; therefore, I shall now merely beg the president and the rest of his fellow-labourers in the good cause of the advancement of geographical knowledge, to accept the warmest thanks of myself and the other officers for the marked distinction which has been conferred upon the late expedition. And may every such enterprise be equally honoured on its return by the fostering care of this society!

“ The Euphrates steamer was still without men to navigate her in February, but some were about to be sent to her from Bombay, and an engineer also. On their arrival, Lieut. Lynch was to recommence, and if he is supplied with suitable means, it will soon be shown that our opinion as to the river being easy of navigation was well founded, —for the fact will speak for itself.”

[For various papers on this subject, and a map showing the geographical relation of the three modes of making the passage to India, we may refer our reader to the volume of the *Nautical Magazine*, for 1835, page 202.]

SHIPWRECKED AND DISTRESSED SAILORS' ASYLUM.

(Concluded from page 493.)

GEORGE FREDERICK YOUNG, Esq. had come to the meeting not prepared to move a resolution, nor even aware of the course which would be adopted. He came, however, with the strongest feelings on the subject; and those feelings had been confirmed by the unfortunate appearance which that room presented, particularly when they recollected the object for which they had met, and the honour which had been done them by the distinguished Admiral's taking the chair.

He wished he could join in congratulating the society on its success. He could not consistently do so, when he considered that in June, 1837, the committee had stated that they had a balance in the treasurer's hands of 108*l.* 19*s.* 8*d.*, and that, at the conclusion of the year, (ending 31st May, 1838,) their accounts closed with a balance of only 27*l.* 14*s.* 8½*d.* When he looked to the objects which the institution had in view, he could not consider that everything had been done in the way most calculated to secure success. He thought with all possible respect to the committee, that they had taken too narrow and confined a view of the subject. He meant not to impugn their conduct, for he thought that, compared with the limited extent of their means, their conduct had been above all praise. After alluding at some length to the services of these gentlemen towards advancing the cause of the institution, and particularly to Sir E. Codrington's devotion of time and money to the same object, he declared that it was discreditable to the great mass of intelligence and humanity in that city, that, when the gallant Admiral had come to the heart of the city of London to promote the interests of those seamen who were the cause of its pre-eminence as the emporium of the world, in that large room there should not be one of those proud names which were foremost in every other work of charity. They should seek out the cause of this anomaly. They should probe this evil to its source. They were wrong on the main ground. They called this an Asylum for Shipwrecked and Distressed Sailors. There was the cause of their want of success. He would say, that the destitution of seamen formed their least claim to relief, as it was the consequence of their vice and improvidence. Where absolute destitution existed, the law of the land gave relief. But they should strike at the root of the evil, and elevate the moral character, and improve the condition of sailors generally. He was ready to give his assistance to so desirable an object. He had had some floating notions on the subject, which, in order that their accuracy might be tested, he had sketched out, and now offered to the meeting, not with any dogmatical feelings, but as simple suggestions, that it might be seen whether it was possible to make this meeting a nucleus for uniting all who wished well to seamen, in one common object. They should first declare this simple fact: "That considering the intimate connexion subsisting between the character and condition of British sailors, and the national prosperity, glory, and safety, policy and duty should induce every lover of his country to extend protection, encouragement, and assistance to British seamen." This was a truism against which no hand could be held up. He now came to the second declaration: "That the present state of a large portion of our brave and hardy sailors, physical, moral, and religious, is not consistent with the enlightened spirit of the age, and must be considered peculiarly discreditable to the opulent and intelligent classes, who, from their commercial pursuits, are especially connected with maritime affairs." Having then alluded to the general feeling which pervaded the public mind in favour of institutions which professed to be founded on the principle of affording moral and religious instruction, he contrasted with the present thin attendance, a meeting of the friends of the British and Foreign Seamen's Society which had lately been held, and by which the great room of the City of London Tavern had been crowded to excess. Having dwelt at considerable length on the necessity of

remodelling the institution on this principle, and having clearly demonstrated the success which would be then sure to attend their efforts, he entered into some harrowing details to show that the physical, moral, and religious condition of seamen, was not creditable to the nation or the age. Having next alluded to the very strong effort which had been made in 1835, to build an asylum for merchant seamen opposite Greenwich, which would vie with the establishment on the opposite bank, he said that he had in December, 1835, held meetings in Sunderland, where 1,500 seamen attended, and on the banks of the Tyne, where no less than 700 or 800 were present; and they all expressed their readiness to contribute towards the erection of such an establishment. As those men were willing to put their shoulders to the wheel, the mercantile interests were bound to assist them, as they were willing to assist themselves. He should abstain from entering into the details of the mode of affording that assistance, as entering into details frequently injured a good cause. As the correctness of the two former propositions was admitted, he would now move the following: "That in order to carry into effect the most efficacious means for improving the condition and elevating the character of our merchant seamen, a committee be now formed to co-operate with the committee of the 'Shipwrecked and Distressed Sailors' Asylum;' that the following gentlemen be requested to constitute such committee, with power to add to their numbers; and that the wealthy and influential merchants, shipowners, and underwriters, be invited to give their concurrence and assistance. That the committee be requested to take such steps as may appear advisable for giving effect to the proposed objects, either by convening another public meeting, or by proceeding at once by such means as they may conceive expedient, if the encouragement they receive should seem to warrant the immediate adoption of practical measures." He believed that, if they should pursue some such course as was here imperfectly pointed out, they would be successful; but if they should confine themselves to their present limited views he feared for the result. However, though he had offered these resolutions, he would willingly concur in any other for the same object which the committee should propose.

SIR JOHN REA REID, Bart., M.P., felt happy in seconding these resolutions, which were put and carried.

CAPTAIN SAUMAREZ, R.N., in the course of an able address, called attention to the number of seamen annually wrecked on our coasts. By the books at Lloyd's, it appeared that the number of vessels wrecked every year was 600, which, allowing ten men to each vessel, gave 6,000 seamen thrown destitute on our shores, without food, clothes, or even a right to the wages they had earned; as by the law, the sailors lost all claim to wages if the vessel happened to be wrecked. He recommended the establishment of a registrar office, and of a savings' bank in connexion with the asylum. He would advise the committee to invite two members of the Trinity House, two from Lloyd's, and two from all the leading corporations, to join the institution. If they did so, he had no doubt that they would succeed.

Lieut. Lean, R.N., moved "a vote of thanks in an appropriate address, to the managing committee, for their philanthropic and voluntary service for the past year, and that they be re-elected."

The gallant officer remarked, that they had heard it stated the many thousands who were annually wrecked: out of those, vast numbers were cast on a foreign coast, and clothed, fed, and provided with a passage home, at the expense of the British government. But for the condition of those wrecked on our own shores, he could only refer them to the reports of the provincial and metropolitan police-offices, which will prove the necessity of supporting an establishment of this nature:—

Mr. Young then proposed that the following gentlemen be added to the committee.

Sir John R. Ried, Bart.

Geo. Palmer, Esq., M.P.

Capt. Saumerez, R.N., K.L.

G. F. Young, Esq.

Henry Blanchard, Esq.

Joseph Somes, Esq.

J. W. Buckle, Esq.

Thos. B. Oldfield, Esq.

William Tindle, Esq.

He had been authorized to propose those gentlemen as members of the committee, who would give it their utmost support.

Lieut. J. B. Connolly, R.N., in seconding the motion, observed, that there was a very important feature in the management of this asylum different to other institutions: he would simply quote the honorary secretary's words, which are extremely plain and candid: "To invite candid and impartial inquiry is, and ever has been, the desire of the committee elected by the friends and supporters themselves at their annual meetings. Participating in all their wishes for the progress and success of the institution, the members of the committee had no isolated, no individual feeling: the welfare of the seamen is the constant undivided object of their exertions, and they will esteem those exertions amply compensated by the confidence and support of their subscribers, and by the institution reaching that pre-eminence in the rank of public institutions and extended sphere of usefulness, to which it is so fully entitled. But objects of this importance are not of hasty attainment; they must be the result of *matured plans*, of well tried *experience*, of *much labour*, *zeal*, *energy*, *judgment*, and *perseverance* on the one part: and sustained by confidence, liberality, public spirit, forbearance, and sacrifice of some personal feelings on the other."

The resolution having been unanimously carried,—

The Chairman was persuaded the resolution they had just adopted, would ultimately lead to very beneficial results. He was as anxious as the honourable gentleman could be, to see religious education extended among seamen; though, what a man's religious faith might be, it never had been his habit to enquire, he thought every man's conscience was his best monitor on that subject:—one thing, however, must be recollected, as regarded this institution; when a shipwrecked seaman in distress and destitution, (such as had well been described by an honourable friend of his,) came to the society to seek relief, they did not stop to enquire what had been his previous conduct in life; the first object was to relieve him, and restore him to such a state of health, as would qualify him again to resume his professional avocations. With respect to the general moral improvement of seamen, and the means of raising a fund sufficient to carry that object into effect, he believed such funds already existed. It was but lately that a member of the House of Commons had moved for a return of

seamen's dues, which had become payable within a certain time, in one single port. The amount was considerable: but this fund existed in every port, and the whole sum collected under that item must be very large; but would the meeting believe that no account was to be found of its appropriation in many cases? He thought if a government commission was appointed to superintend this fund and its appropriation, great benefit would result to poor seamen from the labours of such a commission. With respect to the resolution which had just been adopted, he trusted its effects would prove beneficial ultimately to the institution; but in the mean time the committee must not shut up shop; they must go on till a new one was appointed, and, therefore, he must call on the meeting to supply the necessary funds. The committee had prepared several resolutions, having that object in view, but in his opinion the resolution just adopted had superseded them all, and the object now was to supply the means of affording temporary relief in such cases as might arise, until a new and more efficient plan could be brought into action. He could not too highly praise the exertions of the Honourable Secretary, and Mr. Baker, who worked from morning till night to promote the objects in view.

Mr. Young rose, and said, that he had prepared an amendment to meet the gallant chairman's views. It was—"That until some more extensive mode of relief be adopted, every effort should be used to procure sufficient funds to enable the Committee of Management of the Shipwrecked and Distressed Seaman's Institution to continue their exertions as heretofore."

The resolution having been carried, Sir John Rae Reid, Bart., M.P. proposed "a vote of thanks to Sir Edward Codrington, for his conduct in the chair, and for his exertions both in and out of the House of Commons, in promotion of the interests of British seamen.

O. P. Holmes, Esq., having seconded the resolution, which was carried unanimously.

The Chairman returned thanks, and observed, that though he had met many seamen of reckless dissolute character, who were to be constrained only by fear of punishment, the majority of British seamen were, to his knowledge, men of high sense of honour, strict truth and justice, and of unbounded generosity. It was because he knew their value, that he was disposed to advocate their interests.

The meeting then separated.

NAVAL DISCIPLINE.—Mr. Editor, The article on the "Meeting of the Mates of H.M. Squadron at Portsmouth," which appeared in the *Nautical Magazine* of this month, having struck me as a new feature in the service, naturally suggests a few observations, which, I think, must force themselves upon the mind of every one conversant with naval discipline. Should you consider these remarks worthy a place in your valuable publication, I beg to assure you I have no other end in view than the good of the service, and to point out, how dangerously it would be affected, if upon a supposed grievance, any body of officers, commissioned or petty, should call a meeting, and draw up resolutions to "mark their surprise and regret at the conduct of a commanding officer.

Though the object of the mates in making their request to Colonel Lewis, to allow the band of the marines to attend the funeral of their departed friend and messmate, was laudable, and highly honourable to their feelings on the melancholy occasion, still, upon cool reflection, they were either bound to consider the answer of "*its making a bad precedent*" as satisfactory, or to have sought redress, if they thought it a point of service, through the proper channel of a court of enquiry. For any class of petty officers might afterwards constitute the same demand into a right, making *thereby a bad precedent*, and upon its refusal sit in judgment in like manner.

Whatever might have been the reason why the band was refused in this instance, one thing is quite evident, that no unkind or bad feeling was meant towards the navy on the part of Colonel Lewis, for it is acknowledged that it always attended the funerals of officers, (bearing a commission, I presume,) as in the case of Lieutenant Derriman.

The commanding officer is responsible alone to his superiors for his conduct, and very properly so, for who could be safe, if such meetings, as in the present instance, should grow up in the service to criticise and condemn him in the execution of what he deems his duty? It would strike at the root of all discipline and good order.

A FRIEND TO THE NAVY.

London, July 4th, 1838.

THE "GORGON" STEAM FRIGATE.

THE "Gorgon" is now the largest and most powerful steam-vessel belonging to our service. Her tonnage, according to the old mode of computation, being 1,150 tons.

The length on deck, 183 feet.

Breadth between the paddle-wheels, 37 ft. 6 ins.

Full breadth of deck, 45 feet.

This splendid vessel was built at Pembroke, from the designs of Sir William Symonds; and for her excellent properties as a steam-vessel of war, strength, symmetry, and durability, is unrivalled by any vessel whatever. She combines also the necessary qualities of a sailing-vessel with those of a steam-ship. The whole of the timbers, the planking, the beams, and the deck, are formed of East India teak; the sleepers for the engines, and the main beams, are of very hard, durable, African oak; the whole secured in the most ample and complete manner by a profusion of copper-bolts, and stout iron knees and riders.

The partitions and doors of the cabins are composed of South American cedar, taken from the hull of the "Gibraltar," a Spanish man-of-war, of eighty guns.

The "Gorgon" will be fitted with sixteen 32 pounders, (long guns,) of which twelve will be on the gun-deck, and four on the upper-deck. She will also be provided with two of those newly-invented tremendous engines of war, the ten inch-guns, intended to discharge hollow shot of 96lbs. weight; one of these guns will be placed forward, and the other aft, on the upper-deck, on sliding swivel-beds, which will range entirely round the horizon. The bulwarks are so constructed that they can be thrown down in a moment to admit the guns being pointed in any direction.

The gun-deck of the "Gorgon" is fitted up in the most commodious manner for the accommodation of the officers and crew, amounting altogether, with the engineers, in war time, to 190 men. The orlop-deck, fore and aft, is appropriated entirely for the reception of troops with their stores and baggage; and the ample hold will receive abundance of water, provisions, and stores, for a long voyage.

The steam-engines for propelling, are of 320 horses power, (two engines each of 160 horses power); made by Messrs. John Seaward and Co., of the canal iron works, Limehouse, and are upon a very novel construction; being remarkable for their compactness, strength, and lightness. They have none of the usual cast-iron framing, sway-beams, side-rods, or cross-heads; but the line of shafts being placed directly over the centre-line of the cylinders, the rod of the piston is connected direct with the crank by means of a connecting rod of moderate length, without the intervention of any other part or piece of machinery. The piston rod is preserved in its vertical position by a strong parallel motion of peculiar construction, which serves, at the same time, to work the air-pump, as also the feed and bilge pumps. The main carriages which carry the line of shafts, are supported by eight bright wrought-iron columns of seven inches diameter, which rest immediately upon the tops of the cylinders, so that the whole strain and force of the engines is confined entirely between the cylinders and the main carriages; and no strain or force of the machinery is thrown upon any part of the vessel. Each engine is supported upon a very strong foundation plate, which, with the condenser and lower part of the hot-well, is cast all in one piece, and weighs about ten tons. The space occupied by these engines is remarkably small, being little more than half what is required for engines of the same power made upon the ordinary plan with sway beams. There are four copper boilers for supplying steam to these engines; they are quite detached from each other, and can be used separately, or in conjunction, as may be required; this is an important convenience, as it admits of repairs being made to one or two boilers while the others are in use. The boilers stand in pairs, side by side, and back to back; so that two of the boilers stand with their fronts towards the engines and the bow of the ship, and the other two with their fronts towards the stern of the vessel. There are twelve fire-places, and two stoke-holes, one in front of the boilers, and one abaft. The two stoke-holes communicate by passages going all round, and over the boilers; by means of which, a free circulation of air is kept up throughout the engine-room.

On each side of the engines and boilers are ranged the coal-boxes, which reach on each side of the vessel from the after bulk-head to the fore bulk-head; the boxes average about eight feet wide on each side, and afford ample stowage for 400 tons of coals, being adequate to sixteen days' consumption of the engines; so that the engines and boilers stand between two solid beds of coals, eight feet thick. No shot could pass through such a thickness of coal, and do any material injury to the machinery. Moreover, the more vulnerable parts of the engines, as well as the boilers, are below the water line, and quite out of the reach of shot.

The diameter of cylinder	is 64 inches
The length of stroke	is 5½ feet
The diameter of paddle-wheel	is 27 feet

The length of engine-room, from the }
fore bulk-head to the after bulk-head } is 62 feet

These engines were made, completed, and fixed on board the vessel, in little more than eight months from the receipt of the order; they were set to work for the first time on Thursday, the 13th day of June, 1838, and acted in the most efficient and satisfactory manner.

On Monday, July 2nd, an experimental cruise down the river to Gravesend and back, was made by this vessel, with a number of naval and scientific gentlemen on board, among whom were the Earl of Minto, the First Lord of the Admiralty, Sir Charles Adam, Sir William Parker, Mr. Charles Wood, M. P., Secretary of the Admiralty, Sir William Symonds, Surveyor of the Navy, Sir E. Parry, Comptroller of Steam-boats, Captains Austin, Henderson, Daws, Symonds, Captain Loch, Chairman of the Committee of Steam Navigation of the East India House, Captain Hayman, Trinity House, Mr. Ewart, and Mr. Kingston, the Admiralty Engineers, and others. The vessel proceeded down the river in gallant style; and notwithstanding her immense bulk, and her draught of water, thirteen feet forward, and fourteen feet six inches abaft, she soon obtained a velocity through the water of $11\frac{1}{2}$ miles per hour; the engines making $19\frac{1}{2}$ strokes per minute; and with this great speed there was no sensible vibration on board. A tumbler of water, placed on the taffrail, as well as one at the paddle beam, directly over the engine, remained undisturbed; it was remarked by all on board that the motion of the vessel was that of ship under sail, no effect of the immense power that was propelling her forward being perceptible, except the velocity with which she went through the water.

This freedom from vibration or concussion may be attributed to two important causes; first, to the judicious and excellent plan adopted by the surveyor of the navy in the construction, by which the vessel may be said to be from stem to stern, like one solid piece of timber, so admirably is she fasted and secured; and, secondly, to the important improvement adopted in the engines, whereby a mass of moving material, of forty-five tons weight is dispensed with, and the energy of the piston is at once carried to the paddle-shafts, and the whole force of action and reaction confined within the base of the cylinder upon which the engine stands.

The "Gorgon" proceeded at once to the Mile Ground, as it is termed, in Long Reach; when, after four trials, two with the tide, and two against it, the average was found to be as above stated—eleven and a quarter miles per hour, through still water. Their Lordships then proceeded to Gravesend, where they had ample opportunity of witnessing the ease with which the vessel was worked; her steerage was excellent, one man at the wheel being found sufficient for all ordinary purposes. She was turned round repeatedly in the river, in about four times her own length, occupying in the evolution from two and a quarter to two and a half minutes. On her voyage down she easily passed all competitors, except the Gravesend clippers, and on her return from Long Reach, she overtook the "Albion," river steamer, and in a run of one hour and a quarter, passed her, and gained two miles upon her between Gravesend and Woolwich, where she finally arrived at five o'clock.

The consumption of fuel, ascertained by weighing, was one ton of Welsh coals per hour, equal to seven lbs. per horse per hour, at

full speed; of course, when under canvas, or when going slow with head-winds, the consumption will be considerably less. The coal boxes, holding four hundred tons of coals, in the engine-room, will be sufficient for seventeen days' consumption, at full speed; ten days more coal may occasionally be stowed in the fore and after hold, making, in the whole, fuel for twenty-seven days; this, at an average speed of nine miles, will carry a distance of 5,800 miles by steam alone.

As this steam frigate will carry, besides the crew, 1,000 troops, with stores and provisions for two months, it is evident that a regiment might be transported, to any of the ports of the Mediterranean, Baltic, St. Petersburg, or West Indies, at once, without waiting for wind, or stopping for fuel.

On the 6th July, the "Gorgon" proceeded to Sheerness; she started from Woolwich, with the flood-tide, and performed the distance to Gravesend in one hour and forty minutes, and from thence to the Nore light in two hours, making the whole distance from Woolwich to the Nore light, about fifty miles, in three hours and forty minutes. She ran the mile in Long Reach, against the flood-tide, in six minutes, and fifteen seconds, equal to twelve miles per hour. The "Gorgon," is fitted with the stop-wheel, very narrow, and of large diameter, compared with the stroke; the outside diameter to the edge of the paddle being twenty-seven feet, each arm has three floats, one ten, and two nine inches wide, and 7.5 feet long. When the wheel dips five feet, the ship must roll to an angle of 40° from a perpendicular, to bring one wheel out of the water.

Commander Dacres, and the crew of the Salamander, have been turned over to this vessel; she is now fitting for sea at Sheerness, and is expected to go down the channel in three weeks.

Royal Prussian General Consulate,
106, Fenchurch-street, 13th June, 1838.

SIR,—I beg leave to transmit to you the enclosed copy of a notice issued by his Prussian Majesty's government at Coslin, concerning a new light which has been erected between Rugenwalde and Stolpmund on the Baltic sea; and I shall feel obliged by your giving publicity thereto, for the benefit of British shipmasters navigating the Baltic.

I have the honour to be, Sir, Your most obedient servant,
B. HEBELER, Prussian Consul-General.

NEW LIGHTS IN THE BALTIC.—Between Rugenwalde and Stolpmunde, on the shore of the Baltic, sea, near the village of Jershöft, is a ridge lying east and west, and sloping suddenly towards the sea, which in Gustav-Klindt's chart, used by Baltic navigators, is improperly designated by the name of Rober Hooft.

A lighthouse, built of stone, with a circular base and iron lantern, has been erected at the eastern end of this ridge, at the back of the village, distant from the sea, at the nearest point, 102 Ruthen six feet, (422.2 English yards,) situated in the lat. 54° 33' north, and in long. 16° 36' east of Greenwich, 2½' south, and 19' long., west of Stolpmunde; 6½' north, and 8' east of Rugenwalde.

The light which, from the 1st July, will burn every night throughout the year, from sunset till sunrise, is a plain light, formed by fifteen parabolic reflectors, of twenty inches diameter, and nine inches in

depth, which are so fixed in an upright axis in three clusters of five each, that on each revolution of the axis, there is an alternation of light and darkness in the proportion of seven to five.

The intensity of the light will only be complete to the observer, at the moment the extended axis of the parabolic reflector becomes visible.

The motion of the machine is so regulated as to perform an entire revolution once every six minutes. The light will, therefore, be visible to mariners from the sea in every direction during about seventy seconds, and invisible for fifty seconds.

By these intervals, and more especially by its revolving entirely every six minutes, and the alternation of light and darkness, three times this light will be distinguished by mariners from the nearest lights to the eastward and westward at Rixhöft and Arcono, and also from the revolving light to the eastward at Hela, where the duration of light and darkness is equal.

The eminence on which the light is erected is seventy-two feet from the surface of the sea; from the foot of the building to the centre of the highest reflector is ninety-three English feet, therefore the light will burn at a total height of 165 feet above the level of the sea.

At this height the light can be seen from the sea everywhere within the bearings from the lighthouse of E.N.E. and S.W., from the deck of a ship, at a distance of sixteen miles. But the bay in which the harbour of Stolpmunde lies is hidden by the high Downs at the Viezieger Lake, so that there the light can be seen no nearer than from the harbour roads.

Coslin, 26th April, 1838,
Royal Government, Home Department.

HARBOUR OF TADOUSAC.—ST. LAWRENCE.

MR. EDITOR.—As the recent erection of sawmills on the banks of the Saguenay, seems likely once more to make Tadousac a busy trading port, a part of the French population from Mal Baie having also removed there, the accompanying instructions and hints for making that place, may be worthy of your next number.

You are so ready at all times to assist the interests of navigation and commerce, that I make no apology for requesting this insertion; one of the papers is from the pen of that indefatigable and valuable officer, Captain Bayfield, R.N., whose labours cannot be too highly appreciated by shipowners and masters in the merchant service.

I am, Sir, your obliged, NATHANIEL GOULD.

16th July, 1838.

TADOUSAC AND THE SAGUENAY.—Tadousac, at the mouth of the Saguenay river, is a small harbour. having space for about half a dozen ships, or more, in case of need, to moor conveniently. The holding ground is good, bottom being of clay. It is sheltered so that there is never any swell in it that would in the least degree endanger a vessel. The space to anchor in, is about one-third of a mile in length, and a quarter of a mile wide; the depth of water from eight to sixteen fathoms at low water. There is scarcely any stream of tide at the anchorage, although a very strong ebb outside.

There are good leading marks to enter the Saguenay. The entrance is about a mile wide between shoals which lie off each point, so that there is plenty of room, and although the tides are strong, there is

neither danger nor difficulty with a good pilot, or a good chart, a leading wind, and fine weather.

Vessels arriving in the St. Lawrence in thick weather, bound for the Saguenay, I would recommend to drop anchor at the Brandy Pots, or on the south shore, until the weather becomes favourable, and then, by the use of the lead, and attention to the soundings laid down in my charts, and to the leading marks, there is no difficulty whatever in entering.

There are also good anchorages higher up the river at the Ance St. Etienne, ten miles above Tadousac, at St. Louis island, fifteen miles above Tadousac, and two miles above St. Marguerite, at the Ance St. Jean, twenty-two miles above Tadousac, and at the Baie L'Eternette, twenty-eight miles above Tadousac, at all of which places vessels might lie well to load. There is very deep water (too deep for anchoring) everywhere, except at these anchorages; the shores are bold, rocky, and high, and there are no shoals.

The ebb-tide is very strong, but there is very little stream of flood much above Tadousac, so that vessels can only ascend the river with a fair wind. It is navigable for the largest ships fifty-two miles above Tadousac, and for smaller vessels about five leagues higher.

HENRY WM. BAYFIELD,

Captain, R.N., surveying the gulf and river St. Lawrence.

Quebec, 15th May, 1838.

Mr. Joseph Hovington, a native of Durham, in England, master mariner, and master of the schooner "Tadousac," belonging to the Hon. Hudson Bay Company, trading between the Saguenay and Quebec, and the north shore to Esquimaux, says, that there is no difficulty whatever in entering the river Saguenay with a leading wind. The wind from any point from the south-west round southerly to the north-east, is a leading wind to enter the Saguenay, and to proceed up as high as the anchorage of St. Louis, fifteen miles up; after that, southerly to north-easterly are leading winds.

North and north-westerly winds draw out of the river; in summer months west winds draw in, from the temperature outside in the St. Lawrence being warmer than in the Saguenay; but in the spring and fall it is not so.

Tadousac is a good harbour for shelter and anchorage; if more than three ships should be there, I recommend them to moor head and stern.

The anchorages higher up the river Saguenay,—St. Etienne, ten miles, St. Louis, fifteen miles, Ance St. Jean, twenty-two miles, Bay L'Eternette, twenty-eight miles,—are safe, good, and convenient; but to get to them, must not be attempted without a leading wind.

Southerly to north-east, or south-west, is leading as far as St. Louis.

St. Marguerite is about two miles below St. Louis, on the opposite side of the river; the anchorage there is not good for large vessels, the ground being too steep. Anchor there, but very close in-shore.

At St. Louis, the anchorage is at the north-east end of the large island, and forms a very good harbour and shelter from north-west winds. Easterly winds blow up, but never any sea.

The leading marks are good to enter the Saguenay: on getting a full view of the Bull, ships may run boldly in. The Bull is a round mountain on the north side of the Saguenay, about three miles up;

and by keeping the Bull open from the points, there is no danger in running in; and when abreast of the port or houses at Tadousac, they may run up, on whichever side they think they may have most advantage, but with ebb-tide there is less current on the north-east side of the river.

The entrance between the two shoals is one and a quarter mile wide. I recommend that ships arriving for the Saguenay, should keep the north shore, above Portneuf up to Point Bon desir. There is good anchorage all along, from Point Bon desir to the Saguenay.

Edward Verrault, a half-Indian, at Tadousac, is a good pilot for the Saguenay river.

The ships can load conveniently at the anchorages up the river.

There is a good anchorage at Mull a Boce, in five and sixteen fathoms water, three miles below the Saguenay.

I recommend vessels to keep the north shore, above Portneuf up to Bonaca. There is good anchorage all along the north shore, from Bonaca to the Saguenay.

Captain Pine, many years master of a schooner, trading along that coast, says:—"There is no difficulty or trouble in getting into Tadousac, or running up the river, which, if the wind answers, ships should do, for the convenience of loading at the mills, which are nine miles and fifteen miles up where the harbours are good.

Captains should keep the north shore from about Port Neuf, and have Captain Bayfield's admirable chart before them. A man-of-war may sail up fifty miles above Tadousac. It is intended to have a pilot stationed at Point Bon Desir, eighteen miles below the Saguenay."

LITERATURE.—The second volume of "Papers on Subjects connected with the Duties of the Corps of Royal Engineers,"* has just been presented us. It contains many important professional papers, illustrated by numerous plates, among which we may instance a paper on contoured plans, by Lieut. Harness, R.E., which might be turned to account by the nautical surveyor; and another on hurricanes, by Lieutenant-Colonel Reid, R.E., which should assuredly be studied by every seaman who is (or should be, if he is not) desirous of acquiring all the knowledge which has of late been gained respecting these dangerous phenomena. The papers generally are most interesting, and we cannot too highly commend either the project itself, or the mode in which it is carried into effect, of a body of scientific officers, thus contributing the results of their useful and valuable observations connected with professional subjects to one common stock, attainable in the shape of an annual volume: an example, we may add, worthy of imitation in the navy.

ADELE, a Tale of France.—In our notice of this little volume in our last Number, the name of "Maria Antoinette" was unaccountably substituted for that of "Adele," by which an improper idea of the intentions of the authoress was given. It affords us, however, another opportunity of recommending the work, both as interesting and instructive in history.

HURRICANES.—We understand that a work on the subject of hurricanes, from the pen of Colonel Reid, of the Engineers, is in the press, and will shortly be published. We shall not fail to announce its appearance.

* Sold by Weal, 59, High Holborn.

Law Proceedings.

WILLIAM.*—Brig.—Ritson v. Craig.—Plaintiff, owner of the *William*, to recover compensation from the defendants, *Craig* and others, proprietors of the *Adelaide* steamer, in consequence of having run her down, and occasioned her loss in the Thames. On the 2nd May, *William* arrived with coals off *Tilbury Fort*, about ten at night, and anchored in the fair way, about one-third of a mile from from north shore. About three in the morning, the *Adelaide*, in going down the river, run foul of her, and she filled and sunk immediately. Steamer had lights, the *William* none; a fleet of colliers about her. Contended, for the steamer, that there was no negligence; that the fault lay with the brig in not having a light. The Judge and the Harbour-master considered she ought to have had a light; and the latter thought she was lying in an improper position, being in the fair way; he added, the colliers are in the habit of lying in all parts of the river, and are as difficult to manage as a parcel of children. The jury gave a verdict for the plaintiff, and the damages were agreed to be settled out of court.

COLUMBIA.—Salvage.—Suit by owners, captain, and crew of a Dutch ship, the *Phenome*, Captain *F. P. Hoed*, for services rendered to British ship *Columbia*, in January, 1837. *Columbia* sailed from *Bombay* on 17th September last, for *Liverpool*; cargo cotton, &c. and specie. Met with severe weather before reaching *Mauritius*, and afterwards encountered heavy gales, with rudder carried away in the Atlantic; lay in a disabled state at mercy of the sea, without hopes of being saved. On the evening of the 26th January, signals of distress were made to a sail in sight, without effect; next morning she was not seen. Soon afterwards, another sail hove in sight, and attempts were made to attract her attention, and get into her track. Signals seen and answered by stranger, which proved to be the *Phenome*; she joined her by the evening, and the *Columbia* was assured that she would stay by her, and relieve her, next day. On the following morning, the *Phenome* took on board passengers and crew, many being sick, and saved besides 11,300*l.* specie, by so doing, disabled four of her men; the *Columbia*, with the rest of her cargo, was then lost. The Dutch ship landed the people saved from the *Columbia*, with the specie, at *Plymouth*, on 13th February, and proceeded on her voyage to *Rotterdam*. Sir *John Nichol* looked on this as a very important question. The Dutchman had suffered much from bad weather, but had rescued the persons and property of the *Columbia* from a most hopeless condition. True Samaritan aid had been rendered by Captain *Hoed*, as he did not, as the other vessel had done, "pass away on the other side." The merit was also enhanced by her being a foreign vessel. He must consider the *Columbia* a derelict. Her crew had determined to abandon her, so that the lives on board, and the specie, must have been lost. He therefore directed that the actual value of the specie saved should be ascertained; the expenses of the suit to be paid out of it; and that from the residue a moiety should be given to the salvors. Having been asked to allot the award, he should follow Lord *Stowell's* rule, in the case of the *Waterloo*, and direct one-half the moiety to be paid to the owners of the *Phenome*; one quarter to her captain, and the rest to her crew, to be distributed according to the wages which they received.

THE ALARM.—Wages.—The master of a *Limerick* trader had deducted a month's pay from four seamen for leaving the ship without leave or discharge. Captain stated had arrived on a Sunday afternoon; not wishing men to work on the Sabbath in the river, after the ship was moored, gave his crew a glass of grog each; men went ashore; he expected their return on the following day; they did not, and he told them he should fine them a month's pay for desertion; he had suffered much inconvenience, was obliged to hire other men at four shillings a day, and to employ a steamer to take his vessel from the wharf into the river. The crew considered their services at an end when the ship was moored. Mr. *Ballantine* decided they were wrong; that they should have staid by the ship till the cargo was discharged. It was stated that one man who had left the ship was paid, but the magistrate could not, on that account, order the wages, much to the discomfiture of the men, who are not aware of the Act of Parliament requiring them to remain until the cargo is discharged, and who are naturally anxious, on the conclusion of a voyage, to return to their families.

* The same which was blown up lately.

WRECKS OF BRITISH SHIPPING—CONTINUED FROM THE SHIPPING GAZETTE.

[Continued from page 356.]

VESSELS' NAMES,	WHERE BELONGING	MASTERS' NAMES.	WHERE FROM.	WHERE TO	WHERE WRECKED.	WHEN	PARTICULARS
215 Agnes	Whitehaven	Maxwell		Granville	Blainville	18 April	Crew saved
Ann Williams		Quick	Newport	Dodrecht	Banard	30 April	Crew saved.
Athabaska	Whitby	Nesfield	Liverpool	Quebec	W. Hoyle	17 April	18 drowned
Aurora	Montrose	Gove	Newcastle	Dublin	Montrose	18 April	Crew saved.
Belay Castle		Robson			Tees Est.	April	Six drowned.
220 Black Dwarf					Solway		
Britannia	Halifax	McFarlane	(not heard)	of since	Christmas I.	10 Dec.	
Briton	London	Benson			Fallen in with	23 Jan.	Crew saved.
Brothers	Whitehaven		Liverpool	abandoned	at sea	1 Feb.	Crew saved.
Byron	Belfast	Forrest	St. John NB	part of wrck	at Ilfrcombe	26 April	
225 Catherine	Limerick	McKenzie	England	at Ilfrcombe	Calros Passage	29 July	
Celina	Bristol	Chambord	Hayti	Newfoundland	by fire	18 April	Crew saved.
Charles		Hutchings	London		Hambourg	May	
Colcoe	Sunderland	Foster	abandoned,	passed by	Off Banks	19 April	Crew saved..
230 Cordelia	dismasted & S. Shields	Dumble	Newcastle	Glegarry	48° N. 8 1/2 W.	10 April	
Dar. Maurice			Jamaica	London	Castle Island	10 April	
Diamond		Davies	Seaham	London	Cross Sand	1 April	Crew saved.
Diana	Bristol	Thomas	Coal laden	Lancaster	Barnard S.	April	Crew drownd.
Elizabeth	Hollywood	Hollywood	Newry	London, not	Near Madras	9 Jan.	
235 Elizabeth	Anderson	Anderson	St. Stephens	Liverpool, Newcastle	heard of since at sea	7 Feb.	
Eliza Caroline			Newcastle	Rouen	Calais	20 May	13 drowned.
Felix							Crew saved.
Glenstances							
240 Gladista		Watkins	London	C. Good Hp.	Brest	17 April	Crew saved.
Harriet	(whaler with 300 barrels	Maughan	of oil)	destroyed by	Feejee Islands	16 July	Crew saved.
James Colvin				fire at sea	Ballyshannon	3 April	Crew saved.
Jane and Thomas	Sunderland		Liverpool		Dowring Bay	19 May	Escaped.
John Cook, sch.					Rhyope	Dec.	
John Dougan			Newcastle	Gibraltar, not	heard of since	Feb.	
245 Keith Stewart	Garlieston	Bremner	Kilrass	Campblton	not hrd. of since	29 April	Crew saved.
Kent		Irvine	Troon	Bathurst	St. Andrew	3 Dec.	Crew saved.
Lady of the Isles		Tregarthen	London	Hilboa		1 April	
Lynx	St. John NB		(Fallen in	N. Zealand	46° N. 11° W.	12 May	by ice.
250 Majestic	Simpson		with aband.	Dundee	Riga	8 April	
Margret, sch.	Dundee	Ilhge			Berwick Bay	9 Jan.	
Margaret Richardson		Reed	London	Genoa	Abandoned	24 Mar.	Crew saved.
Mary	Sunderland	Swan	St. Domingo	Cork	St. Doming	18 April	Crew saved.
255 Mary	Exmouth	Brown	Stockton	Exmouth	Gore Sand	19 April	Crew saved.
Mary Ann, sch.			Shields		Habro's S.	23 Mar.	
Mary Catherine		Powdrell	Cumming	Table Bay	Alexandria		
Merida		Cumming		Algoa Bay	Algoa Bay		
Mersey				Liverpool	at sea	21 April	Crew saved.
Monmouth	Whitehaven	Harrison	Whitehaven	Dublin	collision at sea	12 May	
260 Mungo	St. John	(Fallen in	with aband.	Yarmouth	42° N. 62° W.	3 April	
Nancy	Yarmouth	Cross	Sunderland	Yarmouth	Off Winterton	17 April	Two drowned.
Nepheus	London	Grant			St. Ives	16 April	Crew drowned
Resolution			Demerara	Halifax	Strag Harbour	9 April	
265 St. Patrick	Sunderland	Harbottle	Sunderland	Africa	Sierra Leone	22 Mar.	
Sarah		McGrath	Waterford	Newfoundland	48° N., 49° W., [abandoned]	April	Crew saved.
Scotia	Bo'ness	Cothay	Liverpool	Demerara	Beaumaris		
268 Susan	St. And. NB	Sinclair & 6	men saved	from water-	logged by	March	
Susan and Ann	Ipswich	Barnes	London	Quebec	brig, J. Lawson	April	Crew saved.
Toward Castle	Hull	Emmens	Hull	S. Seas	Juland	7 Dec.	Crew saved.
270 Wrenn	Dram	Keighley	Dram	Quebec	California	18 April	
Wrenn		Lec	Inverness	Sunderland	Aran Bay	26 April	Crew saved.
William and Ann				Hull	Blythe Scargill	8 April	Crew saved.

PROMOTIONS AND APPOINTMENTS.

The following Promotions were made on the occasion of the late Coronation:—

Vice-Admirals of the Blue,—J. E. Douglas, Esq., Sir Ross Donelly, K.C.B., Sir John Poo Beresford.

Vice-Admirals of the Red,—J. West, Esq., Stephen Poyntz, Esq., Right Hon. John Lord Colville, John Cocket, Esq.

Vice-Admirals of the White,—Sir H. Heathcote, Sir E. W. C. R. Owen, K.C.B., G. C. H., Sir George Scott, K.C.B., Sir T. Dundas, K.C.B., Sir J. F. Rodd, K.C.B.

Rear-Admirals of the Blue,—Sir T. Livingstone, Bart., Sir E. Brace, K.C.B., Sir T. W. Austen, K.C.B., Sir P. Campbell, K.C.B.

Rear-Admirals of the Red,—Sir T. Briggs, G.C., S.M., & G., Right Hon. T. Earl of Dundonald, Sir W. Parker, K.C.B., Sir. R. T. Ricketts, Bart., G. M'Kinley, Esq., Sir C. Dashwood.

Rear-Admirals of the White.—S. C. Rowley, Esq., T. Brown, Esq., S. Pym, C.B., R. Jackson, Esq., Sir R. Barrie, Knt. C.B. K.C.H., C. B. H. Ross, Esq., C.B., Sir C. Malcolm, Knt. T. W. Fane, Esq., Honourable G. Elliott, C.B., J. Hillyar, Esq., C.B. K.H.C.

Rear-Admirals of the Blue.—J. R. Dacres, Esq., J. Sykes, Esq., J. Hancock, Esq., C.B., Hon. D. H. Mackay, T. Mason, Esq., C.B., T. Brown, Esq. A. Shippard, Esq., R. Henderson, Esq., Sir Lucius Curtis, Bt., C.B., Sir John Louis Bart, B. Hodgson, Esq., H. H. Christian, Esq.

The following Captains of the Navy have been placed on the list of retired Rear-Admirals:—

John Surman Carden, J. Wentworth Holland, John Impey, Henry Munston Osmaney, Archibald Duff, Honourable M. J. Henniker; and, as Sir Jahleel Brenton, Bart., retains his situation of Lieutenant-Governor of Greenwich Hospital, he foregoes his promotion to the rank of Vice-Admiral, and will continue at the head of the Rear-Admiral's list.

CAPTAINS.—Richard Devonshire, Richard Copeland, Charles Rich, John Robertson (a), Robert Deans, W. Richardson (a) George Charles Blake, Mark H. Sweny, William P. Stanley, William Holt, William H. Pierson, John Jervis Tucker, John Kingcombe, Brunswick Popham, William Oldrey, Thomas Ogle, George Evans, William John Cole, K.H., Richard Keane, John Hackett, William Picking, J. J. T. Newell, John Forster, J. Parker, George Daniell, Frederick Bullock, Russell Elliott, Alfred Luckraft, John E. Erskine, J. Hope, George A. Sainthill, T. P. Blackwood, Horatio Thomas Austin, William Ramsay, Edward Stanley.

COMMANDERS.—G. G. Miall, Joseph Roche, Edmund Norcott, Henry Church, William Hubbard (a), Henry Stroud, Henry D. Taysden, H. V. Huntley, Henry Frederick Peake, C. J. F. Newton, Frederick Wood, Francis Grove, James Hamilton Ward, Lewis Tobin Jones, Edward St. Leger Cannon, John M'Donnell, William Dickey, Charles Wilson Riley, Francis Liardet, John Hathorn, William M'Ilwaine, Ralph Barton, Richard Burr ridge, William Griffin, Frederick Hutton, Bird Allen, Frederick W. H. Glasse, Edward Barnett, John B. Woodthorpe, Charles G. Robinson, William C. Phillott, Sackett Hope, Richard Robinson, John V. Fletcher, James A. Legard, Thomas L. Massie, Woodford Williams, Robert Kerr, A. L. Montgomery, Samuel Mercer, William Louis, Richard Inman, Robert S. Robinson, H. R. Henry, Robert T. Stopford, Hon. H. A. Murray, J. H. Wyndham, Hon. S. T. Carnegie, Henry Bagot, C. G. E. Napier.

LIEUTENANTS.—Thomas S. Coppinger, James F. L. Wood, J. C. Robinson, J. F. S. Starke, Charles G. Philipps, Robert O'Brien, N. S. Knott, William Coles, James S. A. Dennis, John T. Guyon, N. Norway, Samuel Fowell, R. W. Suckling, J. B. Massie, William Morris, George W. Winlo, Henry H. Shute, John Compton, A. C. May, Michael de Courcy, Arthur M. Noad, William Frederick Fead, Richard A. Oliver, Zaccheus Andrew, Richard M. Robertson, John Alfred Paul, Edward James Bedford, Cæsar Cotterell Powell, C. F. Wade, Matthew Nolloth, Walter Need, B. H. Bunce, J. C. Coffin, Griffith G. Phillips, J. Ormond Freeland, Roger Curtis, Charles Grey Rigge, C. G. Crawley, William Cotterell Wood, H. E. B. Bennet, James Fellows, William Thorpe, James Henry Bridges, John Robert Crichton Helpman, Geo. Blane, E. B. P. Von Donop, William Clayton, H. A. Story, Charles T. Schomberg, Peter Fisher, Charles Barker, W. S. Wiseman, W. H. Church, C. F. A. Shadwell, J. C. S. Field, Charles James Balfour, Stephen Bradley, F. Denison, W. T. Burnett, F. E. Johnston.

PROMOTIONS.

CAPTAINS, W. H. Henderson, G. A. Elliott.

COMMANDERS.—F. Warden, Honourable G. F. Hastings, V. Anson, R. Tryon, G. E. Hamond, Hon. G. R. Drummond.

LIEUTENANTS.—G. Randolph, W. Hoste, E. Troubridge, W. H. Ainslie, A. Villiers.

SURGEONS.—T. Kidd, T. W. Jewell, H. Morris, H. Brown.

APPOINTMENTS.

ALBAN, St. V.,—*Second Master*, J. Baker; *Assistant-Surgeon*, N. P. Stoddart. ASIA, 84,—*Lieutenant*, R. A. Bradshaw. BELLEROPHON, 80,—*Com.*, W. Luckraft. BRITANNIA, 120,—*Surgeon*, S. Irvine; *Assistant-Surgeon*, H. Turnbull, M.D.; J. M'Leod, W. W. Baynes, E. Johnson; *Mate*, C. F. Doyle; *Clerks*, J. T. Hemer, A. Scott. COAST-GUARD,—*Com.*, E. Pilkington, Sheerness. CORNWALLIS, 74,—*Mate*, H. T. Veitch. COLUMBINE, 16,—*Midshipman*, C. H. Kay. EDINBURGH, 74,—*Mates*, E. Conrtenay, C. Sparshott. EXCELLENT.—*Lieutenants*, H. Estcourt, J. H. Bridges; *Mate*, E. Hampstead; *Midshipman*, G. Napier. FLY, 18,—*Commander*, G. G. Lock.

GREENWICH HOSPITAL,—*Assistant-Surgeon*, H. Baker. HASTINGS, *Lieutenant*, C. F. Schomberg; *Assistant Surgeons*, W. Martin, T. Gilbert; *Chaplain*, J. U. Campbell; *Mate*, A. Cumming. HERALD, 18,—*Second-Master*, T. Bowen; *Midshipmen*, S. T. Skirrow, H. Crofton; *Vol.*, S. Grey; *Clerk*, G. R. O. Maley. JASEUR, 16,—*Mates*, A. M'Nighton, H. Bailey; *Midshipman*, E. Webber; *Vol.*, A. E. G. Murray. MELVILLE, 74,—*Clerk*, H. S. Dyer. MINDEN, 74,—*Naval Instructor*, J. D. Kennedy. OCEAN, 80,—*Purser*, W. B. Basden. PRINCESS CHARLOTTE, 104,—*Lieutenant*, A Clifford. ROYAL ADELAIDE, 120,—*Assistant-Surgeons*, E. H. Derriman, W. M'Kinley, J. Peters. ROYAL GEORGE, *Yacht*,—*Lieutenant*, T. Bevan; *Mates*, W. J. Jamieson, H. Cordwell. ROYAL SOVEREIGN, *Yacht*,—*Second-Master*, R. W. Roberts. SAN JOSEF, *Captain*, J. N. Taylor, C. B. SERINGAPATAM, 46,—*Second-Master*, G. H. Loveridge. SAVAGE, 10,—*Lieutenant*, H. Lacom; *Mate*, H. B. Mottley. SEAFLOWER, *Cutter*,—*Lieutenant-Commander*, J. Robilliard, *Assistant-Surgeon*, J. Read. SERPENT, 16,—*Lieutenant*, T. Melriat; *Surgeon-Act.*, J. Lambert. TRIBUNE, 24,—*Mate*, J. A. Paynter. TYNE, 28,—*Lieutenant*, Lord H. Russell. YANGUARD, 80,—*Vol. 1st class*, C. B. Adam. WEAZLE, 10,—*Lieutenant-Commander*, J. Simpson (a). WELLESLEY, 74,—*Lieutenants*, P. Fisher, W. S. Wiseman.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ARROW, 10, 9th July, sailed from Falmouth for Brazils. ATHOLL, 28, Mr. A. Karley, 22nd June, at Portsmouth, from Quebec; 10th July, sailed for the coast of Spain. EDINBURGH, 74, Captain W. Henderson, 1st July, arrived at Portsmouth from Quebec. HASTINGS, 74, Captain Lock, 7th July, arrived at Portsmouth from Quebec. HERMES, St. V., Recommissioned by H. W. Blount. JUPITER, 38, R. Easto, 7th July, arrived at Plymouth from Halifax. LIGHTNING, St. V., *Lieutenant-Commander* J. Hambler, 17th July, at Portsmouth from Woolwich, with stores. MESSENGER, St. V., Mr. J. King, 17th June, arrived at Plymouth from Cork, 3rd July, sailed for Cork. MINDEN, 74, Captain A. B. Sharpe, 10th July, sailed from Plymouth for Lisbon and the Mediterranean. PARTRIDGE, 10, Tender, Lt., W. Morris, 25th June, arrived at Sheerness from Heligoland. PIQUE, 36, Captain E. Boxer, 16th July, arrived at Portsmouth from Quebec. RANGER, J. H. Turner, 17th June, sailed from Portsmouth for Falmouth. ROVER, 18, 1st July, arrived at Portsmouth from Rio; 2nd, sailed for Plymouth; 6th, arrived at Plymouth; 19th, paid off. SAVAGE, 10, *Lieut.* Hon. E. Curzon, 26th June, arrived at Plymouth from the North Coast of Spain; 29th, paid off; 30th, Recommissioned, by Lt. H. J. Lacom. TALBOT, 28, Captain H. J. Codrington, 17th June, sailed from Plymouth for Mediterranean. VOLCANO, St. V., *Lieutenant* West, 10th July, sailed from Portsmouth for Mediterranean. WATERWITCH, 80, *Commander* Dickey, (deceased,) 20th July, arrived at Portsmouth from Coast of Africa. WEAZLE, 10, *Commander* T. Simpson (c.) 17th July, sailed from Plymouth for Malta.

AT PORTSMOUTH.—*Harbour*.—*Britannia*, *Victory*, *Edinburgh*, *Hastings*, *Excellent*, *Royal George*, *Herald*, *Pantaloon*, *Seaflower*, *Apollo*. *At Spithead*, *Pigeon*.

AT PLYMOUTH.—*Harbour*.—*Royal Adelaide*, *San Josef*, *Jupiter*, *Nightingale*. *In Sound*, *Jaseur*, *Savage*.

ABROAD.

ALGERINE, 10, Lt. Thomas; 20th April, arrived at Madras; 23rd, sailed for Penang. ALLIGATOR, 28, 20th April at Rio de Janeiro; 17th May, at ditto. ANDROMACHE, 28, Captain L. Baynes, 6th June, arrived at Quebec; 26th, at ditto. ASIA, 84, Captain W. Fisher, 2nd July, arrived at Malta, from Salamis Bay. ATHOLL, 28, 20th May, sailed from Quebec. BARHAM, 50, Capt. A. L. Corry, 28th May, arrived at Naples. BELLEROPHON, 80, Capt. S. Jackson, 5th June, arrived at Malta; 14th, sailed for Athens. BONETTA, 3, 12th of April, Cape of Good Hope, from Ascension. BRITOMART, 10, 20th April, at Rio de Janeiro; 17th May, ditto. CALLIOPE, 28, 17th May at Rio Janeiro. CARYSFORT, 28, Capt. Sir B. Martin, 10th June, sailed from Malta for Naples. CEYLON, 2, 13th June, at Malta. CHARYBDIS, 3, Hon. *Lieutenant* Gore; 23rd May, arrived at Halifax; 4th June, sailed for Quebec; 16th, arrived; 18th, sailed for New Brunswick. COMET, St. V., *Lieutenant-commander* G. Gordon, 10th May, sailed from San Sebastian for England. COMUS, 18, Com. Hon. P. S. Carey, 2nd May, sailed from Jamaica for Havanna. CONFIANCE, 2, *Lieutenant* Stopford, 1st June, sailed for Naples from Malta; 16th, sailed from Malta

for Leghorn. **CORNWALLIS**, 74, Captain Sir R. Grant, 4th June, sailed from Halifax for Quebec; 7th, Gulf of St. Lawrence; 26th, at Quebec. **CROCODILE**, 28, Captain J. Polkinghorne, 10th April, left Bermuda; 20th, arrived at Halifax; 2nd June, off Sambre from Prince Edward's Island; 3rd, at Halifax; 8th, sailed for Sydney. **DEE**, St. V., Commauder Sherer, 23rd May, arrived at Halifax; 4th June, sailed for Quebec; 7th, Gulf of St. Lawrence; 26th, Quebec. **DIDO**, 18, Captain L. Davies, 8th June, at Smyrna; 15th, sailed for Beirut. **ECHO**, St. V., Lieutenant James, 12th May, Jamaica from Barbados. **EDINBURGH**, 74, Captain W. H. Henderson, 19th May, sailed from Quebec; 31st, returned to Quebec. **ELECTRA**, 18, 19th April, arrived at Rio Janeiro from Portsmouth; 17th May, at Rio. **FAVOURITE**, 18, 14th April, arrived at Madras; 5th May, at ditto. **FIREFLY**, St. V., Lieutenant J. Pearse, 5th July, at Gibraltar from Malta. **FORRESTER**, 3, 11th June, Bight of Benin. **HARLEQUIN**, 16, Com. J. E. Erskine, 26th May, sailed from Malta to Naples. **HASTINGS**, 74, Capt. H. Shiffner, 26 May, arr. at Quebec from England; 30th, sailed for England. **HERCULES**, 74, Captain J. T. Nicholas, 2nd June, off Metis; 8th Quebec; 10th, Coast of Newfoundland; 19th Quebec. **HYACINTH**, 18, Com. Warren, 18th April, Trincomalee; 23rd, Madras, **INCONSTANT**, 36, Captain D. Pring, 26th June, at Quebec. **JUPITER**, 38, 9th June, arrived at Halifax. **LARNE**, Com. P. Blake, 18th April, at Moulmien; 23rd, sailed from Madras for Penang. **MADAGASCAR**, 46, Captain Sir J. S. Peyton, 14th June, arrived at Quebec. **Magicienne**, 24th Captain Mildmay, 11th June, at Lisbon, from a cruise. **MALABAR**, 74, Captain Sir W. A. Montague, 26th May, Quebec. **MEDEA**, 4, St. V., 7th June, Gulf St. Lawrence, 19th, Quebec. **NIMROD**, 20, Com. I. Fraser, 16th May, Carthage; 20th, Port Royal; 22nd, sailed for Pedro shoals; 27th, returned to Port Royal. **PARTRIDGE**, 10, St. V., W. Morris, Com., 6th June, Heligoland. **PEARL**, 20, Captain, Ld. Clarence Paget, 16th May, at Port Royal, captured two Slavers; 7th, Gulf St. Lawrence; 16th arrived at Quebec; 26th at Quebec. **PELICAN**, 16, 15th May, at St. Helena, from Accra; 11th June, at St. Helena. **PEMBROKE**, 74, Captain F. Moresby, 8th June, arrived at Genoa, and proceeded to the westward. **PICKLE**, Lieutenant S. Hart, 16th May, Jamaica, from Cuba; 28th, Jamaica, from St. Jago de Cuba. **PIQUE**, 36, Captain E. Boxer, 19th May, seen off Bic; 21st arrived at Quebec; 26th, sailed for England. **PRESIDENT**, 52, Flag of Rear-Admiral Ross, 14th April, Callao. **PRINCESS CHARLOTTE**, 104, Flag Admiral, Hon. Sir R. Stopford, Captain A. Fanshawe, 20th May, sailed from Malta on a cruise; 28th, arrived at Naples. **PYLADES**, 18, Com. W. L. Castle, 11th June, Bight Biafra. **RACEHORSE**, 18, Com. W. H. Crawford, 21st May, arrived at Quebec; 30th, sailed for the protection of the Gaspe Fisheries. **RACER**, 16, Com. J. Hope, 7th June, Gulf St. Lawrence. **RATTLESLAKE**, 28, Captain W. Hobson, 4th April, sailed from Calcutta; 18th, at Moulmein; 10th May, Madras. **RAVEN**, 4, Lieut. Bedford, 11th June, at Ascension. **RHADAMANTHUS**, St. V., Com. A. Wakefield, 5th June, at Malta, from Naples; 8th July, sailed from Toulon for the Levant. **RODNEY**, 92, Captain A. Parker, 20th May, sailed from Malta on a cruise; 28th arrived at Naples; 10th June, at Naples. **ROVER**, 18, Com. C. Eden, 17th May, sailed from Rio for England. **SAMARANG**, 28, Captain W. Broughton, 15th April, arrived at Rio Janeiro. **SAPPHIRE**, 28, Captain R. Rowley, 9th June, arrived at Malta, from Smyrna. **SAPPHO**, 16, Com. T. Fraser, 16th May, off Cuba; 25th, Nassau, (N.P.); 27th, arrived at Port Royal. **SATELLITE**, 18, Com. J. Robb, 16th April, Barbados. **SCOUT**, 18, Com. R. Craigie, 1st May, sailed from Accra; 12th, arrived at St. Helena; 16th, sailed for Ascension; 11th June, at the Cape. **SCYLLA**, 16, Commander Hon. J. Denman, 8th June, at Cadiz. **SERPENT**, 16, Commander R. L. Warren, 16th May, Jamaica, from a cruise off Bahamas. **SNAKE**, 16, Com. A. Milne, 23rd May, off Cuba. **SPARROW-HAWK**, 16, Com. T. Shepherd, 3rd April, at Bahia; 17th, returned to Pernambuco. **STAG**, 46, Commodore T. B. Sulivan, 14th April, at Rio. **TALAVERA**, 74, Captain W. B. Mends, 23rd May, arrived at Halifax; 4th June, sailed for New Brunswick; 11th, sailed from St. John's; 1st July, arrived at Gibraltar. **TALBOT**, 28, 3rd July, at Gibraltar, from Plymouth. **TARTARUS**, St. V., 28th May, arrived at Port Royal. **TYNE**, 28, Captain T. Townshend, 25th May, sailed from Bosphorus for the Dardanelles, to take provisions and return to her station. **VANGUARD**, 80, Captain Sir T. Fellowes, 21st May, sailed on a cruise; 28th, arrived at Naples. **VESTAL**, 26, 9th June, arrived at Halifax in 12 days, from Jamaica; 10th, sailed for Quebec; 26th, at Quebec. **VICTOR**, 16, 6th May, sailed from Sangor on a cruise. **VIPER**, 6, Lieutenant Com. W. Winniett, 11th June, at the Cape. **WANDERER**, 16, Com. T. Bushby, 22nd May, at Jamaica; 30th, sailed for Carthage. **WASP**, 16, Lt. Crozier, 25th May, had left Constantinople; 10th June, arrived at Malta; 16th, sailed for Tunis; 27th returned. **WATERWITCH**, 10, Com. Dickey, 10th May, Sierra Leone.

WEAZLE, 10, Commander John Simpson (c), 17th July, sailed from Plymouth for Malta. **WELLESLEY**, 74, Flag Rear Admiral Sir F. Maitland; 18th April, Madras; 23rd, sailed for the Straits of Malacca and China. **WIZARD**, 10, Lieutenant Com. E. L. Harvey, 15th April, at Bahia, and returned to Rio. **WOLF**, 8, Commander E. Stanley, 18th April, at Moulmein. **WOLVERINE**, 16, Com. Hon. E. Howard, 6th May, at Gibraltar, from Carthage; 8th June, Gibraltar. **ZEBRA**, 16, Commander R. M'Crea, 10th May, Madras.

Births.

On June 21st, the lady of the Hon. Capt. Rous, R.N., of a son, still-born.

At Cowes, on the 10th of July, the lady of Lieut. Spurin, R.N., of a son.

In Harley-street, London, the lady of Captain Berkeley Maxwell, R.N., of a daughter.

Marriages.

At Brighton, on the 25th of June, Henry John Butt, Esq., only son of Captain Butt, R.N., of the above place, to Sarah-Louisa, third daughter of T. Moore, Esq., of Dorset-square, London.

At Kingston, on the 11th of June, by the Rev. Henry Holloway, Lieut. James William Morgan, R.N., to Caroline Dorothea, eldest daughter of Rear-Admiral Brown, of Elm Grove, Southsea.

On the 7th of June, at East Teignmouth church, John Whitehead Peard, Esq., son of the late Vice-Admiral Peard, to Catherine Augusta, daughter of the Rev. Dr. Richards, rector of Stoke Abbott, Dorset.

At Barnstaple, the Rev. H. Luxmoore, vicar, to Miss Noble, eldest daughter of Admiral Noble.

At St. George's, Hanover-square, Captain William Corry Astley, R.N., to Ellen, eldest daughter of the late James Toby, Esq., of Parliament-street, and of Richmond.

Deaths.

On his passage to the West Indies, to which station he had been appointed, Lt. J. Goodrich Dick, R.N.

In the Hackney Road, on the 25th of June, in the 83rd year of his age, Capt. George Robinson, R.N.

On the 12th of June, at Limehouse, London, Charlotte Catherine, wife of Lt. Robert Lawrie Atkinson, R.N., of her Majesty's ship Snake, aged 25.

At Blois, June 17th, Mary, widow of the late Captain C. W. Hotchkys, R.N.

At Nice, suddenly, Captain Woodley Losack, R.N.

At Sierra Leone, on the 7th of February last, John C. Stewart Field, mate, of her Majesty's ship Bonetta, aged 23, son of the late Capt. William Field, R.N., of the yellow fever.

At Quebec, on the 19th of June, Mr. J. Watson, mate, of her Majesty's ship Hercules, and youngest son of the late Fort Major Watson.

At Flag Head Station, near Poole, on the 8th of June, Samuel, Son of Lieut. Aldrich, R.N., aged 16 years.

At East Lodge, Enfield, on the 20th of July, Admiral Sir Pulteney Malcolm, G.C.B.

At Rochester, on the 4th of July, Mark Marsden, Esq., R.N., Purser of her Majesty's guard-ship Temeraire, at Sheerness.

In Duke-street, Westminster, on the 14th of July, at the house of her father, Mary Ann, wife of Captain B. Marwood Kelly, R.N.

At Exeter, on the 15th of June, retired Rear-Admiral John Winne, aged 69.

At Paington, Devon, Agnes, wife of John Goodridge, Esq., R.N., late Master Attendant at the Cape of Good Hope.

At sea, on the 3rd of December, 1837, Mr. Richard Pinnix, second master of H.M. cutter Raven.

At Landport, on the 17th of June, Sophia, youngest daughter of the late Mr. Alexander Mowbray, R.N., aged 28.

On the coast of Africa, in the month of May, Dr. A. C. H. Threshie, assistant-surgeon of the Viper.

On board the Nightingale packet, Lt. George Fortescue, her commander, four days after she left the West Indies.

At Salamis, on the 26th of June, Mr. Wm. F. Innes, midshipman of her Majesty's ship Bellerophon, aged 16 years, son of J. Wm. Innes, Esq. of the Admiralty, after five days' illness of scarlet fever. His remains were interred in the Protestant cemetery at Athens, and his messmates have placed an appropriate tablet to his memory as a mark of their regard and esteem.

At Englefield Green, on the 14th of June, Lady Brisbane, widow of the late Rear-Admiral Sir C. Brisbane, K.C.B.

At Singapore, on the 15th of November, on board her Majesty's ship Victor, of fever, Mr. H. M. Roe, clerk of that ship.

At Buckingham Place, Stonehouse, Mrs. Johnston, widow of Gabriel Johnston, Esq., late surgeon in her Majesty's navy.

At the Coast Guard Station, Langton,

on the 1st inst., suddenly, Lieut. James Mc'Ghie, R.N., an officer of thirty years' standing.

At Pwllhelli, on the 6th of June, the infant son of Lt. Charles Caldecot, R.N., aged two months.

At Bideford, Devon, on Tuesday, Charlotte, eldest daughter of Vice-Admiral Cochet.

On the 3rd of April, at Ortacmund, Nigherry-hills, Madras, Lieutenant John Harvey, her Majesty's 54th regiment, of the jungle fever, son of Vice-Admiral Sir Thomas Harvey, K.C.B.

At Peterhead, N.B., Mr. J. Keith, late Master, R.N., aged 70.

On his passage home from Sierra Leone, March 27, Mr. Thomas Moyes Taplen, Mate of her Majesty's brig Sappho, of fever, after an illness of seventeen days, only son of the late Lieut. Thomas Taplen, R.N.

At Stonehouse, on the 13th instant, Mr. Harry Niblet, late clerk in the charge of the Griffin, eldest son of Mr. H. Niblet, Purser, R.N.

At Haslar Hospital, Lieutenant Tobias Young, R.N.

METEOROLOGICAL REGISTER,

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

JUNE, 1838													
Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	Th.	In Dec. 29-58	In Dec. 29-68	59	60	58	70	S.W.	S.W	6	5	God. (2)	Qbcp. 3)
22	F.	29-84	29-88	60	63	51	65	S.W.	W.	6	6	Qbcp. (2)	Qbcp. (3)
23	S.	30-17	30-16	60	70	49	71	S.W.	S.	2	2	Bc.	B.
24	Su.	30-02	30 05	66	74	50	76	S.	S.W.	2	2	B.	B.
25	M.	30-08	30-10	70	74	59	76	N.E.	E.	2	2	O.	Ber. 4)
26	Tu.	30-00	30-00	56	60	55	62	N.E.	N.E.	2	2	Or. (1) (2)	Or. (3) 4)
27	W.	30-03	30-04	66	66	56	67	S.W.	S.W.	2	4	Od. (1)	Od. (3)
28	Th.	30-04	30 00	65	69	55	70	S.W.	S.E.	1	1	O.	O.
29	F.	29-97	29-97	61	66	52	68	W.	N.	1	2	Bem.	Bephrtl. (3)
30	S.	29-95	29-92	62	70	47	71	S.W.	S.	2	2	Bc.	Bed. (4)
JUNE—Mean height of the Barometer = 29-880 inches; Mean Temperature = 59 degrees; Depth of Rain fallen = 4-60 inches. A wet month.													
JULY, 1838.													
1	Su.	29-92	29 96	67	65	55	68	S.E.	S.E.	2		O.	Ber. 4)
2	M.	30 04	30 07	66	74	58	76	S.E.	S.E.	2	2	Ber. (1)	Ber. 4)
3	Tu	30-07	30 09	64	63	57	69	S.	S.W.	1	2	Ogr. (1)(2)	Ogr. (3)
4	W.	30-13	30-15	65	70	56	71	S.	S.	1	1	Or. 2)	Ber. (3)
5	Th	30-17	30-16	64	71	52	72	S.E.	S.E.	2	2	B.	Bc.
6	F.	30-05	29-98	65	74	61	75	S.	S.W.	2	3	Bcptl. (2)	Bc.
7	S.	30-00	29-98	64	68	55	70	S.W.	S.W.	3	4	Bicmp. 2)	Bcp. (3)
8	Su.	29-96	30-00	63	70	58	71	S.W.	N.W.	5	3	Qo.	Bc.
9	M.	30-16	30-18	65	77	59	78	W.	S.W.	3	2	Bc.	B.
10	Tu.	30-19	30-17	64	75	59	76	S.W.	S.W.	3	3	O.	Bc.
11	W.	30-15	30-13	70	78	57	79	S.W.	S.W.	4	4	Bc.	Bc.
12	Th.	30-09	30-08	68	75	61	76	S.W.	S.W.	3	3	Bem.	Bem.
13	F.	30-04	29-94	67	78	62	80	S.W.	S.	2	2	Bc.	Bc.
14	S.	29-84	29-79	68	61	60	70	S.	S.W.	4	5	O.	Gor. (3) (4)
15	Su.	29-78	29 84	63	69	60	71	S.W.	S.W.	6	5	Qbc.	Bcp. (3)
16	M.	30-08	30 18	60	70	55	70	S.W.	S.W.	6	5	Qbc.	Bc.
17	Tu.	30-24	30-16	66	71	54	72	S.W.	S.W.	2	5	Bem.	Bc.
18	W.	30-10	30-23	64	69	59	70	N.W.	N.	3	4	Bem.	Bem.
19	Th.	30-27	30-16	65	76	55	77	S.W.	S.W.	3	5	Bem.	Bem.
20	F.	30 00	29 98	61	71	54	72	W.	N.W.	4	4	Od. (2)	Bc.

ORIGINAL PAPERS.

SEPTEMBER, 1838.

A WINTER PASSAGE ROUND CAPE HORN, and Visit to the Marquesas Islands, by Her Majesty's Ship *Imogene*,* CAPTAIN H. W. BRUCE.

On the 27th December last, we rode out a heavy "Pampero," or S.W. gale, off Monte Video, between the two bower anchors,† moored with the swivel, 50 fathoms on each cable, in 18 feet water; topmasts struck, and a very heavy sea setting in. The ship rode easy; and H.M.S. "Fly," which was close to us, appeared to do so too. The strength of the gale lasted about eight hours, and was succeeded by fine weather. It is worthy of remark, that the barometer gave no indication of this gale, but, with the sympiesometer, gradually rose throughout it; the lurid indication, however, at daylight, was very strongly and truly marked. The barometer, at the end of the gale, stood at 30.3; sympiesometer, 29.64; thermometer, 71.

Sailing from this port on the morning of the 29th, with a fresh northerly wind, the ship dragged through the mud for half an hour. The passage to Rio occupied eighteen days, having for the most part N.N.E., and baffling winds; during two days of strong S.E. winds, (fair,) we found a current one day setting W. $\frac{1}{2}$ S. 39 miles, and another N. 60 W. 24 miles in 24 hours; and for most of the time a westerly current. On pushing the ship against a head swell, we discovered a running leak in the gunner's store-room, which ceased as the sea went down.

During 47 days in the harbour of Rio, from the 15th January to the 4th March, we experienced the sultry weather usual (thermometer 84° to 74°) at that season, in general with hot sun, and very fine regular land and sea breeze; and three times during the 47 days, heavy rain, with thunder and lightning, for two or three days at a time; the barometer always indicating the rain by a rise, and the sympiesometer keeping the same proportions.

* The reader will find some useful observations by Mr. R. Thompson, (Master of the *Imogene*,) in page 222 of our last April Number.

† Compass bearings at anchor.	}	Fort St. Phillip.....E. $\frac{1}{4}$ N.
		Rat Island.....N.W. by N.
		Light on Mount .....W,N.W.

ENLARGED SERIES.—NO. 9.—VOL. FOR 1838.

Sailing for Bahia, with Mr. Consul Hesketh on board, we did not reach that port before the 26th day. We stood into $30^{\circ} 15'$ W. long.; and there, being headed off to the southward, were obliged to go about: the winds always proved baffling and northerly, and we found a strong S.W. current: the charts of Baron Roussin are quite correct on these parts of the coast. The Bay of Bahia needs no further description than his. During the season of April, May, and part of June, the rains are dreadful, as well here as on the coast, sometimes attended with violent squalls of wind, and with thunder and lightning; one of these, which the Imogene experienced at sea, was terrific—a perfect tornado. We clued up everything to it, and fortunately did not lose a rope-yarn; and in two hours its fury was over. These rains last sometimes for a night and day, without any cessation, and, during that time, you must box your yards about, perhaps every 15 minutes, as the wind takes you aback—blows fresh for five or ten minutes—and then falls calm again. The barometer and sympiesometer, by a slight fall before sunset, indicated this change, which induced us to double reef before night.

The Bay of San Paulo affords a good and very secure anchorage. You carry $4\frac{1}{2}$ fathoms over the bar, and may anchor (as did the Imogene) in $7\frac{1}{2}$, open however from N. to N.E., but from which points the wind never is known to blow strong, and the bar would be, even then, a protection from the sea. The Imogene's anchorage was lat. $13^{\circ} 23' 57''$ S. long. $38^{\circ} 56'$ W. Our boats went twenty or thirty miles up this river, the Una, and were received with great suspicion at two places, where they landed; the natives being jealous of foreigners coming among them. The "Morro San Paulo" is remarkable for its comparative height on this low coast, and is distinguished by four cocoa-nut trees. At this little port, firewood is to be got of good quality, and cheap; the boats of the country bringing it down the river. An Englishman, residing within a mile or so of San Paulo offered us as much wood as we chose to cut on his own property, but as a bad bar-harbour, only accessible to boats at high springs, was the outlet by which it was conveyed, his offer could not be available. The gentleman's name was Dixon.

Returning from Bahia to Rio, with Mr. Consul Hesketh, the time occupied was ten days. Weather fine, after the first three or four days, when we cleared the influence of the Bahia rains. We passed the Abrolhos shoals, twenty-two miles distant, and saw Cape St. Thome, bearing W. by N. about twenty-five miles. The Brazilian corvette, "Dos de Julo," sailed two days before us, to make the best of her way, and did not reach Rio until we were caulked and nearly refitted, having been in the harbour four days. At this season, we found the weather at Rio temperate, clear, and very fine and healthy. The thermometer varying from 68° to 74° , and the barometer, 30.3 to 30.34: sympiesometer, 29.34 to 29.60.

We sailed from Rio for Cape Horn and Valparaiso, at daylight, on the morning of Sunday, May 28; as the Dublin fired her morning-gun, the Imogene's anchor was catted. We took up a fine N.E. breeze outside of Santa Cruz, which we kept for two days; on the third, we appeared to have outrun our good fortune, as we found ourselves in a hard westerly gale; the winds appearing much disposed to draw to the S.E. We shaped a course for the Falkland Islands, intending to pass in sight to the westward of them; but, notwithstanding these indications, the winds always hung to the westward; and it appears that, in the winter season, the navigator should keep within 100 miles of the coast, to effect this object. At 11 P.M., on the night of June 16, nineteen days out, we made the salvages of the Falkland islands, S.W. by W. 15 miles. The wind then headed us, and we could not weather them. The wind now hanging to the westward, we persevered against it for two days, and then got aslant, which enabled us to weather the Falklands, and it ended in a N. and N.N.E. wind, which carried us up to Staten Land, at 9 A.M. June 20, bearing south thirty-five miles. At noon, we were nearly abreast of Cape St. John; and the wind falling light, we did not venture the Strait of Le Maire. We passed through two races of tide, the ripple of which, to the timid navigator, might seem alarming; and keeping our leading wind, the ship at night was going seven knots.

Nothing can be more bleak-looking (not even the land near Halifax) than Staten Island, with its hills covered with snow.

Passing Cape St. John, within twelve miles, on the 21st June, we saw the Barnevelt Isles, at 10h. 30m. A.M., bearing N.W. by W. five leagues; and at 8 P.M. that night, Cape Horn bore W. $\frac{1}{4}$ S. four leagues. We were then becalmed, after two days having all sail set to the lower studding sail. During the night, sounded in 51 fathoms, small stones and shells twice; and in 64 fathoms sand and shells; hoping to regain our northerly wind, though it had sprung up from W. and W.S.W., we tacked, and stood in next morning; at 9h. 40m. A.M., June 22nd. stood off, Cape Horn N.W. by W. 6 or 8 miles; wind west. Sounded in 65 fathoms sand and broken shells; the land hereabouts is bleak, but beautifully diversified; the adjacent hills all under snow. Finding a confirmed W. to W.S.W. wind, we had nothing to do but to stand to the southward, which we did with but one interruption, from 9h. 40m. A.M., June 22, to 4 P.M. June 30. We had, during this time, some excessively severe weather; hard gales of wind without intermission; very heavy squalls of wind, hail, and snow, which we had frequently to shovel off the decks: the thermometer in the captain's cabin, where there was no stove or artificial heat, from 33° to 42°, and on the main-deck as low as 26°. Barometer from 29° 70' to 28° 40', in lat. 61° 20' S., and long. 71° 49' W. Here, as well as during all the voyage, the barometer faithfully indicated the changes, and the sympiesometer acted in perfect unison

with it. On the 1st of July, we got a leading breeze, to our great relief and joy, and did not haul a bow-line again, even to the hour of anchoring in Valparaiso Bay, at 11h. 50m. A.M. on Friday, July 14th. On getting aslant, June 29, in lat. $61^{\circ} 20' S.$, long. $71^{\circ} 49' W.$ We still persevered in making westing, in order to accomplish 83° to 85° west long., but passing the dreaded parallels of 54° to 50° south lat., with strong southerly winds, our voyage was evidently achieved, and getting to 80° west longitude, we shaped a direct course along the coast.

On the night of the 22nd June, off the Cape, the weather was particularly clear; the stars standing out in their respective spheres more brightly (almost) than I remember ever to have observed, and the Southern Cross and Magellan Cloud close to it, apparently resting upon it, were particularly conspicuous. Our crew, during all the voyage, were remarkably healthy, every precaution having been used of warm clothing, keeping them dry, and exposing them as little as possible; we had not an accident of any sort either to man or ship; and the only cases under the doctor were two or three old chronic complaints. The change of atmosphere was perceptible very soon after putting the ship's head to the northward, and nothing occurred to prevent our enjoying it, and profiting by it for the remainder of the voyage.

Cape Horn should always be passed, if practicable, within ten miles or less; but in our case the elements frustrated all our endeavours. We saw no ice; and when to the southward of Cape Horn, we found the tendency of the wind to head us on either tack very remarkable. When far south, and standing to the northward, we fell in with an American barque, standing at first to the southward in the night. However, she must have gone round, for at daylight the next morning, she was three miles on our weather-quarter; but carrying considerable sail through the night, we lost sight of her, and had to go to the southward again. On the whole, the winter season is very objectionable for accomplishing this passage, as however boisterous the summer passage may be, and with the certainty of falling in with ice, still there are long days, and you can see your way; whereas, with us, our day was scarcely seven hours long, the cold intense, constant gales of wind, with hail, snow, and violent squalls, and a very heavy cross sea; the sun's meridian altitude being $6^{\circ} 30'$ and 7° . We ran up to Coroumillo Point on the night of July 13, and were becalmed; and next forenoon, getting light airs from northward, anchored in Valparaiso Bay, at 11h. 50m. A.M., forty-seven days from Rio.

The number of ships and vessels huddled up in a corner in this bay, gives but bad presage of a comfortable anchorage, after an arduous voyage such as we had just accomplished; and though our most efficient Master, Mr. Richard Thompson, who had been here before, had prepared us for what we were to find here, the sound of the chain-

cable, while the anchor was going down 35 fathoms, grated harshly on our ears. No ship of war ought to anchor here during the season of the northers; for, be she ever so well provided or looked after, she can never be considered safe from the misfortunes of others breaking adrift; and as the northers blow for eight hours or so with great fury, and an immense sea comes rolling in, nothing but the very best of ground-tackling, and an anchor well settled in the mud, before-hand, can render a ship secure; and it is in general found that you have not room to veer; and though your anchor may not come home, yet, from riding with a short scope of cable, the chances are great that you snap it, and either go on shore, or foul of the nearest vessel to you. The *Imogene*, though easy at her anchors, dipped her driver-boom under in this wretched bay, and her bowsprit up to the bees; Her Majesty's ship *Actæon* dragged her anchors, and did mischief; and Her Majesty's ship *Rover* (owing to the reasons just stated above) parted her cable—"receiving the difference," as military men say; she fell foul of a Chilian corvette—as the *Actæon* did of an unhappy English schooner, and, disabling her, was also thrown back herself three weeks, from being under orders to sail the next day.

Between the 14th and 30th July, we had three of these northers; the first with heavy rolling sea, and much rain, but little wind on 15th; second, hard gale, heavy rain, thunder and lightning, and much sea on night of 26th; and, third, on night of 28th and morning of 29th, the most severe, with all trying accompaniments. Being in the hawse of a Chilian ship, we could not veer to more than ninety fathoms, to assist which our small bower also was bearing a strain, with about forty; the *Imogene* never started, but the *Actæon*, breaking her small bower-anchor in the shank, swung nearly on board, and kept the *Imogene* in jeopardy for some hours; our anchors both came up safe, though the best bower, by which we rode out the gales, took a heavy purchase to weigh it.

From the 30th, to the day of our sailing, the 8th August, we had beautiful and uninterrupted fine mild weather. The Chilian vessels of war giving a bounty of a doubloon to every English seaman they can get here, hold out a strong temptation for disaffection to our men, who are by no means proof against it. We recovered one man concealed on board the *Achilles* brig, but of seven or eight who deserted he was the only one not lost to us, though Admiral Blanco permitted the crew of his flag-ship to be mustered before an officer of the *Imogene*, who had obtained information of one of our men being on board her. The man was, no doubt, either concealed, or on shore out of the way, till the time of our sailing should arrive. Crimps on shore are also very active in seducing our men away from their duty.

August 8th, we sailed with orders to visit the Marquesas, the Sandwich, the Society, and Pitcairn's Islands. Captain Bruce was

charged with a letter from Her Majesty's Secretary of State, to the Queen Pomare, of the Society Islands, and with a commission for Mr. G. Pritchard, appointing him consul for those Isles. Having taken in five months' provisions, and filled the ship with bread and rum, no time was to be lost, and the morning being perfectly calm in the bay, though with a fine south breeze outside, we towed the ship out to the breeze, in which we were cheerfully assisted by the boats of the French frigate *Ariane*, Captain de Vaisseau; "Dubaut Silly," an officer who invariably shows (as, indeed, do all of the French marine whom we have met with) the greatest friendship and good feeling towards the English. Taking up the breeze at 2h. 40m. P.M., we started away at the rate of nine knots, and our instructions directing us to proceed on the voyage in the order above enumerated, we shaped a direct course for the small isles of St. Ambrose and St. Felix, which we were led to believe, from the information of Capt. Lord Edward Russell, would ensure our keeping the breeze, and which the result proved to be correct. We kept a brisk trade wind from S.S.W. to S.E., with very fine weather, and in seventy-two hours were abreast of St. Ambrose Island, the wind S.S.E. to E.S.E. Finding a strong N.E. current, we made St. Ambrose, bearing S.W. by S. 15 miles, and hauled up to close it, passing it within six to eight miles. A very remarkable rock, and very much resembling the "Bass" in the entrance of the Firth of Forth, lies off the east end of this island, and a small, rugged, conical-shaped rock to the eastward of it again. The large island (St. Ambrose) is, to appearance, about three miles from east to west, perhaps four miles to the conical rock extreme, from the west end of St. Ambrose, the Bass-like rock being almost connected with, and a small rough rock between it and St. Ambrose. Through the west part of the "Bass" is a remarkable fissure, leaving a cavity through at the water-line, and apparently twenty feet high, shaped as a triangle. Taking the height of the real "Bass" at 400 feet, (vide "British Cyclopædia," by Partington,) that of the isle will be about 1,600, the two "Basses" being of a height, as well as the eye and memory can judge. From these, keeping our course again, we passed close to the northward of the Isles of St. Felix, distant about 10 miles from the other, and grouped close together; within six or eight miles from this bearing, we could distinguish three. Five are represented in the chart, these islands all seem to be volcanic, and are without an appearance of verdure; they are all, including the "Bass," much marked by the birds which frequent them, and are numerous. We observed boobies, Cape pigeons, pigeons, and others unknown. We make the west point of St. Ambrose, to be in lat. $26^{\circ} 21' S.$, long. $79^{\circ} 33' 30'' W.$, which will place St. Ambrose in longitude $7^{\circ} 53' 30'' W.$ of Fort St. Antonio, Valparaiso taking the latter as $71^{\circ} 40' W.$, and shews it to be really $9^{\circ} 30' E.$ of its position on the Admiralty chart; Fort St. Antonio stands on that chart in $71^{\circ} 40' W.$,

and our three chronometers, which had been going steadily under the uninterrupted care of Mr. Richard Thompson, Master, lay it down as follows:—No. 813, $71^{\circ} 36' 15''$ W. ; No. 543, $71^{\circ} 40' 0''$ W. ; No. 379, $71^{\circ} 43' 15''$ W.

Proceeding to the westward, you open a conical, black-looking rock, at the west end of St. Ambrose, and close to it. One of the St. Felix isles is low and long, about two miles in extent, having a peaked hill at its west end. The east hill is high, and sugar-loaf shaped; and the westernmost is a jagged, and very peculiar looking rock. The surf beat heavily against every one of them, even on their lee sides, though the water with us was smooth; and nothing like a possibility of landing could be entertained from our view of them.

Having passed this groupe of islands, we shaped our course direct for the Marquesas, and with steady tradewinds from S. to E. by S., and very fine weather, dry and healthy; we had, at the expiration of seven days, one hundred and sixty-eight hours, gone by the log 1,286 miles, and made good 1,272. The barometer and sympiesometer during this week have stood high, and have been observed to fall one or two hundreds from noon to sunset, and then to rise again, and maintain their highest from nine or ten, A.M. Proceeding on a W. $\frac{1}{2}$ N. course, we kept the trade wind until Saturday, the 19th, when it fell very light, calm at times, variable, and baffling, and so continued to Saturday 26th, in latitude from $19^{\circ} 30'$ S. to $18^{\circ} 50'$ S., and longitude from 103° W. 111° W. Winds from north to east, and S.E., and from N. to W., and S.W.; weather very fine, and water in general smooth. The breeze then again sprung up from E. to N.E., and continued steady until Sunday, September 3rd, when it became calm, light, and variable.

Tuesday, September 5th, we were twenty-eight days out, and it continues nearly calm; we have not yet seen a sail of any sort since we sailed. The glasses seem to be nearly passive. We killed a small shark yesterday morning; it was hooked through the thick part of the fin. On the 24th, 25th, and 26th, we had a long S.W. swell. Lat. from $19^{\circ} 6'$ S. to $18^{\circ} 22'$ S.; long. from $108^{\circ} 20'$ W. to $113^{\circ} 7'$ W., and currents as follows: 1st September, S. 58° E., 14'; 2nd September, S. 8'; 3rd, September S. 14'; 4th September, S. 51° W. 10'. The general tendency of the currents being westerly. On Thursday, September 7th, the wind continuing light, and weather very fine, at 7 A.M. we harpooned and caught two large porpoises; and at 1 P.M. saw the Island of Magdalena, (the easternmost of the Marquesas,) bearing W. 40 miles; the land very high: the appearance of all these islands is volcanic. At 6, St. Pedro and Santa Christina in sight ahead; we passed the former about four miles from its south end, at 1 A.M., and at 2, hove-to for daylight. Santa Christina bearing W. by N. 5', in the port of which we anchored at 8h. 30m. A.M.; Friday, September 8th, thirty-one days from Valparaiso. We

passed the south point of the island, and run under its lee, until "Resolution Bay" opened, and having made four tacks, against very baffling winds, found good anchorage in twenty fathoms sand a quarter of a mile from the shore; extremes of the Bay N. W. $\frac{1}{2}$ N., and S W. $\frac{1}{2}$ S. We should rather call this a cove than a bay, as it is very small, and appears still more so from the towering height of the land; the wind is never known to blow in, except as a moderate sea-breeze, which we had on the afternoon of this day; and even a gale would, in all probability, (like Valparaiso,) not blow home. A good precaution in this Bay is to steady the ship with a stream-anchor, open hawse to the eastward, as the wind blows in variable puffs off the land, sending her round her anchor.

Mr. Rogerson, a missionary from the London Missionary Society, came on board as soon as the ship hove in sight, and offered his services, which proved most valuable to us; and to him we were indebted for whatever information we were enabled to obtain respecting the Marquesas. The native men came on board in great numbers before the ship had anchored, perhaps eighty at a time; and several women were in the act of swimming off to the ship, but at the captain's request, Mr. Rogerson desired the king, or chief, to forbid them coming, as they would not be permitted on board. This he immediately did, and so far it had the desired effect. At sunset, all the natives were ordered out of the ship, but about ten at night, five women, who had swam off, were discovered holding on about the bows, and on being turned adrift, struck out for the shore. The king of this island, "Jotiti," came on board, and brought his wife, whom he introduced to us as his Queen; and a chief, "Porhi," a friend of the king, came on board also. They gave us every assistance in getting water, which is very good, but does not run quick; the natives filled our casks, taking them in through the surf, and launching them off again to the boats at the back of it; and they offered to fill all night for us, which we did not require. The casks must be rafted off, in which way we got seven tons; and all that Jotiti and his people asked in requital of their assistance was a small quantity of gunpowder, or a musquet,* The dress of these people consists simply of (in the males, from the king downwards) a piece of the cloth of the "paper mulberry-tree," round the loins. The hair is sometimes fancifully tied, and others short, and they wear ear-ornaments of whales' teeth, or of shell, fitted with pigs' tusks; in some instances quite plain, in others carved; the women, besides having their loins covered, wear a loose robe or mantle of the cloth of the same tree, but prepared with more care for their use. The queen was beautifully and very much tattooed, even on her lips, and had handsome eyes, (very black and sparkling,) and good, even, white teeth; she had a well-

* The use of money is unknown here, and the only mode of traffic is by barter.

shaped, soft hand, with tapering fingers, good nails, and a handsome shaped leg, though rather bony at the ankle; feet small, yet clumsy over the instep; her head was without covering or ornament, having coarse jet black hair, and her ears carried appendages similar to those worn by the males; the queen had a very pleasing expression of countenance, and on our captain placing a Paisley tartan shawl upon her shoulders, she seemed very much gratified, and blushed a bright pink colour through the ugly yellow with which, to ward off the effects of the sun's rays, they invariably (females and males) daub themselves. These women are by no means well looking; their noses are flat, foreheads and cheeks badly shaped, and they are rather short of stature than otherwise. The men are muscular; some half-dozen very tall, and average a good height, but from their habit (both men and women) of squatting upon their buttocks, their feet become turned in, and they acquire an awkward shambling gait. They were all very well-conducted on board, and though curious and inquisitive, gave no offence, and did not attempt to pilfer. Several females were permitted on board to see the ship, the chief, undertaking that they should not remain on board longer than was convenient. They were very much pleased, and the men often repeated "Good man of war," and, in their own way, they took the dimensions of the ship.

The people of these islands are a dissolute and depraved race, possibly from ignorance. They profess a sort of marriage engagement, which, however, they do not regard; but wives are taken and discarded at pleasure, or caprice, in consequence of all which the population is rapidly decreasing, notwithstanding Mr. Ellis does not admit it; about one birth occurs for three deaths; and during the last month Mr. Rogerson knew of four deaths, but no birth: the women are fond of their children, and take motherly care of them. A writer on these islands, "Lieutenant Paulding," U.S. navy, (see Partridge's Cyclopædia,) is made to say that, "plurality of wives is not admitted;" the fact is, that the marriage state is altogether disregarded, and King Jotiti has (besides his wife or queen, whom he had taken from another man,) five wives who live in the same hut with the above-mentioned queen. They are an indolent people, living principally upon the bread-fruit, plaintains, cocoa-nuts, and sweet potatoes—the spontaneous productions of the islands; sometimes they get fish, which they devour in its raw state, tearing it with the fingers; Jotiti, however, showed that he knew perfectly how to use a knife and fork, and to mix wine and water in a tumbler, and drink it, rum being forbidden them. The King rejoiced in the opportunity to have "Jones," the ship's barber and fiddler, to shave him. Pigs are plentiful, but are only used by the natives in sacrifice; the young ones, which have been fed upon bread-fruit, are very good and delicate food; poultry is scarce, nothing but the com-

mon fowl; and the only cows are a very few belonging to the English, and transported here. Arrow-root grows spontaneously; it is used by the missionaries, but the natives will not be at the trouble to cultivate it. Fire-wood can be procured if wanted; it is not kept cut, the weather being so mild and fine that fires are never required, and the natives only using it in a very small quantity for occasionally cooking the bread-fruit. The population of Santa Christina is 1,500, the three windward isles, of which it is one, (St. Pedro and Hood's being barren uninhabited rocks,) are computed to have 9,000 souls; and the four leeward 9,000 also. Infanticide is not among their faults. The English population consists of Mr. Rogerson and Mr. Stolworthy, (missionaries,) Mrs. R. and three children, and two Irishmen, by name Collins and Robinson, both natives of Dublin, who support themselves in the bay next to windward of "Resolution;" Collins has a native wife, the best looking young woman I observed, and seems a respectable man; the other I should be sorry to trust, he does not look like an acquisition to any society; he is tattooed across the face, and will therefore probably never return to England. Mr. Stolworthy was pursuing his avocations at Dominica at the time of our visit, and not being to return for a week, we could not delay so long.

This group of islands proves an unfruitful field to the labours of the missionaries, who are unable (after three years residence) to make any religious impression upon the people; they still retain their idolatrous practices, and have a vicarious mode of worship, through a sort of priest, to their idols. They entertain great respect for the missionaries, treat them well, and seem much gratified by having such civilized and clever people among them; but on Captain Bruce advising Jotiti to attend to the instructions of Mr. Rogerson, his answer was, that the piccaninnies (meaning the women and children) had his encouragement to do so, but that for himself he declined. Mr. Rogerson has no congregation, he goes among the natives in their houses, besides having a place for them to assemble at to attend his ministrations, if they would; but I cannot wonder at the want of improvement in their morality, when it is evident from the fact of women swimming off to the ships, that they must be encouraged to do so (both on shore and afloat;) and the crews of American whalers, as well as our own countrymen, have much to answer for in this respect. If ships of war were in the habit of making more frequent visits to Santa Christina, every three months for instance, with officers disposed and determined to support the missionaries in their arduous duties, it would go far towards improving the moral conduct of the natives, who are delighted to see our ships of war, and are impressed with the greatest possible respect for them; and if we acted consistently with the doctrines which the missionaries hold forth, their efforts for the establishment of the Christian religion among these

people would probably be attended with success. More Englishmen might then be induced to settle, and profit by the easy and ample means of livelihood which the islands offer; and they, forming a nucleus, round which, the labours of these active and estimable missionaries might spread religious instruction in every direction throughout the native community, would thus be the means of accomplishing an important philanthropic object, though perhaps without any political advantage. Santa Christina once known to encourage these views, the other islands would soon take their tone from it, and vice and profligacy would meet a decided check. But the ships appointed for the service of these islands, ought to receive a caution respecting their religious and moral state.

Two English seamen, who had left a Portuguese whaler here two months previously, on account of her ill-luck, begged to be allowed to join the ship, and were received: from the account of these men, as well as from other sources, no doubt can be entertained but that the Marquesians are cannibals, though they seem ashamed of, and deny it. Two men (natives) had been baked and eaten a few months before our arrival, subsequently to a battle which had been fought on Santa Christina, between two refractory tribes "Aputoni," and "Ano-taia," and five who remained loyal to their king—our friend Jotiti. He was victorious, and having banished some of the disaffected to the adjacent island of Dominica, is now apprehensive of a fresh attack from thence. The S.E. trade blows among these remarkable islands, which possess every advantage of climate; and we found such fine weather and smooth water during all the voyage from Valparaiso to them, that the jolly boat might have achieved it, so far as the elements were concerned.

The relative position of these islands to each other is correctly laid down in Arrowsmith's chart, but the group is placed further to the westward than the reality by 13' 30". The mean of the Imogene's three chronometers places "Resolution Bay"—

Mr. Rogerson's house	138° 54' 30" W.	} Mean. } .. 138° 53' 21"
The Actæon places it	138° 52' 13"	
Nories book	138° 50' 10"	
Dr. Inman's book	139° 8' 0"	
Arrowsmith's chart	139° 8' 0"	

The mean of the "Imogene" and "Actæon" would probably be correct.

MIDGLEY SHOAL, IN THE ATLANTIC.

SIR,—By a letter which I have received from Captain Thomas Midgley, of Liverpool, it appears that there is a shoal, probably dangerous, near the parallel of 44° 10' N. and meridian of 23° W.

which, of course, should be made generally known. The particulars annexed are given as described by Captain M.

Your obedient servant,

JOHN PURDY.

“The experience of my last voyage to Africa (in the *Challenger*,) has tended to confirm what I have previously written with respect to Africa,* and I now proceed to give you the particulars of what I consider to be a very dangerous shoal; regretting sincerely my inability to examine it closely, owing to my crew being on short allowance of provisions and water, in consequence of a long prevalence of light and adverse winds.

“On the 14th of the present month, (June, 1838,) at 2h. 40m. P.M., on my passage from Africa to this port, I suddenly fell in with a large patch or belt of discoloured water, of a dirty grey appearance, much resembling river water, and *rippling very much*, as if upon a shoal bank. No rock nor danger could be seen from the masthead; but the water appeared very much discoloured for more than half a mile in breadth, as far as the eye could reach, in a direction N.W. and S.E. by compass.

“The vessel passed at a quarter to half a mile from the S.E. point or extremity of it, which lies in lat. $44^{\circ} 9' 30''$ N., long. by an excellent chronometer, $22^{\circ} 57' 45''$ W. from Greenwich, and by *account* from Flores, $23^{\circ} 5' W.$ The latitude, reduced from the sun's meridian altitude, taken on the same day with two excellent sextants; and the chronometer ascertained to be correct off Flores, four days previously, and subsequently, when off Holyhead, in St. George's Channel. The altitudes for the time were taken a few minutes after passing the danger, and when it was still within one mile of the vessel.

“In appearance, this water very much reminded me of the shoal grounds near Nantucket and on George's Bank: had it been caused by ice, some would have been seen upon the surface; if by fish, there would doubtless have been many birds hovering about, which was not the case.

“At the time I saw this danger, I was running with a favourable breeze and clear weather, and the contrast between the deep blue colour of the water in which the vessel was sailing and that of the danger I allude to, was noticed by every one on board.

“This is, perhaps, the “Greeves Ledge,” of the charts said to have been seen by Captain Greeve, of the Dutch ship *Anna Catharine*, 7th July, 1745, and since, by Captain Currie, of Port Glasgow, and laid down in lat. $44^{\circ} 15'$, and long. $25^{\circ} 5'$; the latter probably by dead reckoning.”

I remain, &c.

T. MIDGLEY.”

* New Sailing Directory for the Ethiopic or Southern Atlantic Ocean, pages 284 to 290.—J. P.

P. S.—In the month of June, 1833, Captain C. W. Nockells, an intelligent mercantile commander, from Jamaica for London, passed through a very extensive and continuous tract of water, of a *dirty dark green colour*, between the meridians of 28° and 22° W. and the parallels of 44° and 46° N.; which, it may be observed, according to the charts, is the tract between “Greeve’s Ledge,” and the “Isle Vertè;” but it does not appear that there was seen, in this tract, any indication of danger. See, upon this subject, the article entitled “*Soundings in the North Atlantic*,” by an advocate for the use of the Deep Sea Lead: *Nautical Magazine*, October, 1833, pp. 599, 601. J. P.

[We regret to perceive that in both these instances, the lead has not been used.—Ed. N. M.]

CURRENTS OF THE OCEAN.

H.M. Brig Hope. Noon, 31st March, 1838.

Lat. $50^{\circ} 10' N.$; Long. $9^{\circ} 43' W.$ per Chronometer.

SAILED from Havana on 28th February, and have 1,772,642 dollars on board, in freight. Up to this time, all well. The wind has been strong to the eastward for three days.

Should this ever be taken up, I request it may be made public in some of the prints of England, (the *Nautical Magazine*.) The intention of this is to ascertain the direction and velocity of the current.

D. PENDER, Master, R.N.

We have received the paper from which the foregoing was copied, from the French Consul in London, who states that it was found in a bottle, “le 1re Juin dernier sur la cote de la Veigue quartier de St. Gilles, arondissement de Rochefort,” and we have much satisfaction in thus completing the intentions of the writer. The course and distance which it has travelled appears to be about S. 56° , E. 390 miles, about six miles per day, agreeing with several others which we have previously published.

THE SISAL BANK, AND MADAGASCAR SHOAL.

IN the commencement of our last number, our readers will find an excellent paper on the navigation of the gulf of Mexico, in which these dangers are alluded to. We have, at length the satisfaction of saying, that by the exertions of Lieutenant (now Commander) Edward Barnet, the positions of both are conclusively determined by triangulation from the shore. The former being found laid down in the charts a mile and a half too far to the northward, and three minutes and a half to the westward of its real position; and the latter not laid down at all. In fact, the latter has been discovered by the Madagascar grounding upon it, and it is a matter of astonish-

ment that it was not so found out before. Our object, however, is now to apprise seamen of the correct position of these very formidable dangers, and first of the Sisal Bank. This Bank, (centre) lies in lat. $21^{\circ} 20' 44''$ N., and long. $90^{\circ} 9' 36''$ W., in a direction, N. 31° ; W. (true) $12\frac{1}{2}$ miles from Sisal Castle, the least water on it is nine feet, and it is about three-fourths of a mile in a N.N.W. and S.S.E. direction. In the channel between it and the shore, is not more than seven fathoms, with tolerably regular soundings.

THE MADAGASCAR SHOAL is a most dangerous, narrow, coral ledge, lying in a direction nearly east and west, about a mile and a quarter long, covered with dark grass, and having in one part, towards its western end, only nine feet. The latitude and longitude of its two extremes, are as follow:—

East end . . . $21^{\circ} 26' 6''$ N. $90^{\circ} 17' 30''$ W.

West end . . . $21^{\circ} 26' 18''$ N. $90^{\circ} 18' 48''$ W.

Its centre lies N. 42° W. $21\frac{1}{2}$ miles from Sisal Castle, and in the channel between it and the Sisal Bank, from which its centre lies N. 56° W. ten miles, there is ten fathoms water. We consider the discovery of the *Madagascar* Shoal, and the proper position of the Sisal Bank, now ascertained to be most important additions to the hydrography of the West Indies, more particularly when we find the charts and directions so imperfect. We also learn from Commander Barnett, that some most unaccountable error has crept into the scale of the charts, (and the directions founded thereon) of the Arenas isles, to the westward of these dangers. The Arenas shoals, instead of being upwards of nine miles in extent as described, are actually not more than a mile and a half! On this very isle a Spanish officer observed, and from whose survey it is described in the *Derrotero*. It may be mentioned also, that the celebrated mount, *No te perderas*, the Spaniards' mark for keeping clear of the Sisal, is becoming indistinct, in consequence of the trees on it falling from the ravages of an insect, which not only destroys the leaves, but attacks the whole tree, root and all, and is very destructive in the West Indies.

ILLUSTRATIONS OF CASES OF DAMAGE BY LIGHTNING IN THE BRITISH NAVY.

THE damage experienced in our Navy from lightning, at various times, with the resulting consequences to the country, does not appear to have been ever duly considered, or made a subject of deliberate investigation. Indeed it has not unfrequently been deemed comparatively unimportant, and such as not to warrant much trouble and expense in order to avoid it. It may, however, be clearly shown, by an examination of the instances of damage in the Navy by lightning, that the loss to the country in *men, money, and services of ships,*

has been of very serious moment, and such as leads us to infer, that many vessels of which no account can be given, and some of which have disappeared in a very sudden and unexpected way, may have fallen victims to the destructive effects of atmospheric electricity. I purpose in this, and some subsequent papers, to select a few striking instances of damage by lightning in the British Navy, authenticated by extracts from the official log-books, obtained through the kindness of Captain Beaufort, hydrographer to the Admiralty, with a view of illustrating more explicitly the calamitous circumstances to which our shipping in general, are continually exposed, as also for the purpose of verifying the statements I have advanced in my former papers, respecting an effectual security against the unsparing hand of lightning. It is only by a strict adherence to the spirit of inductive science, aided by a copious collection of facts, and frequent observation, that we can ever hope to arrive at sound and satisfactory views on this interesting question.

The first case of importance claiming our attention, is that of the *Thisbe* Frigate, of thirty-two guns, struck by lightning, on the 4th of January, 1786. The dangerous situation of the ship is represented in the accompanying drawing, for which I am indebted to the kindness of my friend Colonel Hamilton Smith. The particulars are given in the following extract from the ships' log.

“Remarks on board His Majesty's Ship *Thisbe*. Lat. 50° 39' long. 7° 00'. January 4th, 1786; midnight, bore up for Cork in want of provisions, blowing hard, with a heavy sea from the eastward. 4th, A.M. Strong gales and cloudy. At 2 P.M., handed main-sail, and main top-sail. Hove-to under storm stay sails. At 3, rainy, with hail-showers, blowing very hard. Quarter past 4, a flash of lightning, attended with a tremendous clap of thunder, disabled some of our people. A few minutes after, a second flash set the main-sail-top, and mizen stay-sails on fire, which spread so fast, was obliged for our safety to cut away the main-mast; this carried away the mizen top-mast, and fore top-sail yard. In securing the fore top-sail yard, found the fore-mast very much shivered by the lightning. At 5, quite clear of the wreck, and all secure except the fore top-mast, which went away about 9, together with the fore-mast head, secured it up and down the rigging, much lightning, with rain throughout the night. At 8, A.M., set the fore-sail and bore away; employed, clearing the wreck of the fore-top-mast head; saved the top-sail, cut the cutter up which was stove by the main-mast going over the side. At noon, fresh breezes and clear.”

The ship, it appears, was obliged to proceed to Portsmouth, where it was found requisite to pay her off; this was done on the 26th. She was not re-commissioned until the 8th of April following.

The next instance is that of the *Lowestoffe*, a frigate of the same class, attached to the Mediterranean fleet under the command of

Admiral Hotham, in the year 1795. She was damaged by lightning in March 1796, a period in which the services of our ships were of vital importance. The French, supported by a strong fleet, having invaded Italy, were making every effort to drive us from the Mediterranean.

“Remarks on board H.M. Ship *Lowestoffe*, Tuesday, March 8, 1796. Lat. 41° 32' N. long., 5° 12' E. North end of Minorca, 5° 46' W., dist. 134 miles. Wind, S.E. to E.

“P.M. Heavy squalls of wind, attended with much thunder, lightning, hail, and rain. $\frac{1}{4}$ past 12, a flash of lightning, striking three men; knocked them from the mast-head, one of whom, viz. John Goolan, was struck dead, leaving the others much burned and benumbed. $\frac{1}{3}$ past 12, another flash struck many on the different decks, rendering them motionless, and in its course shivered the main-top mast to pieces; a few minutes after, another flash set the *ship on fire* in various parts of the masts and rigging, which was smothered by torrents of hail and rain. Broke several hoops of the main-mast, and shivered it in pieces; split also the fore-top mast, and carried away the fore-top-sail yard; it knocked, at the same time, many men out of the top, one of whom, viz. James Campbell, was instantly killed. The lightning, entering between decks, made such an explosion as to affect all, rendering some totally benumbed in different parts of their bodies. The main-mast being found in such a state as to oblige us to cut it away in order to save the other mast, and prevent its falling in a dangerous direction. About $\frac{1}{2}$ past 1, cut it away, and employed the people in clearing the wreck; a heavy sea still continuing, with much thunder and lightning. $\frac{1}{2}$ past 2, the weather began to clear; set the fore-sail. A.M. Light breezes, set the mizen-sail. 9th. People employed in clearing the wreck.” 10th. Got up a fore-top-gallant mast for a jury main-mast. 11th. Came to in Port Mahon.”

This ship was detained under refit in consequence of the damage sustained, until the 10th of May following, when she again sailed out of the bay.

The third case relates to the *Russell* of seventy-four guns, one of Admiral Harvey's squadron, cruising off Ushant, in October, 1795; it occurred also at a very critical period of our history, when the services of our fleets were constantly called for.

“Remarks on board His Majesty's ship *Russell*, October 22nd, 1795. Lat. 47° 15', Belle Isle north; distance 6 or 7 miles. Wind, west to south.

“A.M. Fresh gales and squally, with thunder and lightning. About $\frac{1}{2}$ past 1, a heavy squall, with hail and rain, took us aback; at the same time a flash of lightning struck the ship, and instantly killed Mr. Charleston, first lieutenant, William Chalvers, and Francis Clark, seamen; many others being much hurt. The *main-mast* was *shat-*

tered, so as to render it *unsafe*. The mizen-mast, main-top mast, mizen-top mast, and top-gallant masts, much injured. Got down the main-top-gallant mast; struck the main-top mast. Carpenters and men employed fishing the main-mast and mizen top-mast. A.M. Moderate and cloudy. Employed fishing the masts."

It appears by the Naval Chronicle that this ship narrowly escaped being wrecked on the enemy's coast, as the wind blew in squalls right on, and no sail of consequence could be carried either on the main-mast or mizen-mast. She was eventually sent to Portsmouth, in order to have her masts taken out, and to refit.

In reviewing cases of damage by lightning, such as these, the points principally requiring consideration, are, the loss to the country, in *services of ships*, in *men*, and in *money*.

The three instances just detailed, present no small indication of the probable magnitude of the loss in these three important particulars, which would be apparent in a general history of the total number of ships in the Navy, damaged by lightning within a period of fifty years.

The loss to the country in *money*, although comparatively the least important, when we consider that our seamen are liable to be struck dead or seriously injured, and that the nation may suffer in its maritime ascendancy, is still of a ruinous amount.

In estimating this, we have not to consider merely the workmanship and materials for making good defects; but likewise the amount expended in wages, provisions, &c., &c., during the time a ship is rendered unfit for service; money being paid on account of a vessel, placed as it were *hors de combat*, by lightning. It must, in fact, stand upon the same ground as any other damage from natural causes,—e.g.

Suppose a ship were wrecked, and all the expenditure on account of her continued, as if still efficient. It is evident, that so much money would be expended in vain. This would be in fact so much loss to the country: indeed, in the case of a ship about to be paid off, every day's delay is considered as so much money lost. Now, when a vessel is placed for any given time, *hors de combat*, by lightning, or so disabled as to be incapable of performing the duties required of her; she is for the time in the state of a vessel temporarily wrecked. The actual loss, however, arising in this way, becomes quite apparent, when it is remembered, that in case of a vessel on an important station being rendered unfit for service, it frequently becomes necessary to replace her by another immediately, whenever that can be done. Hence an additional number of ships are required to provide for such casualties. Considering, therefore, these three elements in the instances above mentioned, they will be as follow:—

1st. The *Thisbe*, a frigate of 32 guns, and 200 men, obliged to leave her station, several of her crew hurt or disabled, and the

ship reduced to such a wreck, as would, in the full activity of a naval war, have rendered her an easy prize to a much inferior force. Her masts shivered, sails and rigging on fire, main-mast cut away, and all its accompanying gear lost, mizen-top mast lost, fore-top mast carried away, fore-mast rendered unserviceable, one of the boats destroyed.

The consequent loss to the country in workmanship, and materials in making good defects, together with the paying off and recommissioning the ship, &c., &c., cannot be estimated on a moderate calculation, at less than 6,000*l*.

2d. The *Lowestoffe*. In this case the Mediterranean fleet lost for upwards of two months the services of a frigate, so crippled by lightning, that had she fallen in with an enemy, as happened shortly after her refit, she must necessarily have been taken. Her masts and rigging on fire during the storm, main-mast shivered and cut away, main and fore-top masts destroyed, fore-top-sail-yard lost, two men killed, many burnt, and disabled; others benumbed.

The loss to the country on account of the damage sustained in this instance, cannot be estimated at less than 5,000*l*.

3d. The *Russell*, of 74 guns. In this instance our fleet off Ushant, whilst daily exposed to the chance of a general action, lost the services of a line of battle-ship, her masts being crippled, her first lieutenant and two men being killed. The actual loss to the country on account of the damage sustained by this ship, taking into account the detention and refit, would not certainly be less than 5,000*l*.

Upon a review, therefore, of these three cases only, we find an expenditure of 16,000*l*. and upwards; the services of a line-of-battle ship and two frigates lost, at a time, when (in two instances) urgently demanded; one lieutenant, and four men killed, and many burned, or otherwise severely hurt, or disabled.

When we consider that in some instances nearly a whole fleet has been crippled and detained when in pursuit of an enemy; that one of our frigates, the *Guerriere*, actually went into action with her main-mast in a tottering state by lightning;* and that within the last fifty years it may probably appear, that scarcely a ship has not, at some time or other, been struck by lightning; the necessity of adopting some efficient means of defence, must, I should think, be acknowledged.

It is no argument to say, that the cases above quoted, happened a long time ago, because the same cause of damage still exists, and is constantly displaying itself. Thus we find, only within a few months, very severe damage occurring, not only in the navy, but in the merchant service, (a large ship having been lately set on fire, and destroyed, whilst others have narrowly escaped a similar fate. My

* James' Naval History.

object in selecting these cases, is merely to illustrate more completely the fearful destruction to which our ships and seamen are exposed, so long as they remain undefended from lightning. That which happened in the year 1796, may again occur in 1838. And, therefore, to send our fleets to sea unprotected from this destructive element, when it is possible to defend them, on the mistaken ground, that the cases of damage are few, and that they happened many years since, would be even more absurd than to send them out, without a proper supply of guns and ammunition, on the ground, that the last naval fight happened a long time since, and that the instances in which our ships have been called into action, are, upon the whole, comparatively few, and, at the present period of peace, not likely to occur.

It will be seen, on attentively considering the course of the lightning in the three ships just mentioned, that its operation is completely in accordance with the laws laid down in my former papers. The electrical fluid has endeavoured to equalize itself between the charged surfaces of the sea and clouds, passing in directions where, upon the whole, it meets with the least obstruction, marking its course by destructive explosions.

TABLE OF PORT CHARGES AT MADRAS.

ANCHORAGE.

* South Roads.		* North Roads.		Remarks.	
	Rps.		Rps.		
Country ships.	British ships and ships under Foreign, European, or American colours	38	From 400 to 300 Tons.	21	If an <i>Europe ship</i> is trading in the East Indies, anchorage is only charged whenever she arrives here, the same as a <i>country ship</i> — or even from New South Wales. But if a <i>Europe ship</i> arrives, <i>via New South Wales</i> , she is charged the same, as if she had come from England <i>direct</i> . If a vessel does not remain in the roads 24 hours, she escapes paying anchorage-money, though if she should have water, &c., sent to her from the shore, the privilege would be null and void. All country ships above 500 tons pay thirty-five rupees anchorage-money.
	From 900 to 500 Tons.	35	„ 300 to 200 „	17	
	„ 500 to 300	28	„ 200 to 100 „	14	
	„ 300 to 200	21	„ 100 to 40 „	10	
	„ 200 to 100	17	„ 50 to 20 „	5	
	„ 100 to 50	14	„ 20 to 10 „	1	
	„ 50 to 10	10	* Where native craft moor.		
* Where ships commanded by Europeans, anchor.					

LIGHTHOUSE DUES.

	Rps	
All British and Foreign Ships	25	Lighthouse dues must always be paid if a ship drops anchor, though she does not intend to remain.
Country Ships	14	
Snow, Brig, Ketch, and Schooner.....	7	
Sloop and Cutter	5	
Large Dhonies	5	
Small ditto	2	
Masulah Boats	1	

SMALL CATTAMARAN HIRE.	Rps.	A.	Remarks.
To all Ships on anchoring.	1		A small Cattamaran is always sent off when any vessel anchors, with printed papers of the regulations of the port, which are also translated into French, and supplied to all vessels of that nation.
Snow, Brig, and Ketch, ditto ...	12		
Sloop and Cutter, &c. ditto.....	10		
Dhonies and Large Boats, do....	8		
Carrying Letters to Ships, &c....	4		
Carrying Provisions or Parcels...	1		
LARGE CATTAMARAN HIRE.			
For Landing or Shipping an Europe			Since 30th September, 1836, a reduction of 25 per cent. has been made in the charges for large Cattamaran hire employed in landing or shipping anything too heavy or cumbersome for a boat.
Cable of 13 to 16 inches	25		
For do. do. of 17 to 22 inches...	38		
For do. do. an anchor of 14 to 29 cwt.....	25		
For do. do. do. of 30 to 50 cwt.	38		
FOR LANDING OR SHIPPING GUNS AND MORTARS.			
<i>Calibre.</i>			
No. 1...42 Pounders, 67 cwt. }	22	}	
No. 1...32 " 56 cwt. }			
No. 1...24 " 49 cwt. }	19	}	
No. 1...18 " 41 cwt. }			
No. 1...12 " 32 cwt. }	15	}	
No. 1... 9 " 28 cwt. }			
No. 1... 6 " 22 cwt. }			
<i>Brass Guns.</i>			
No. 1...18 Pounders, at 24 cwt. }	15	}	
<i>Brass Mortars.</i>			
No. 1... 13 inches, 25 cwt. ... }			

SALVAGE.	Rps.	A.	Remarks.
* On anchors recovered in the roads, one-third on the value, at the rate of 28 rupees per cwt. ... To divers employed in diving and making fast a rope to a ship's anchor, on application	35		* Since 30th September, 1836, the salvage charge on anchors has been reduced to one-third of their value, according to the market rate of the day, being always less than the former charges, which were at a <i>standing</i> rate. * The foregoing alteration is equally applicable to this.
* On other articles recovered by divers, 25 per cent. on the whole-sale value of the property			
RATES OF HIRE WHEN EMPLOYED AFLOAT, FOR BATTAs, LASCARS, AND ARTIFICERS.			
Tindal, per day		10	Sea Lascars are also provided by the Ghaut Surrang, when applied for to the master-attendant.
Lascar, do.		7	
Carpenter Maistry, do.	1	4	
Carpenter, do.		14	
Painter, do.		14	
Glass Cutter, do.		14	
Caulker Maistry, do.	1	4	
Caulker, do.		14	
Bricklayer, do.		14	
Batta money to the above artificers, if retained on board ship after prescribed hours of work.			
Maistry per day		4	
Labourer and Batta Lascars, &c.		2	
BOAT HIRE IN ORDINARY WEATHER.			
* Ordinary trip	1	3	* A cargo-boat.
Accommodation boat hire trip	4		
IN FOUL WEATHER.			
* Ordinary trip	2	3	* A cargo-boat.
Accommodation boat hire trip	6		

PROPOSALS FOR STEAM NAVIGATION.

[Read to the Ashmolean Society, Feb. 26th, 1838.]

JONATHAN HULLS, in 1736, took out a patent for "carrying vessels and ships out of and into any harbour, port, or river, against wind and tide, or in a calm." In the following year he published a description of his method, which consisted in towing them by a steam boat. The copies of the original edition of this tract are very scarce, but it was reprinted at the end of Mr. Partington's Lectures on the

Steam Engine (1826,) and well deserved to be recalled to public notice. The draw-boat was to be furnished with a pair of wheels, to the axis of which, arms were attached with flats boards (which he calls fans) at their extremities; and great ingenuity is said, upon very good authority,* to be displayed in the contrivance, not only of the method by which a circular action was produced, but of that by which the motion of the engine was regulated.

The wheels were placed at some little distance behind the stern of the boat, which at first sight seems objectionable; and would be so, if it had been intended to act independently; but connected, as it was to be, with the ship which it had in tow, the wheels came more nearly to what may be considered as the centre of the compound body, which they were the means of propelling.

This is the earliest notice which most writers have given of any attempt to apply the force of steam to navigation; and it probably did not succeed, since the object seems to have been abandoned and considered as unattainable till it was again resumed in the latter part of the last century. There is, however, preserved in the registers of the Royal Society a plan for this purpose, devised by Dr. Papin, and submitted to their consideration in 1708. On the 11th of February, the Journals record that a proposal was read by him concerning a new invented boat to be rowed with oars moved with heat, and it was mentioned again on the two next successive general meetings of the society. It appears to have come with a letter of recommendation from Leibnitz, and Papin's own account is as follows:

“It is certain that it is a thing of great consequence to be able to apply the force of fire for to save the labour of men; so that the parliament of England granted, some years ago, a patent to Esq. Savery, for an engine he had invented for that purpose; and his Highness Charles Landgrave of Hesse hath also caused several costly experiments to be made for the same design, as it appears by books printed upon that subject. But the thing may be done several ways, and the machine tried at Cassel differs from the other in several particulars, which may afford a great difference in the quantity of the effect. It will be good, therefore, to find out clearly what can be done best in that matter, that those which will work about it may surely know the best way they are to choose. I am fully persuaded that Esq. Savery is so well minded for the public good, that he will desire, as much as any body, that this may be done.

“I do therefore offer, with all dutiful respect, to make here an engine after the same manner that has been practised at Cassel, and to fit it so that it may be applied for moving of ships. This engine may be tried for an hour or more, together with some one made after the Saveryan method. The quantity of the effect should be computed, both by the quantity of the water driven out of each machine; and by the

* Tredgold on the Steam Engine, p. 15.

height the said water could ascend to. And to know, the said height, we should use the method advised by the illustrious president, viz, to try to throw bullets by the said engine with the inclination of forty-five degrees, and reckon that the said height is half the horizontal distance to which the bullets will be driven, and this would be the rule as well for one as for the other machine.

“ I wish I were in a condition to make the said Casselian engine at my own charges, but the state of my affairs doth not permit me to undertake it, unless the Royal Society be pleased to bear the expense of the vessel called “retort” in the description printed at Cassel: but after that I will lay out what is necessary for the rest; and I will be content to lose that expense, in case the contrivance of the Landgrave of Cassel doth not cost as much again as that of Esq. Savery. But, in case the effect be such as I do promise it, I do humbly desire that my expense, time, and pains may be paid, and I reckon this to amount to fifteen pounds sterling: because, as I said, the state of my affairs doth not permit me to undertake the thing otherwise. If the Royal Society be pleased to honour me with their commands upon such conditions, the first thing to be done is to let me see the place where the machine must be set, and I will work for it with all possible diligence, and I hope the effect will yet be much greater than I have said.”*

It is melancholy to think, that experiments of consequence were in those times, checked by the want of funds for carrying them into execution, and that such a sum as fifteen pounds should have been considered, in the present instance, as an important obstacle. The Society, also, seems to have had a difficulty in coming to any decision on the subject; for on the third day of meeting, the proposal was referred to the president, Sir I. Newton, who at the end of a fortnight made his report upon it. Everything from his pen has a value, especially when, as in this case, it affords a good instance of that sound caution with which he always sought for truth in the results of actual experiments. I have copied it as follows:

“ If the pump proposed by Dr. Papin, can spout out 400lb. of water, every other second minute,† with the swiftness of 128 Paris feet in a second, it will spout it up 100 yards high, or cast it to the distance of 200 yards upon level ground, and do this thirty times in a minute. Whether this can be done is to be known only by experience; and if it can be done, I do not see but that such a pump may be successfully applied to several uses, as the making artificial fountains, to the draining of water out of trenches, morasses, mines, &c. in difficult cases, and to the towing and moving of ships and galleys, by the recoil of the engine and force of the stream duly applied. But the force and uses of the engine must be learned gradually by trying

* Register of R. S. vol. ix. p. 108.

† Minutum secundum—second.

the simplest and cheapest experiments first, and reasoning from those experiments."

No record has been found of any such experiments, and it is probable that they were never made. The expression used by Newton seem to indicate that the propelling force was to be exerted by a stream of water, ejected from the stern of the vessel,* a method but ill-adapted for giving motion to a boat which had another to be drawn after it; but of this we have no particulars, and the whole discussion seems to have turned on the power of the engine. If that could have been established, no doubt seems to have been entertained of its being applicable to the intended purpose.

With this view, Capt. Thos. Savery addressed two letters to his friend Dr. J. Harris, author of the "Lexicon Technicum," which were read before the Royal Society in May 1709, and copies of them are preserved in their Register. They state the objections to Papin's contrivance, and show that it was totally inadequate to the great and rapid effects to be produced by it. Nothing, however, is said in them on its application to the motion of paddle-wheels, which makes their contents less intimately connected with the present purpose: and there may be a future and a better opportunity for discussing them. They contain some particulars that illustrate the personal history of Savery, and although his name has long been known, and never can be forgotten, very little about him has been handed down to us, and of that little, some parts are entirely erroneous. Endeavours therefore will be made to collect these scattered notices into something of a continuous narrative, and to add what other particulars can yet be discovered in reference to him. They cannot, of course, after the subject has been now neglected for more than a century, be numerous, but from his connection with the original invention of the steam engine, they may form a sequel to the present communication.

It must be remembered also, that in those early days the valves were all opened and shut by hand; Savery, therefore, argues conclusively to the impossibility of such an engine as Papin's continuing to work with the rapidity which was promised; and he says, "I fear that there are not many men so miraculously nimble, as to continue the repetition of what would be necessary, in each succeeding second of time;" which yet Dr. Papin plainly proposes.

This paper of Papin and Savery's letters never having been published, the only writer that has been found to be aware of them, is Mr. Farey, who mentions their contents in his elaborate treatise on

* In 1730, Dr. John Allen published a short work in 4to, entitled, "Specimina Ichographica, or a brief Narrative of several new inventions and experiments, particularly the navigating a ship in a calm." His plan, which he imagined to be entirely new, was to propel the vessel by a stream of water which was to be ejected from its stern, and for this purpose he thought of the use, which might be made of the steam engine. (p. 36.)

the Steam engine.* He likewise notices† a still earlier proposal of Papin for the same purpose, in the *Acta Eruditorum* for 1690. Mr. Farey gives a good account of it in general, but it will answer better for our present object, and be possibly more satisfactory, to translate the whole passage in which the advantages are stated which might be derived from this use of his engine.

“Perhaps,” says Papin,‡ “it would be tedious to enlarge on the methods, by which this force [of steam] may be applied to draw the water and the ore out of mines, to throw iron balls to the greatest distance, to propel vessels against the wind, and for many other similar uses. Every one, as occasion may require, must devise for himself that form of the machine, which will be best suited to his purpose; but I must in general point out the many ways in which this force would be preferable to that of common rowers, for giving motion to ships at sea. 1. Common rowers add considerably to the weight of the vessel, and so far impede its progress. 2. They take up much room, and in that way become a burthen to it. 3. It is not always that the necessary number of them can be procured. 4. Whether they are labouring at sea, or resting at port they must be supplied with food, which creates a great additional expense. Our tubes on the contrary, are of very little weight, occupy no great space, and could, if manufactories of them were once established, be always easily obtained in any required quantity: the expense afterwards would also be confined to the time when they were at work, and would be no more than the value of the wood which they consume. Common oars, however, could not be conveniently employed in this way, and it would be necessary to use for this purpose, those of a rotary construction, such as I remember to have seen at London. They were affixed to a machine made by direction of Prince Rupert,§ and were set in motion by horses, so as to produce a much greater velocity than could be given by sixteen watermen to the Royal Barge. Without doubt, oars fixed to an axis, could be most conveniently made to revolve, in this manner, by our tubes. It would only be necessary to furnish the piston rod with teeth, which might act on a toothed wheel properly fitted to it, and which, being fixed on the axis to which the oars were attached, would communicate a rotary motion to it.”

It may be observed, that in this, as in the paper which Papin afterwards submitted to the Royal Society, he particularly alludes to the projection of balls by the force of steam, and from this, we perceive that the idea adopted by Mr. Perkins, and so curiously exemplified in his steam-gun, had occurred, and had probably (although to a limited extent) been carried into execution, much more than a century before. The most remarkable part, however,

* P. 110.

† P. 98.

‡ P. 412.

§ In 1680. See Macpherson's *Annals of Commerce*, vol. iii. p. 597.

of the last quoted passage, is the great usefulness of the object which Papin contemplates in it. In the detail he fails. He seems to have thought of fixing his oars independently of each other, as radii from the central axis; and this form had occurred to others, although it certainly wants the firmness and mutual support, which is obtained by fixing the boards upon the paddle-wheel, which is now in use. Again, toothed wheels will never stand for such violent action; even Watt, when he first applied them to producing a circular motion from the alternate rise and fall of the beam of his engine, and adopted the beautiful contrivance of the sun and planet motion, very soon found it necessary in practice to abandon them. Besides, Papin was a man of a different character, whose talent lay rather in speculations on ingenious to combinations, than in the mechanical power of carrying them into execution on a great scale.

We have thus, from authentic sources, traced up the suggestion of steam-navigation to the original time of the engine, on which it depends—at least, as far as that era has been generally understood; and we now add an account published within these few years, which carries it back to a period, which was never before contemplated.

In 1831, there came out, "A year in Spain, by a young American," in which the following remarkable passage occurs.*

"It appears from a late valuable publication, Navarete's Collection of Spanish Voyages and Discoveries, that the first known experiment of propelling a vessel by the agency of steam, was made at Barcelona. Singular, however, as the fact may be, it is fully established by various documents lately found in the archives of Simancas, and is so circumstantially stated as to be incontrovertible. It appears, that in the year 1543, a certain sea officer, called Blasco de Garay, offered to exhibit before the Emperor Charles V., a machine, by means of which a vessel should be made to move without the assistance of either sails or oars. Though the proposal appeared ridiculous, the man was so much in earnest, that the Emperor appointed a commission to witness and report upon the experiment. It consisted of Don Enrique de Toledo, Don Pedro Cardona, the treasurer Ravago, the Vice-Chancellor Gralla, and many experienced seamen. The experiment was made the 17th June, 1543, on board a vessel called the Trinidad, of 200 barrels burden, which had lately arrived with wheat from Colibre. The vessel was seen at a given moment to move forward and turn about at pleasure, without sail, or oar, or human agency, and without any visible mechanism, except a huge boiler of hot water, and a complicated combination of wheels and paddles. The assembled multitude were filled with astonishment and admiration. The harbour of Barcelona resounded with plaudits, and the commissioners, who shared in the general enthusiasm, all made favourable reports to the Emperor, except only the treasurer

* Vol. I. p. 49, note.

Ravago. This man, from some unknown cause, was prejudiced against the inventor and his machine. He took great pains to undervalue it, stating, among other things, that it could be of little use, since it only propelled the vessel two leagues in three hours, that it was very expensive and complicated, and that there was great danger of the boiler bursting frequently. The experiment over, Garay collected his machinery, and having deposited the wooden part in the Royal Arsenal, carried the rest to his own house.

“Notwithstanding the invidious representations of Ravago, Garay was applauded for his invention, and taken into favour by the Emperor, who promoted him one grade, gave him 200,000 maravedies, and ordered the jealous treasurer to pay all the expenses of the experiment. But Charles was then taken up with some military expedition, and the occasion of conferring an inestimable benefit on mankind, was neglected for the business of bloodshed and devastation, while the honour, which Barcelona might have received from perfecting this noble discovery, was reserved for a city which had not yet started in the career of existence.”

The very little intercourse, which formerly existed on scientific subjects, makes it not impossible that even a magnificent invention, like this, may have sunk into oblivion. The “Quarterly Review,”* in a recent number, describes the author, (Captain Slidell of the American Navy) as a writer of “good faith;” and there always is an impression, that no one, with any claim to respectability, can ever be so utterly regardless of truth, as seriously to state a circumstantial tale without some foundation for it. The same account was also inserted in the “Literary Gazette for 1827;† but the critical examination of the question must be left to those, who have the advantage of being acquainted with the Spanish language, and have the opportunity of examining the original authorities, on which the statement depends. The Catalonians, indeed, were always the most enterprising people of the Peninsula; but the machinery, necessary for the effect here described, seems to be beyond the age in which it is said to have been constructed, and it is difficult to persuade oneself implicitly of its existence.

S. P. RIGAUD.

A RAMBLE AMIDST THE ROCKY MOUNTAINS OF SOCOTRA.

By *Lieut. J. R. Welsted, F.R.S., F.R.A.S., &c.* Author of
“*Travels in Arabia.*”

(Read at a late Evening Meeting of the United Service Museum.)

CIRCUMSTANCES connected with my public duties, while engaged in a maritime survey of Southern Arabia, induced me to wander for two months over this solitary and almost unknown island. It was reported

to be equally insalubrious with the eastern coast of Africa, off which it lies ; but I slept in caverns, on rocks, and under trees, during the whole period, without my own health suffering to any considerable extent. It may, however, be observed of travellers in general, that, while on the move and under the excitement of a variety of successive objects passing before them, they rarely fall sick, while, should the same individual remain stationary in an insalubrious district, irritation of mind, from delay or other causes, but too frequently predisposes and effects such a result.

I know not a more singular spot on the whole surface of the globe than the Island of Socotra ; it stands forth a verdant isle in a sea, girt by two most inhospitable shores, yet its wooded mountains, its glens, its sparkling streams differ not more from their parched and burning deserts, their bleak and wasted hills, than do its mild and inoffensive inhabitants from the savage and ferocious hordes by which they are traversed. Strange, too, as is the anomaly of 5,000 people, all split into different tribes; and existing without laws or government ; yet offences against the good order of society appear less frequent than with even the more civilised nations of Europe. My pursuits and researches were certainly calculated to excite suspicion with a bigoted or ignorant people, yet I met with no interruption on my former visit, although journeying alone without any other protection than the good feeling I might excite in my progress.

I learnt, upon a visit some months after that here alluded to, that it was anticipated a British force would soon occupy the island, and I, therefore, became exceedingly anxious that some spot should be looked for which would answer for the transmission of their invalids. Now Europeans attacked by tropical disorders are, if the elevation is sufficiently considerable, very generally restored to health by a residence on mountainous tracts. Such a ridge, many of its points elevated 5,000 feet above the level of the sea, rises close over the town of Tamarida, the station it was proposed the force should occupy, and appeared at once to answer admirably for such a purpose. I had on my previous visit examined them but cursorily, but I now determined by a residence thereon for several days to set the matter wholly beyond doubt.

My preparations were soon made : the necessary instruments for meteorological and other observations, a small gipsy tent to protect me from the dews at night, and my cloak, were all I cared to provide myself with ; for provisions I depended upon what I could obtain on the mountain. My only companion was John Sunday, a Nubian boy, who had been the sharer of my wanderings for years ; his history is somewhat interesting.

I was fond of leading him to discourse on this, his country, and his friends. He preserved a distinct recollection of his father's hut, and the various articles of furniture within it, and of the kindness of an

old village priest who taught them the Koran. They subsisted principally by hunting; and it was in one of these excursions, when about twelve years of age, that he was kidnapped by some of his own relatives, and sold to a slave-dealer at Berber, on the Nile; hence he was driven across the desert twenty days to Suakin, a port in the Red Sea. At this period it was considered advisable to man the East India Company's vessels of war partly with Africans, and he was accordingly manumitted and received on board: his figure was tall and thin, but well proportioned: he had the crisp and curly hair of the negro, without his flattened nose or thick lip; on the contrary, his features were regular and pleasing, partaking more of the Abyssinian than the negro cast.

By the wish of the sailors, like Robinson Crusoe's man Friday, he received his *sobriquet*, John Sunday, from the day he came on board: and, in their opinion, furnished an additional reason why he should be speedily made a christian; but this was not so easily done: he was as wild and active as a goat: for some days it was impossible to convince him but that he was destined to be eaten, and he had an especial horror of the boatswain, who to a most capacious mouth added a truly formidable range of teeth; he had but to expand the one and display the other in a grin, and off the poor little fellow would scamper, and take shelter in some obscure nook in the hold, from whence it was impossible for some time to dislodge him. As he had accompanied the caravan the whole time on foot, his condition at first was very miserable, but for some time he refused food under an impression that we were merely desirous of rendering him better fitted for our epicurean palates. When he got rid of this, by perceiving that we persisted in eating as other people did, he gradually acquired our habits, was taught to eat with a knife and fork "like a Christian," as his now particular friend the boatswain said, and at length to the sailors' great delight was taught to take the half allowance of grog, which boys in a vessel of war are always permitted to draw: for some time, however, I am afraid that this gradual violation of the Temperance Society rules of his countrymen was a source of more gratification to the boatswain's friends than himself; for, when he first took charge of Sunday, it was observed by those malignant persons, who are over-desirous of peering into the actions and affairs of others, that the notes of his pipe after meals, before he called all hands, were richer, more mellifluous, more lengthened, terminating with a smarter flourish, than before; all of which, however, in proportion to Sunday's increased capacity for relieving his friend from the painful duty of swallowing the pernicious poison, gradually declined to their former simple severity. Pork he manfully resisted for some months, nor did he ever take kindly to it; the noise it made in frying used to surprise and disgust him; he never would remain near it if he could escape. I am not surprised at this aversion, arising as much from reli-

gion as from the deep-rooted aversion to the swine all must imbibe who have only seen it in the east; there it is a tall, gaunt, half-famished, and half-ferocious-looking brute, which performs the office of scavenger.

After he had in some measure mastered the colloquial of our language, myself and brother-officers amused ourselves with teaching him reading and writing: on most points his progress and comprehension were on a par with the mere European, excepting in the power of figures, which he could never be made to understand on paper; but set him to make a bargain, however complicated the details, and it very soon became apparent, his talents were not to be despised.

He attached himself at an early period to me, and has accompanied me on journeys for many hundred miles. In sickness, in health, in danger, or in privation, I ever found him the same brave and faithful creature. I had but one fault to find with him; his desire to save me from being fleeced, got him frequently into scrapes with the natives; no reasoning with him could prevent this. One of the grand secrets in successful travelling in the East is to permit yourself to be cheated with your eyes open. Sunday often spoke with much feeling of his mother, his sisters, and other relations he had left behind him; and I have then inquired of him, if he was desirous of returning to them? He always replied, despondingly, that if they had escaped the same fate as himself, which he feared they had not, the difference in their religion would prevent them from ever receiving him. He once met a fellow-villager in Egypt, but was so ashamed at having fallen from the faith of his fathers, that he could not muster courage to speak to him, and inquire into the fate of all those he still held dearest. Those who have sought to degrade the African below the ordinary level of the human race, describe them as possessing the social relations in but a weak degree. My own experience enables me to give a decided negative to such a position, for in this respect I should place them far above the Asiatics.

To return from this digression. On the morning of the 10th January, 1835, we quitted the vessel, and two hours' brisk walking along a shepherd's track brought us to the base of the mountains. The atmosphere was so close and sultry, that I was bathed in perspiration, and received with much thankfulness a bowl of milk which some Bedouins tendered to me. Imagining I should suffer from the cold as much as themselves, they laughed at the idea of my passing several days there, and predicted that the morrow would find me on the plains. I gladly, however, accepted the offer of two of their number, who tendered their services to act as guides and carry the tent, which had been brought thus far on the back of a camel.

We ascended by Wadi Aiuf, a precipitous and rugged glen, very

narrow, and thickly wooded. The soil was a rich dark loam, nourishing a great variety of beautiful flowers. After two hours' hard fagging, climbing in many places, and holding on by the roots and branches of trees, we halted about 3, P.M. under an impending rock. A few minutes before we did so, I was very nearly bitten by a snake which the natives call Java, and the bite of which, they say, proves mortal in the course of a few hours. It had, apparently, just gorged a bird or some reptile, for it was lying in a half-torpid state, partially coiled round the branch of a tree, which in colour it so nearly resembled, that though my hand was nearly touching the head, I did not distinguish it. Sunday, more quick-sighted, did; and I drew my hand hastily away as it was rearing its head. We killed him. It is singular, much as my wanderings put me in the way of meeting with snakes, and numerous as they are described to be on this island, yet, this is the only occasion in which I have been put so nearly in contact with them.

What a delightful and grateful change, from the over-heated and sultry atmosphere below, to the coolness and invigorating freshness of these regions! Seating myself on the verge of a precipice overhanging the valley, I gazed on the scene around. Every object, after being so long accustomed to the naked, arid scenery of Arabia, was novel and interesting. I have travelled much amidst the mountain scenery of that country, of Persia, and of India, but that of Socotra, in wildness and romantic grandeur, surpasses all. The sun at this early period of the day was sinking beneath the Western Mountains, and their shadows already obscured the lower portions of the glen; the clustering foliage, clothing portions more elevated, was yet warmed by its golden beams, which, partially obscured by the trees under which I was seated, then agitated by the wind, fell in chequered and variegated light around us, while many and beautiful tints illumined the rugged and pinnacled summits of the naked granite spires which tower above all. On the opposite side of the glen a clear and sparkling stream holds its wild and sportive course, here peeping forth from beneath the foliage, glowing and quivering in the sunbeams, or there hurrying forward to lose itself for a brief space in the clear blue pool beneath. On that craggy pinnacle above, where, at this distance, it appeared difficult to conceive that the foot of man could have found a resting-place, is perched a shepherd, his figure standing out in bold relief against the blue vault of heaven. His voice alone breaks the stillness of the scene, the peculiar shrillness rendering it distinguishable from afar, while his flocks, in obedience to his call, are perceived wending their serpentine course down the almost perpendicular face of the mountains.

When daylight had ceased to soften the picture, I rejoined Sunday, who was busily employed cooking, after the Socotran manner, a kid, which had a few minutes before been brought by a Bedouin: the

bones were first removed, and the whole mass was then thrown into an earthen pot. Some rice, in addition to this, formed an excellent meal, to which the whole party sat down. Sunday and myself, at first, with the advantage of our knives, held the lead, but were soon compelled to relinquish it; our best were but puny efforts, compared to those of our rivals, who did not desist until they had cleared the board. The capacity of these islanders in such matters is indeed prodigious, and they often expressed surprise at the far smaller quantity of food which sufficed us. In the evening I accompanied the new comers to their cave, which was situated a short distance further up the mountain. Abundance of fuel was at hand, and a blazing fire soon reared its cheerful flames before us. As these rose, red and flickering, and in fantastic wreaths to the roof, it lighted up a wild and romantic scene. The irregular surface of the projecting masses in the interior of the cave stood forth in bold relief, while the lofty arched roof, and numerous caverns more retiring and remote, were lost in the deepest gloom. Nor was the interest of the scene lessened by the appearance of my companions, whose half-naked figures, plaited hair, and peculiar marked and expressive countenances were also in savage keeping with the rest of the picture. Some of the party spoke Arabic, and I was in consequence able to converse with them. I was most anxious, since they had been in pretty constant communication with the English for some time, to know what they thought of us, as contrasted with other visiters. Their reply was a very simple one: "You always pay for what you receive, and never maltreat us, or our females, as the pilgrims and others who have touched here did before you; so that we, who at first always fled at your approach, no longer do so, but bring our sheep, as you have witnessed this evening, and eat them with you." I observe that more than one foreign traveller in the East has brought a charge against the English, that they are repulsive and imperious in their demeanour towards the Asiatics, and are consequently, hated by them. This is just one of those sweeping clauses which sounds high, and has just enough of truth in it to allow of its occupying the attention, until we reason or examine the grounds for such a position. No European can be liked in the East; both the Hindoo and Mahomedan religions forbid it; but, let it be asked, what other European nation has been more successful than ourselves in obtaining their good wishes? The Dutch, the Portuguese, the French—they were severally in power in India. Were they then loved more than ourselves, or than they are now at Java, Manilla, and Algiers? Had the English been in possession of the latter city as long as the French, I think our relations, with the Bedouins which surround it would have been different, and that we should have been able to have shown ourselves without the walls without the certainty of being shot at from every bush. Admit that the manners of my countrymen are not the most bland

and conciliatory in the world, to what high moral *attributes* and principle are we to ascribe the superior regard and consideration an Englishman enjoys in those countries over most other foreigners? "I observe this difference between an Englishman and any other Frank," said a merchant once to me in Cairo; "I believe the word of the former, I do not that of the latter. When another Frank owes me money I am anxious to get it paid, for I am convinced he will not do so until he is absolutely obliged. With an Englishman, on the contrary, I feel no anxiety, for he seeks me out and seems uncomfortable until my debt is discharged." We may laugh at an Englishman squandering his money in other parts of the world, but it is not inconsistent (considering their relative positions there) with oriental notions in these countries.

After remaining talking with these simple people until a very late hour, I returned to the rock under which we had first encamped. Sunday wrapped himself in his cloak and was soon asleep. It was a lovely evening, the moon "hung imminent," and shed its flood of splendour over the naked spires above and wooded glens beneath. Not a breath of wind was stirring: the stars shone forth gloriously. I spread my cloak on a rock, and, wearied at length with the events of the day, slumber stole over me; dreams of home and friends whom, after an exile of fifteen years, I was about soon to rejoin, mingled with the forms of those I had just quitted, and I slept throughout the night without interruption.

January 11th.—Refreshed by the purity of the air I had breathed in my slumbers, I arose at an early hour, and, after bathing in one of the clear and sparkling pools below, I continued my journey up the mountain.

The foliage was, if possible, more dense than at the lower part of the glen, and I had still considerable difficulty in some places to make my way; in others the path led along the brow of a precipice, and was partially cleared for the convenience of the cattle which occasionally cross over this part of the mountain. The morning air was keen and cold, and impregnated with many agreeable odours from the numerous aromatic shrubs and flowers which grew around. Rock-doves and other feathered choristers added their wild and plaintive airs to the tinkling of numerous streams, or the hoarser cadence of some louder and more distant fall. At an elevation of about 4,000 feet we arrived at a sunny sloping plain, verdant as an English meadow: several sleek cows were feeding around. The day was clear and cloudless, and we obtained a magnificent view of the greater part of the island, although we had not attained the highest point of the range for a ridge, about 500 feet more elevated was behind us. Yet this appeared well adapted for my purpose; accordingly I selected a spot which was sheltered in some measure by an impending rock, where I pitched the tent, and resolved for the pre-

sent to make it my head-quarters. I found, however, before I had been here long, that the wind swept over the mountains with such violence that a tent was wholly useless, and I determined therefore to employ a few of the natives to collect stones and build a rude hut similar to their own. By the next day I had a very snug little room about six feet square every way, and the tent spread outside prevented the wind from making its way through. I passed my time delightfully here. I had nothing to do but to wander forth during the day, collect flowers, sketch, or take my gun.

PLYMOUTH BREAKWATER, TENERIFFE, BAHIA, AND THE CAPE.—
Longitude.

H.M.S. Beagle, 18th Nov. 1837.

MR. EDITOR,—As all ships by a recent order, rate their chronometers by sights taken on Plymouth Breakwater; some part of it should be specified, and its correct longitude ascertained, particularly as the longitude given in the present charts, is not, strictly speaking, correct. To this point, I have turned my attention, and have connected a stone marked $\frac{230}{1}$ with our former observation spot, (in the meridian of government house,) and this stone I consider in 16m. 33·4s. to the west of Greenwich. It is one-third of the length of the Breakwater from the east end, and as the stones are numbered, there can be no difficulty in finding it. My meridian distance from it to Bahia, by way of Teneriffe, place Bahia in 2h. 34m. 3·9s. west, and by both measurements, last voyage, it was 2h. 34m. 4s. Again, my meridian distance to this place (Simon's Bay,) gives 1h. 13m. 55·3s. for the longitude of the observatory, and by the measurement last voyage, it was 1h. 13m. 54·8s. The close agreement of these determinations merits confidence in my longitude of the consul's house at Teneriffe, which I make 16° 14' 31" W. that is, 1' 30" east of Arlett, in the Etna.

J. L. STOKES, Lieut. R.N.

ROSS'S ANCHOR.

Topsham, Devon, 22nd May, 1838.

MR. EDITOR,—The testimony of so many individuals to the merit of Rodger's narrow-palmed anchor, in your highly useful and interesting Magazine, induces me to forward you a plan and description of an anchor, invented by me, which has been considered a great desideratum, particularly in stiff holding ground. During the last war, it was my fate to pass several winters in the Downs, and the difficulty of getting the

anchor in bad weather, in consequence of the immense quantity of clay brought up with it, (sometimes as much as four or five hundred weight,) and the frequent occurrence of driving, during heavy gales of winds, caused me to turn my attention to the means of supplying a remedy, which I think I have succeeded in, by the form of "Ross's Triangular Palm Anchor,"* which, I have no doubt, will be found to answer the purpose very well. It is obvious that the sharp angle on the inside of the palm will immediately, on the anchor being tripped, divide the clay, and cause it to fall off, by which means the weight of the anchor alone will be brought to the purchase; in the next place, the narrow palm, and extra weight of metal it contains, will cause it to hold better in bad ground, and, in the event of the driving, will be more likely to catch again than the anchor now in use; these are some of its advantages. To time, use, and an enlightened nautical public, I leave it for the development of its other good qualities. The manner in which it is stocked for small craft will be found more convenient; the collar, nut, and pins being certainly neater, and better than the forelock and turned end; whilst the increased length of the arms, and the intrents given to them, will be found a decided improvement. A beautiful model will shortly be deposited in the Adelaide Gallery, made by Mr. Ananias Moore, a talented anchormith and chain-cable maker, of this place, who has been extensively employed in those branches of his business, where judgment and mechanical skill are so highly essential. Several nautical men who have seen the model are decidedly of opinion that it will answer in the fullest degree, the expectation of the inventor, who begs to subscribe himself

Your obedient servant,

F. W. L. Ross.

I have seen "Mercator's" letter, and hope he will consider this plan as an improvement on the old as well as new anchors.

PROCEEDINGS OF H.M.S. SULPHUR, IN THE PACIFIC OCEAN.

HAVING been so far successful at San Blas as to obtain supplies of provisions sufficient to last us to the Sandwich Islands, we started from Cape San Lucas, intending from thence to take a good departure, to insure our making Socorro, so as to determine the meridian distance between them. We experienced strong breezes from the S.W.; and the Starling, Lieutenant Kellett, having dropped beyond our ordinary superiority over her, it became necessary either to take in half our canvas, or take her in tow. The latter was decided on, as her presence in the

[* We do not consider it necessary to give a plan of the anchor, as the principal feature which distinguishes it from all others, consists in the palm being loaded with iron, rising from it in a wedge-like form, and thus forming its *triangular* shape.—
ED. N. M.]

examination of the places where islands have been reported to exist, was deemed of importance.

On the 16th of June, we were off Cape San Lucas, with a heavy swell, and heavy, hazy atmosphere. Wind chopped round to east gradually, edging from E.N.E., until it settled at N.W., our rate, with Starling in tow, 8.2. On observing the direction of the prevailing wind, which we called the "deck breeze," with that of the superior current, as indicated by the clouds, while the former was from W.N.W. to N.W., we found the latter was from N.E., in the morning, until late in the afternoon, when it gradually set to the S.E. by the north. On the 18th of June, we had reached a position to the westward of Socorro, and our time being too valuable to lose, the Starling was directed to take route which would intersect ours, in 137° W., and she was directed to make the islands reported to exist to the northward of Clarion; to pass half a degree to the northward of us, in 130° W., and then, by a W. by S. course, to cross our track (as well as that of the Blossom) in quest of the various islands assigned to that region; eventually rejoining us at Oahu. On the following morning, we expected to meet with Best's Island; but the sun failing us the preceding day, our latitude was in error. At noon, our course was directed for its position, as laid down on Arrowsmith's chart. At four, we passed over it, and shortly after saw Clarion Island, broad on our weather bow. By night, we had brought its eastern limit on our meridian, and by the sun from the time it was first seen, its position, according to Bauza, appears correct. On approaching the region about Socorro and Clarion Islands, the sea was observed to be peculiarly abundant in molusca, sea-weed, and other indications, similar to that on the coast, all of which almost abruptly ceased the day after we passed the latter. On the 26th June, we passed the meridian of 130° in lat. $16^{\circ} 30'$, without observing any appearances of land, or other indications of its vicinity; the weather was squally, which is sometimes caused by the vicinity to land, although it is no guide.

At daylight, on the 7th July, we saw Mowee, (cloud-capped,) and the base outline of the N.W. extreme of Owhyhee shortly after. Our course carrying us close past Mowee and Morotoi, (and within sight of the breaker line,) afforded us many very beautiful and interesting views. The clouds, covering the summits of the mountains, evidently furnished an abundant supply for the cascades formed by their precipitous faces, varying from one hundred to five hundred feet, in their leaps, some appearing like a silver thread. The rapidity, also, of our passage rendered the changes of perpetual interest. By midnight, we were close in to Oahu, and heaving to for daylight, reduced our sail to close-reefed topsails. On the dawn appearing on the morning of the 8th, we bore up for Honolulu, passed Diamond Hill, about 5.30, and by six, had our pilot on board. The wind, however, was too fresh to enter, and we anchored in the fairway, for the tide of the

next day, our captain landing to secure observations for meridian distance.

Our reception at the capital of the Sandwich Islands, particularly by the English and American consuls, was extremely gratifying, and the general feeling at our arrival at this most critical period, called forth from all the foreign residents more than an ordinary greeting; as since the 20th of the previous May, no dependence could be placed on any act of the government, and mercantile affairs were consequently stagnant. This proceeded from an abuse of power on the part of the government, in forcing on board of the British brigantine *Clementine*, two French missionaries, who had been banished by Rahamanu, from this place, in 1831; but hearing of the treaty effected by Lord Edward Russell, in the *Actæon*, and relying on the interpretation of the first article of it, had returned in the *Clementine*; had been suffered to land, and after the vessel had changed owners or masters, and discharged cargo, had been ordered to quit in her. The refusal of the master to make a prison-ship of his vessel, or to subject himself to a prosecution for taking them away, contrary to their consent, induced the government, on the 20th May (they having landed on the 17th of April) to force them on board—only because they were Catholics, and inimical to one of the English missionaries, too well known for comment. The master, to avoid bloodshed, abandoned his vessel to the government; hauled down his colours, (which the consul, in the heat of passion, burned;) withdrew his crew, and entered his formal protest for damages. Our captain, being officially informed of the transaction, and the whole case being laid before him, the result of it was, that as neither the governor, nor the attendant chiefs, prompted by the missionary, could be brought to any reasonable feeling, the recapture of *Clementine* was determined on, and she was dispatched to Marie for the king; and the French missionaries were relanded. In this affair, the English missionary becoming warm, and evidently endeavouring to excite the chief to resistance, he was deliberately told, “that for every drop of British blood that might flow, he would be made responsible,” and immediately made a prisoner. It was fortunate, before it became necessary to carry this threat into effect, that the *Venus*, a French frigate of 60 guns, and 540 men, (2,000 tons,) commanded by Captain du Petet Thouars, anchored in the harbour. One of the parties being French, and the insult being considered as offered to his country, the interference of the French frigate was requested, and that their captains should act together. Nothing, however, resulted beyond the original determination of our captain, and this was carried into effect before sunset. The two missionaries, (landed by a French boat,) escorted by the officers of both vessels, with all the white residents, and crowds of natives, rejoicing in the act, were safely returned to their former domicile; and the *Clementine* departed, under her national colours, to the resi-

dence of the king, and shortly returned with the king's answer, that his majesty would be present so soon as Adams, governor of Hawaii, could arrive to accompany him.

On the 20th, the king accompanied by his Mosquito fleet arrived. His yacht is an old American ship, not considered trustworthy beyond the range of these islands. She mounts fourteen small guns, and has a crew of one hundred and sixty men. The Starling, with her one gun, would be about a match for her, although the king talks highly about "my corvette that swims!" On the following day, at noon, Captain Thouars, accompanied by his officers, joined us, and we proceeded together to the expected conference with his majesty. The various officials of the government were all in state, but the king wore only a round jacket, with a crown embroidered on the collar. After the usual ceremonies and civilities had passed on meeting, business was commenced by the naval officers decidedly objecting either to the interpretation or presence of the English missionary, but the latter point was conceded, after consideration, and it required some degree of watchfulness to stop the signals which he attempted to make to his party to influence their proceedings. The whole day was expended to no purpose. The French captain was for entering into too many particulars, instead of maintaining the single point that, until his countrymen could provide, or be provided with a passage, to some civilized port, they should remain unmolested. The conference was adjourned until the following morning, when it was recommenced, and all the irksome, tedious forms of proceeding, as on the former day, were gone over again. The result of the second day was, that the king and his government consented to the French missionaries' stay, until they could obtain a passage to some civilized port. But they resisted the legal interpretation of the essence of Lord Edward Russell's treaty; but before we departed, we obtained a formal document, acceding to the interpretation demanded, viz.: the literal reading, according to the established custom of the laws of nations. All things being thus settled, we sailed from Oahu, on the 24th July, at four o'clock; as cattle and fodder would be more easily embarked at Atovi, where hopes were entertained of completing our crew, from that of a whale-ship wrecked on Christmas Island, (waiting to be conveyed to Oahu.) The consul accompanied us, to look after them, and after a cordial cheer to the Frenchman, in return for his salute, we parted, hoping to meet again at Sitka, Nootka, or Monterey, he being bound for Kam-schatka, loosed sails about an hour after us, but we parted company during the night. At 4, the following day, we arrived at Hanalac, a port on the north side, which the consul assured us afforded not only a better landing, but deserved to be known. In this he was right; and during our short stay of two days, two boats were employed making such a survey as the time would permit, sufficient for all common purposes of navigation. The cattle were, indeed, very fine, quite equal to those

of Leadenhall market, and any vessel of war touching at these islands should go there to embark them. The beef is wholesome, a treat which we had not before met with on the Pacific side of Cape Horn. Even the water is better there than at Oahu; the stock plentiful and cheaper; and, to sum up all, it is a "sober harbour," no grog to be had, and clandestinely obtained by the crew. The harbour is unsafe during the bad season, when the north-westers set in; but a Russian vessel rode it out one whole season, by mooring close in. The Starling was dispatched two days before to Whymeea Bay, the customary resort; but Lieutenant Kellett's report was unfavourable, the landing unpleasant, unsafe, surf dangerous. At the Port of Hanalac, the landing is as good as at Honolulu, within the mouth of a river, the depth for several miles up sufficient for canoes, and at a few hundred yards within it boats may be filled from alongside.

On the 27th, we took our final departure from the Sandwich Islands with a fine westerly breeze, but were soon compelled to take the Starling again in tow. After reaching lat. 33° and long. 166° , we were ten days teased with calms and variables, and only reached 167° W. As the weather on nearing our destination continued thick for several days, and the sun was only seen at short intervals, much delay was anticipated in obtaining our observations, it was considered prudent to despatch the Starling to Port Mulgrave. This was effected on the 17th August, near the island called Rose, or Middleton's Island, but which, on the large scale chart of Vancouver is entirely omitted. On the 21st we had made little progress, and the sun at noon (being the first for many days) showed our position to be far in error. We steered a course between Rose and Montague Islands, to secure a landfall on either side. The current was found to set easterly. The wind not admitting of our passing northerly to Port Etches, we shaped our course southerly, intending to fix the position of Rose Island. About sunset, while taking angles to it, breakers between us and the south point of it were seen, and our depth decreasing from 44 to 15 fathoms, with ripples close to us, obliged us to haul off southerly. Light winds during the night kept us in the neighbourhood, and the wind being foul at day-light, we determined on attempting to secure this position by observing on terra firma. For this purpose the Sulphur was anchored in 15 fathoms, about three miles from the nearest point. The current now showed itself, and we had the means of determining accurately its force and direction. A landing was easily effected, and we were able to obtain observations, but before noon rain put an end to our hopes, and we again embarked while the breeze was freshening from the northward. Many dangerous patches were found by the boats employed in the survey, but none beyond three miles from the S.E. side of the island.

The breeze freshening fast, compelled us to leave our anchorage about 7, but not before we had hooked three fine halibuts: one

escaped, but one we succeeded in shipping by help of harpoons, &c. It weighed 146 lbs., and the smaller being kept for the officers, the crew had a fresh meal. It was observed for the first time since some of us had been at sea, that Jack appeared grateful! and certainly relished the change. On the 25th, at dawn, the magnificent ranges of snowy mountains of North America were before us unclouded; the breeze was fair, and we were nearing our port (Etches) rapidly. Hopes, however, were too high. Before 8, the breeze failed us, and we were tantalized by one of the brightest and clearest days which a northern hemisphere produces. The feeling, too, that this would not last, that we could not reach a landing place, was an additional grievance. Before night, however, we had rounded Cape Hinchinbroke, and anchored off it. As our soundings were suspicious, an officer was despatched to look for Port Etches, but the darkness and force of current compelled him to await twilight, when we weighed and worked into the port, anchoring near the position alluded to by Vancouver, but nearer to the mouth of the inlet in seven fathoms. The Russian resident visited us and endeavoured to persuade us to enter the port, but as our stay was not to extend beyond the day, we remained where we were. A gale from N.E. ensued, which brought down the gullies of the mountains, some of those gusts which are so frequent in the vicinity of high land, traversed by deep gorges; and our anchor coming home, compelled us to let go a second. We did not succeed in completing our observations until the 29th, and on the 30th, quitted for Wingham Island, our observations agreeing with Cook's within four miles, and being 50' west of Vancouver. During our delay the port was surveyed, and at one station which has since been found is Portlock's "Garden Island," the identical tree was discovered, bearing the name of his ship, and date, as described in the account of that voyage. Our feelings may be easily conceived. The sight of this token of one of our predecessors, and particularly of one of our own countrymen, in such a remote, inhospitable region, was like discovering an acquaintance. But sacrilege had been nearly and inadvertently committed. The tree had been ordered to be felled for a mark, and the axe was raised, when the inscription was observed on its surface, and the barbarous stroke was stayed. It was much decayed, almost gone, and one blow of the axe would instantly have shaken to dust the pieces preserving the inscription. All the letters, however, were complete, and a faithful copy taken. The island was named by our commander "Portlock Island," a name which the most fastidious would consider correctly bestowed.

The winds, weather, and currents, put an end to all our anticipations of obtaining observations at Wingham Island, and delayed our reaching Point Rio, which was our next intended position, until the 4th September, when we were compelled to anchor in 50 fathoms, some distance off shore, or drift back all we had gained the last day

or two. Here, however, we succeeded in obtaining such a series of observations as must satisfactorily assist in fixing Mount St. Elias. The day following, we were induced by a light breeze to take a closer view of Icy Bay, and search for Point Rio and the Island. At noon we tacked in 10 fathoms, having passed through a body of "brush ice," but all of a soft nature. We now found the whole bay and immense valley above it, lined with "snow ice," about thirty feet in height, and apparently based on a low muddy beach, on which the sea did not even curl. The bergs or raft masses forming the cliffy outlines of the bay were veined and variegated by mud-streaks, so as to present the appearance of veined marble. The base of the point which we took for Vancouver's Point Rio probably remains, but merely shows as a mud spit on which some small icebergs were grounded; no island was traced, and it is fortunate that we obtained observations where we did, as we had no facilities here. Vancouver's ideas as to this great and slightly elevated plain appear very correct, and it may be doubted whether the coast line remains the same for any five consecutive days. It seems, in fact, to be as changeable as the sea.

After a few tacks amongst the ice, and keeping as near to the shore as the depth would warrant, we succeeded in gaining a little on our course, and before dark we were once more favoured with a fair wind, which carried us into Port Mulgrave by the next morning. Here we found Lieutenant Kellett, in the *Starling*, anxiously awaiting our arrival, (with his boarding nettings triced up,) the natives having been troublesome and numerous beyond his wishes. But our arrival put an end to all this; and as soon as our observations were completed, we started, intending, as the wind favoured us, to make either Port Althorp or Sitka, as might be, in time for the quarterly magnetic and meteorological observations. Fortunately, we were enabled to reach Sitka on the 12th, and Her Majesty's ship, the *Sulphur*, was the first foreign vessel of war that had ever entered the port. We found the Governor (Captain Koupricoff, lately in command of the *Azoff*, in the Black Sea) most attentive to us; his English was very good, as we found out by the first specimen which he gave us. This was no less than a request that Captain Belcher would consider himself in command, and order what he wished done without losing time, which must be valuable to him, in unnecessary compliments. *He acted up to this*; and the days spent at Sitka, were among the most pleasant and most useful of our voyage.

We found here, much to our surprise, a *complete* arsenal. Our wants would as readily have been met as in any foreign yard of our own; but, as might be expected, the articles were expensive, and we limited our wants to actual necessity. The establishment is that of a Russian line-of-battle ship, but the soldiers are chiefly invalids. The transit instrument was fixed, a few moon culminations had; the quan-

tum of magnetic and meteorological data filled up; in addition to which, the Governor most kindly gave us the observations taken by the large diurnal variation needles, (by Gamby,) supplied by their government, as well as some special observations taken to exhibit the disturbance by Aurora. Their meteorological observations taken by the priest, were also given to us; we have enough from this quarter to render it a place of call of some interest, should our track lay in this direction. We had full permission to survey, erect marks, or the Governor would do it for us; and actually went to some expense to place a staff on the leading rock. We were also assured of a pilot to take the ship through into Chatham Straits, if we wished; but time compelled us to give up that plan. It was now too late to stand the chance of getting out from hence in bad weather, and Nootka and Colombia yet awaited us. After experiencing the most extraordinary kindness to the last moment, and receiving presents of specimens of natural history from the Aleutian, Fox, and other islands, the Governor paid us a visit on board at nine o'clock. Finding that we intended to start at daylight on the following morning, as soon as our commander had taken his leave, the Governor's secretary again boarded us, bringing salmon, vegetables, &c. On the morning of the 27th September, we quitted Norfolk Sound, with an uneasy motion, which proceeded from our rudder, and which alarmed us for our chronometers; the motion, even in a calm, being enough to destroy the rates of the best chronometers in existence. On the 5th October, we beat into Friendly Cove of Nootka Sound. It is about one-third of a mile across in the broadest part, a complete basin; and if means were taken to secure them properly, no doubt five or six vessels might ride safely. The village of Nootka in this bay, where the natives repair in great numbers in summer, to cure salmon, gives the name to the sound. At the period of our visit, they had all retired to the interior settlements, of which Tasheis is still the chief city, as in the time of Vancouver. The natives shortly thickened around us, and the chief Macquilla was selected by chance to communicate with us, owing to the decided superiority of intellect in the features of himself and family. From what we could collect, these Indians have withdrawn from Nootka in consequence of its unprotected position, where the guns of vessels, they say, do them harm; and they endeavour to show that many wanton outrages have been committed by ships touching here. Astoria had just fallen into our hands, and added greatly to the interest we took in conversing with them. Macquilla took a great liking to us, and we on our part were much pleased with him. He was excessively urgent to get our commander to visit Tasheis, where he could show him proper attention; and he evinced more gratitude than is commonly found among any of the tribes we met. Every morning a salmon came off for the captain; and until the last day no one knew who was the

benefactor. He was almost on the point of quitting us in a pet, because we did not barter for skins; and eventually sent his headman to say, "that he was off for Tasheis." Duty had hitherto interfered, but we bought several skins, and he then took up his encampment for the night, and saw us off in the morning. At times, during our stay, the weather was very rough, and we had three cables out in different directions, lest the wind should chop round, and put us on the rocks. A slight survey was made of the anchorage; but in taking leave of this place, we did so with a most gloomy sensation at what we found it, and what Vancouver pictured it, when it was a bone of contention between two such powers as Spain and Great Britain. Not a vestige of a house, battery, or other European structure exists; nothing but the stupendous frames of the log-houses of the natives, which appear as freaks of fancy, without any earthly use, and which are still kept up; the logs appearing to have been placed at no distant period; probably two or three years. Even on the spot where the fort stood, no vestige of mortar, or building-stone could be found; all was bare rugged rock, or overgrown with briars. The Indians showed us where the houses stood, where the cross was erected, and where the potatoes grew; but every vestige had disappeared, although the state of the soil was excellent, and the weeds which grew thereon flourished luxuriantly. This, the more extraordinary, as the natives now cultivate the potato, and in many places bring them off for barter. They are said to be very fine; they are good at Sitka.

On the 9th of October, we took leave of our Nootka friends, with the intention of touching off the Bar of Columbia to ascertain our chances of entry. Bad weather ensued, and altered our project to that of making the shortest passage to *San Francisco* where we might over-haul the iron-work of the rudder, and get a slight refit in hull and rigging. The *Starling* stood on towards the *Columbia*, but hauled off without sighting it, rather than risk bad weather on a lee-shore.

On the 19th we made Punta de los Reyes. The wind failed, and we did not enter the *gates* of *San Francisco* until 9h. 30m. Knowing this place, we had no hesitation in entering at once, instead of tormenting all hands outside during the night. The moon helped us about 10, and before midnight, the ship was moored in *Yerba Buena Bay*. We expected from the war of independence, which was going forward, to have been hailed from the fort; but all was silent as the tomb; we fired a gun, to make the vessels at anchor show lights, and this was the only notice given of our arrival. This port has retrograded sadly during the last ten years. Authorities there are none; missions taken out of the hands of the *Padres*, and administrators appointed. The mission is robbed, and squeezed to the dregs by the existing government, lest to-morrow may see another

in power. The Indians, neglected, rove about, follow the vices of their masters on a more daring scale, carrying off cattle, clothes, and *in malice* sometimes children! The Delaware Indians, with a pass from the United States, (hunters) had leave to hunt two years on these territories: the time elapsed, their chief left them, and returned. The party taking a new chief, and a liking to the ground, have become *independent*; being well armed riflemen, they enter, rob, and plunder, and the cowardly Californians have not spirit enough to combine and force them away, or punish them. Lately they entered the mission of San Luis, at mid-day, took away every horse the mission owned, (then in the corral,) pointed a rifle, desired the *Administrador*, to keep out of its range, and deliberately drove them off. It is as well to observe, that without horses, the cattle are useless, they stray and cannot be recovered. Possibly 8 to 10,000 head of cattle, (the remains of 200,000, the rest killed off for money for the war,) were thus lost. The number of horses is said to be from 1000 to 1500; and these animals, which will scarcely sell for forty dollars in 1827, would now fetch 100 to 150. Martinez, spoken of by Captain Beechey, lost all his horses, (*sixty prime*,) with every article of linen belonging to his family, by the desertion of his *own Indians*. It is said, they are too severe in their treatment of them: this state of affairs will soon reduce California. A new war, one of *extermination*, will arise, and the Indians will be slaves, worse than they now are. Indeed, this is already expected, for there is a party of Kentuckians here, who enlist every English or American into their ranks, and will eventually be the lords of their country. It is true, this people have cancelled their independence, and declared themselves subject to Mexico again, but it is well known, that Mexico cannot help herself, and some authority must put a stop to the present crisis. The Spaniards are very anxious to get English or Americans amongst them, to supply their own want of courage, and defend them from the Indians, hence two whalers have lost half their crews, (Americans,) and have sailed in despair to endeavour to replace them at Oahu. The military commandant being informed of the place of concealment of six of them went out to apprehend them. He found them armed, and one with great coolness, pointed to his musket, and "advised him to go home to his family," which he thought very prudent advice, and accordingly followed; such is the law here.

While we lay at San Francisco, a party quitted the ship for the purpose of exploring the Rio Sacramento. The information concerning it was very contradictory, and it was determined that the *Starling*, as a point to fall back on, should accompany us to the farthest (conveniently navigable) limit. On the 27th, being then 35 miles N.E. of the Obo, and the pilot asserting we could take the *Starling* no farther, we took to the boats, and on the 30th, at sun-set, had

reached the Fort of the Sacramento, in lat. $38^{\circ} 46' 46''$ N.; long. $47' 28''$ E. of Obo. Finding no further progress could be made in the boats, and understanding, (as since confirmed by the Rocky Mountain hunters,) that this is *the ford* crossed by the Americans in their hunting expeditions; the further examination was abandoned, and on the 31st we commenced the survey down the river, a distance computed by us on the serpentine lines of stream, not under 150 miles. From this extreme point, we had a fine view of the *Sierras Nevadas* in all their majesty; the source, doubtless, of this magnificent stream, carrying water thus for the *Sulphur*! The natives at the Fork, Walolks, would not communicate with our civilized Indians, although they used every endeavour to get them to answer. They fled, leaving behind about a dozen bags of acorns, which they, no doubt, were curing for winter consumption, as well as most of their implements. Although our Indians were inviting them to friendly intercourse, they were also keenly on the look-out for anything they could filch, and but for our interference, would have made prize of all, purely, no doubt, in the spirit of conciliation. The magnificence of the country throughout its whole course is *unimaginable*, not to be conceived. It is, in fact, a splendid park, extending about forty miles north, from lat. $38^{\circ} 3'$ through twenty degrees of long. In no instance is the soil raised more than thirty feet above the level, and it varies generally from ten to twenty. The sides of the river are wooded within 200 yards of the edge, and consisting generally of stupendous trees at the water line—of ash, willow, and poplar: the ash, frequently overpowered by the vine, contains a large supply of wild grapes. The interior trees consist of immense oaks, averaging from seven to eight feet in diameter, and one of this diameter ascended sixty feet without a limb! Walnut and chesnut abound on the *Park Land*, covered generally with high oat grass, wild and ever springing, (on which the deer and elk feed,) with clumps of oak, as if planted for ornament. In some parts, the eye may wander over thousands of acres, covered with nothing but grass, and relieved only in the distance by the trees showing the bends of the river, the *Sierras Nevadas*; or our friends nearer home the *Sierras Bolbonese*. Ducks, geese, elk, and deer, are numerous; and salmon, mullet, sturgeon plentiful in the river. A mullet and a curious sucker were taken with the hook, the latter was preserved in spirits.

The survey was found of a tougher nature than we anticipated, compelling us twice to dispatch a boat for fresh supplies of provisions, and at times reducing us to scanty fair. The water, however, of the Sacramento was almost in itself meat and drink, otherwise we could not have completed. On the 16th, we rejoined the *Starling*, and soon after reached the ship, heartily fatigued.

On the 30th November, we left San Francisco, not without

having lost eleven men and boys by desertion, and on the 2nd December anchored at Monterey. Unfortunately for the underwriters, but fortunately for us, an American whaler had been wrecked on the 18th of October preceding, which enabled us to complete our wants from her stores saved; we therefore obtained beef, pork, and flour, with a small quantity of bread and spirits, to last us for three months. The *Venus*, Capt. du Petet Thouars, had shortly before sailed for Monterey and San Blas. On the 6th, we quitted Monterey, and having information of an island in lat. $24^{\circ} 9' N.$, long. $112^{\circ} 39' W.$, we steered a direct course on the parallel of Shelvoe's Island, (Shovel, of Bauza,) and thus obliterated it from the chart. We reached San Lucas, or Tres Marias, on which we landed, obtained observations, and made a survey of East Bay, George's Island, thence proceeded to Isabella Island, San Blas, where we arrived on the 21st, just in time to save our meteorological and magnetic observations.

Naval Chronicle.

MONTHLY GOSSIP.—There is an establishment, Mr. Editor, in our great metropolis, to which I am anxious to direct your particular attention, as well as that of your readers, and indeed all who desire to see the honest hardworking poor relieved from the grasp of the monopolizing rich man. It is one which has been but very lately formed to meet an evil, now increased to a fearful extent:—I mean the impositions to which the *coal-whippers* of London are subjected in their present condition. In my June letter,* I briefly alluded to the praiseworthy exertions of Lieutenant Arnold, R.N., and, with your permission, I will now more fully state their case. The cargoes of colliers arriving in the Thames (now amounting to about eight thousand annually) are cleared by gangs of these coal-whippers, amounting to nine each; the appointment and employment of which, it appears, have long been monopolized by certain landlords of public-houses on the banks of the Thames. The coal-whipper seeking work, must first have the good-will of the landlord, and it is found that he is successful in proportion to his custom! For instance, if he drinks hard, he is not long out of work, and it is an established rule that his daily supply must first be spirits, then beer, all of which, whether wanted or not by him and his gang, are sent off, as a matter of course, to the vessel in which they are employed. But this is not all;—the evening must be passed at that receptacle of vice, the public-house of his employer, in expending a portion of the day's earnings. He is, moreover, charged half-a-crown per week, as lodging money, though he may never sleep in the house; he has to pay for baskets, planks, and tools, about three shillings per man, for every ship that is cleared, felicitously called "tow-row money;" in addition to which as much as five shillings per week is exacted from him, called "bad score," being a surcharge on his amount for liquor during the week; and however he may be convinced of the imposi-

* See page 415.

tion under which he is labouring, he must be silent, or forfeit his employment.

Now, the evils of such a system are manifest. Setting aside the temptation to which he is thus subjected, of giving himself over to a habit of intemperance, it is clear that, if he have a family, they are deprived of his wages, perhaps abandoned to misery. Lieutenant Arnold, with a most laudable desire of counteracting this evil, has taken up the cause of these unfortunate men, and has opened an office to give them employment, and the wages of their labour, free from the impositions of the publicans, and the temptations which they hold out. I am glad to tell you that several influential gentlemen, seeing the importance of his exertions, have encouraged him with their assistance and support, in order that the earnings of these men may be applied to the maintenance and comfort of their wives and families. I understand that application has been made to shipowners in the north of England, to consign their ships to Lieutenant Arnold, who gets the work performed twenty per cent. cheaper than the publicans. His office is No. 29, Great St. Helen's, where further information on this important subject will readily be given.

In my last, we had scarcely recovered the intoxicating effects of the coronation:—well, we are all cooled down again, excepting, I believe, the scientific part of the community, called the British Association, now revelling in the luxuries of their annual ambulatory meetings at Newcastle, where, it is said, they are gleaning fresh adherents, and fresh friends, to be employed in the cause of science. You know we have done with Marshal Soult, and all that kind of thing; the veteran found us proof to the last. His old friend, Sir Robert Otway, finished him with a splendid affair on board the Howe, in return, at least, for the attention he had received from him at the Tuileries; if not to ensure the departure of the Marshal with the same good opinion of us which he had received throughout his visit. Well, if the Marshal knew us in war, he has now known us in peace, and of his new acquaintance he has, at all events, reason to say, "*J'en emporterai l'impression la plus vive et la plus durable.*"

But I was speaking of the *Corps Scientifique* Mr. Editor, at Newcastle, where they are to meet on the 20th of August, and where they have gathered the sinews of labour,* or in other words, materially added to their numbers and funds. I shall not have space, I fear, to give you but a brief account of their proceedings in my next, but I may here say, that they promise to be of the most interesting kind; the progress of science in all its branches will be developed, and there will be an exhibition of the models of philosophical instruments, and produce of national industry, which, independent of the foregoing, must prove highly interesting. Inventions of course, will have their place, and this leads me to one or two things I have heard of lately.

As for Mr. Hoe's instrument or apparatus, for determining latitude and longitude at sea, or, as he intends to call it, "*Sherwood's Magnetic Geometer,*" I have not seen it, nor do I anticipate much from it, if magnetism is to be employed in determining longitude. However, I shall be ready to acknowledge myself wrong, if he can show me that

* It is stated that 1,000 local members are newly enrolled, and more than 2,500 obtained by local subscription.

I am so. There is a new mode of lighting under trial, I perceive, in the north-west light vessel at Liverpool, stated to be superior to the usual mode by oil lamps, and at a third less expense. It is called a *liquid gas*, manufactured by Mr. Seward, and is to be further applied to the Formby light vessel, and also to the Rock Light-house for trial. Another very important invention also has appeared, called *prepared compressed fuel*, on which experiments have been made at Woolwich dock-yard, under the superintendence of Mr. Ewart, Her Majesty's principal engineer, the grand object of which is to reduce the expenditure, as well as the expense of the fuel at present in use for steam-engines. In importance, this invention is one of vast magnitude. It is composed of "screened coal," (or dust,) river mud, and tar, and is formed into blocks. The saving is proved to be very great, and in point of stowage, it will be equally desirable for sea. Mr. Oram, who is the patentee of this fuel, will, I hope, give some account of it in your pages. I have heard that the invention is not entirely new, the same having been done some years ago by a Mr. Clarke, of Newport, in the Isle of Wight, and only abandoned on account of an unpleasant gas which it gave out, but I have no doubt Mr. Oram has overcome this difficulty. Then again, there is a *sheathing felt* for ships, patented by a Mr. Wells, which is said to possess advantages both of efficiency and cheapness, which are fast bringing it into use. I think the recommendation* which I have just given to Mr. Oram, will equally apply to Mr. Wells for the benefit and advantage of these gentlemen, as well as the community at large. A French naval officer, (M. Bechameil,) has invented a *mast for steam-vessels*, which he can set up or take down in less than two hours: it consists of spars capable of being joined together, and made equal in strength to solid masts. A vessel it is said is fitting with it, destined for a voyage to Rio. Perhaps our steam companies had better look after this, as it would evidently be desirable when going head to wind to dispense with the masts of steamers. Talking of steamers, the Great Western, I see, is getting on as usual, and the Sirius is turned over to the Baltic. On the 1st of August, she commenced running to St. Petersburg, where she will have smoother water than she had in the Atlantic. No doubt Mr. Editor, the large vessels make better weather of it than the small ones, and hence the success of the Great Western over her competitor. By the bye, a meeting of the company owning this vessel, was held the other day, (16th July,) at Bristol, at which the accounts were read, from which it appeared that the prospects were so good, that after setting down the returns of the first voyage to the cost of the vessel, the actual profit on the two others has been sufficient to admit of a very handsome dividend to be declared on the 6th of September. No wonder that capitalists of London and Liverpool are striving to get into the market.

But in the way of inventions, of which we were just now speaking, I have omitted to tell you of a recent one by a *Mr. Arthur Wall*, the purpose of which is to protect the *copper sheathing* of vessels. You are aware that Sir Humphry Davy applied the principle of galvanism with the same object, by bringing copper into contact

* We have always been ready to devote our pages to the diffusion of useful knowledge, and shall be equally so with regard to these inventions.

with zinc, by the action of which latter, oxydation he thought would be entirely prevented. His process, however, failed. That of Mr. Wall's is said to be anti-galvanic, and the copper protected by his process, resists corrosion or the adhesion of any of the usual produce of sea water. Mr. Wall, it is stated, has made his experiments principally in the West Indies, and further experiments are going forward under the direction of Sir John Ross, which it is to be hoped will be found in your pages.

It is said that the Commissioners appointed to decide on the limits of the oyster fishery at Jersey, have concluded their labours, and recommended that a line at one mile from the French coast be adopted. This is, however, most inconclusive, as on some parts of the coast the tide ebbs out above a mile. The question naturally arises then, is the line to be distant one mile from the coast at high, or low water? as it involves the whole affair on which so much squabbling and even bloodshed has taken place. The Commissioners I have no doubt, have settled all this; but I shall look into it and let you know.

So, because there has not been enough for our authorities to do in Canada with the rebels, some of our seamen at Quebec must turn mutinous, to add to the difficulties of the new Governor-General, Lord Durham. Verily, Canada doth present at the present moment anything but a gratifying picture! There will be something to do in the western district yet, if the various reports of the landings of the patriots on our frontier be correct. The great meeting held at Sandwich on the 9th of June, the capture of the American steamer General Macomb, and our St. Clair frontier generally, hold out some ominous appearances that all is not over there.

But with regard to British seamen at Quebec, it appears that the provision so very properly made for each ship arriving to bring away her own seamen, was set at nought by the desertion of the crew of the ship Ruby, in May last. No exertion of the captain or mates, it appears, could prevent their adopting the common practice of lowering their chests and bedding into a boat, amidst threats and the most brutal language—too common among seamen. Four, however, of the principals are lodged in gaol, to undergo trial on the charge of mutiny.

Turning from seamen to the masters of ships, I have not seen a more important document lately, Mr. Editor, than the report of the Sunderland Marine Board. This institution, the proceedings of which, if I mistake not, have been already referred to in your pages, I am happy to say, works well, and is likely to produce the most beneficial results. It has now been in operation one year, and the report says that "numbers of young seamen of the port of Sunderland, who, previous to the establishment of the Marine Board, were inattentive to their own improvement as mariners, have witnessed the success and promotion of many of their companions, and, sensible of their own deficiency, have betaken themselves studiously to improvement, and during the past winter, the various nautical schools in the town of Sunderland were well attended with such pupils; many of them have already made considerable progress in the use of figures and navigation, and have received the approbation of the officers with whom they sailed for their maritime skill and assiduity. The spirit of emulation, so promoted by the Sunderland Marine Board

has also tended much to improve the moral habits and general intelligence of the seamen; and many of those whose leisure time was formerly spent in dissipation, now engage themselves in rational amusement and profitable instruction. This is gratifying intelligence, Mr. Editor, and it is much to be lamented that other great ports do not follow the example of Sunderland. Many of our merchant captains know their deficiency full well, even to the *transports* which are taken up for her Majesty's service. But let us console ourselves that the good cause is progressing, and that the *Nautical Magazine* does its part in pointing out the evils to be remedied.

Well, the grand question has been decided between the public and the Hull steam boat company. The Coroner's inquest, which has been so long sitting and adjourning, has at length concluded, and the verdict of the jury has been delivered. The foreman is stated to have expressed the feelings of these gentlemen, when he said that he had never found himself in a more difficult situation! no doubt—as it would be a difficult matter indeed to please all parties, and what he had to say was not calculated to do so. The jury, it appears, (who have done their duty nobly,) were unanimous in their opinion that they never saw a vessel fitted up with greater splendour and taste than the *Victoria*, or with greater attention to the convenience of the passengers; and that they never saw a vessel in the river fitted up with so little regard to the comfort of the engineers and stokers who worked the engine. In fact, it was a perfect Pandemonium! Such was the opinion of it at least, and the verdict was as follows, "That the death of Andrew Brown was accidentally occasioned by the explosion of the boiler on board the *Victoria* steam vessel on the 14th of June last—that the construction of the boilers was *unsafe*, the water spaces too small, and the plates too thin; that the engineers having no immediate control over the safety-valve in the engine room, is highly reprehensible, and the jury levy a deodand of Fifteen Hundred Pounds on the boiler and steam engine of the *Victoria*." A similar verdict, it appears, has been given for the whole eight cases of lives lost on this occasion, in all of which the jury were unanimous; but the deodand is not repeated for each, as the property on which it is levied can only be once forfeited. The Coroner congratulated these gentlemen on their proceedings being closed, (well he might,) and thanked them for their attendance; and the public, he might have said, are deeply indebted to them for their very protracted and laborious services. The Coroner's labours, however, were not to be so soon concluded, as he informed them that a writ *de certiorari* was then put into his hands by Mr. Jacobs, the solicitor of the Hull Steam-boat Company, removing the proceedings into the Court of Queen's Bench, on the complaint, it is said, of excess of damages, the result of which I shall inform you.

I am happy to say that the *American government* has at length passed an act authorizing the appointment of persons to test the usefulness of inventions to improve and render safe the *boilers of steam engines* against explosions. Three persons, it appears, will form this committee, to be appointed by the President of the United States; but how their fitness for such an important position is to be ascertained does not appear. One at least is to be a man of experience and practical knowledge in the construction of the steam-engine, and the others by reason of their attainments and science shall be compe-

tant judges of the usefulness of any invention designed to detect the causes of explosion in boilers. Well, as I said before, who is to judge of their attainments in science, does not appear; but let us hope they will put an end to such accounts as I find in your last number under the name of "American Steam-boats," and at all events, that they will put down small water spaces and giant furnaces! They will then do some good. So much for steam-boats and steam engines; but before I turn to other subjects, let me add that while some persons have turned their attention towards doing away with the chance of deposit in the boilers, an apparatus for cleaning them out without stopping them from work, appears to be making its way into use. The Great Western is fitted with it, and also, a Dublin vessel, the *Duchess of Kent*: and Dr. Lardner, I find, has been at work for the British Association in producing a tell-tale or self-acting register of the state of every part of the working machinery and boilers. I have not, I fear, space sufficient to describe it here, and it may be as well, perhaps, before I do so, to wait the result of experiment with it. The object is to record, by pencils working on paper, the performance and state of the engines, boilers, and revolutions of the paddles every hour during the voyage.

There is a Captain Taylor of the Navy, said to have produced an invention to lessen the force of waves, and applicable to all buildings exposed to them, adding, of course, to the safety of harbours and anchorages. I hope to find some account of it in the *Nautical Mr. Editor*, as I have not yet met with it elsewhere.

And now to other matters. In my July letter, I mentioned the loss of the *Rapid** in the Mediterranean. The court-martial held on the officers and crew, acquitted them with the exception of one seaman, who was dismissed from the service, and forfeited his pay for using insulting language to his commander, a short time only previous to his untimely end. There is a case of intrepidity on the part of an officer of the *Pelican*, that well deserves recording, and which, with your permission I will relate to you. The vessel, it appears, was cruising in the Bight of Benin, and going eight knots, when a seaman fell overboard, who, but for the bravery and devoted heroism of Mr. Bates† a mate of the vessel, would no doubt have been drowned. This officer immediately sprang after him, and succeeded after being half an hour in the water in rescuing him from his perilous situation. They were both picked up by a boat. I perceive the Humane Society has awarded a silver medal to Mr. Peacock‡ for an act of this kind, which I alluded to in my June letter: Mr. Bates' heroism will, it is hoped, not go unrewarded. The old *Camden* which I told you was sent to the Pacific, was spoken at sea on the 2nd of June last, in lat. 24°, and long. 32°; but I am concerned to say, that pirates are about in various parts, and several of our merchant vessels have been boarded and plundered. Let such vessels as the *Camden* take care. I perceive that the government of the Sandwich Islands are determined on keeping Popery from their soil, if we are to judge by the law just issued there. "The peculiarities of the Catholic religion," says Ramehameha the third, "and the proceedings of the priests of the Roman faith, are calculated to set man

* p. 488

† Son of the late Commandant of *Ascension*.

‡ p. 411.

against man," therefore he utterly refuses to allow those *peculiarities* to be taught in his kingdom. Who shall say that the King of the Sandwich Islands is wrong? In my opinion, Mr. Editor, this is the most sensible edict yet issued by any prince further removed from the lamentable condition of man in his savage state than these poor islanders are, whose graven images are yet scarcely destroyed. Why should the peaceful proceedings of the Missionaries be broken in upon by the schism of another church, and that of all others, the church of Rome! But I must depart from this subject, or you will say I am forgetting my nauticals.

It may be interesting to your readers to know, that the expenses of blowing up the William and Glamorgan, by Colonel Paisley the other day, amounted altogether to 384*l.*, and that the gallant Colonel has been presented with the freedom of the City of London in a gold box, the value of which is fifty guineas. In the way of presents too, I see that Captain W. Norwood, of the General Steam Navigation Company, has been presented with a gold medal by the Emperor of Russia, for rescuing some of his subjects from shipwreck on the Hinder Bank, in November, 1836. The sum of 40*l.* was also given to be distributed among the crew of his vessel. I perceive that a correspondent in your last number, takes a correct view of that pilotage bill which I alluded to in my August letter, but with regard to the Cinque Port pilots, you have misunderstood my meaning. The usual allowance for the vessel having a steam tug *cannot* be deducted from the pilotage to the Cinque Port men as is done with river pilots. It is hoped, that this will be looked into. I may, in a future number, illustrate the subject with a case or two in point. In the way of pilotage and tonnage, your readers, who trade to Demerara, should know that a duty of one shilling and tenpence per ton has been lately imposed on all vessels entering that port above the burthen of seventy tons. But the affairs of trade and commerce in the western world look dull—the Mexican blockade by the French, is casting gloom over the land, and that of the ports of Callao, Chorillos and Ancon by Chili, are by no means calculated to extend it in that quarter. Let us hope, however, for better accounts, and console ourselves with the active energy of our countrymen at home, where improvements are steadily progressing.

Your devoted,

ARGUS.

POLYTECHNIC INSTITUTION, 309, REGENT-STREET.*—With pleasure we record the opening of a new school of science in our metropolis, named the "Polytechnic Institution," which commenced its career by a liberally extended private view, on Friday, the 3rd of August, when many persons of distinction in rank and talent were present. Since the Monday following, it has been open to public inspection. It was a novel species of gaiety to witness the lively bustle and excitement of the company at the display of Nature's wonders exhibited on a scale of striking magnitude; while these excited interest, the operations of the diving-bell produced much merriment, in the effort of courage required to take the plunge;—the eager inquiry of the ladies booked for the succeeding dip;—the hesitation, and the expressions of

* And No. 5, Cavendish-square.

hope and fear, as those inquiries were made of their companions who had braved it. As, however, the machine is of ample power; is well supplied with fresh air, and holds from four to five persons; and as the gentlemen were not so ungallant (whatever their qualms might have been) to permit the ladies to dive alone, *courage* prevailed, the *diving bell* was in great demand, and the *diving belles* were warmly greeted by their friends on relanding, with their satin shoes, even untouched by the splashing element.

The only inconvenience in descending is a slight sensation of pressure in the ears. Many persons do not experience this, but the majority do; and it is extraordinary that much greater effects are not produced, for as the pressure of the air within the bell is increased about six pounds to every square inch on the surface of the human body, this increase of pressure will amount to about three tons. Yet it seems easy to carry on its circulation, and other functions, as well under this additional load as it does under its ordinary daily load of eight tons, at fifteen pounds to the square inch. This fact is quite unperceived, and astonishes those who have not before calculated it. The popularity of the diving bell forms a good illustration of the uses of the Institution. The simple principle of keeping things dry under water, which every child is taught to practice, by stuffing a glove into a wine-glass, and then inverting it to plunge the mimic bell, is here merely carried out to its full extent and use, and thus, by enabling men to inhabit, and perform their labours, in the bosom of the vast ocean, it becomes an object of lively interest, and worthy of serious attention.

It is evidently the object of the directors of this Institution to spare no expense in carrying out the plan by which they have proposed to elucidate the laws of nature to their full extent. The *Hydro-Oxygen Microscope* is probably the largest ever constructed, and being made by Cary, is a sufficient guarantee for its excellence; indeed, an examination of its powers is quite enough to secure the admiration of this instrument. We are glad to see it applied not only to the investigation of minute natural objects, but in rendering colossal, and apparently solid, those copies of antique statues, now existing only on their engraved gems. It is remarkable how well these minute works of ancient art bear inspection in this magnified form. The celebrated head of the Medusa nearly fills a twenty-four feet disc, yet the perfect symmetry of that beautiful countenance is fully preserved. The apparent solidity of this huge bas-relief is very surprising; many tons seem here "like the baseless fabric of a vision," to be conjured up by optical delusions, from an impression of the original gem, about one inch in diameter.

The savage fights of the water lion, water tiger, water devil, &c., are shown on a larger scale than ever; but although we may thus become better acquainted with the savage nature of these eternally-devouring monsters, yet the larger they appear the more horrible they seem; and Nature has done well to place them on a scale of being too minute for our optics, that through human prejudices we may not be disgusted at her works. The bloody combats of the wild beasts and gladiators in the Roman Amphitheatre would now disgust us, and the suffering exhibited by the prey of these diabolical insects, thus elevated into horrible monsters, is appalling. Man has, however, so insatiable a curiosity, that he even wishes to dive into

the mysteries of other planets besides his own, and even a pseudo-peep at the inhabitants of the moon, lately awakened great curiosity. Perhaps this insect state of eternal warfare may considerably resemble the earlier periods of our own world, when those huge reptiles of the slimy deep had it all to themselves. Fortunately for us, through Divine Providence, these are now fossilized, and as firmly fixed in the rock as if they had been that Medusa's head, of which the gem we have spoken of, is the classical representation, and where the artist, by the aid of simile, has made beauty alone the quality that fixes and rivets us to stone.

When noticing this Institution, we must not omit to observe, that it has done all due honour to the wooden walls that have so long defended, and which will ever defend our sea-girt isle. Through the laudable liberality of some gentlemen of the Admiralty, a most complete and accurate set of models, of both English and French vessels are here exhibited, with all the appurtenances of wet and dry docks, launching slips, &c., built according to scale from those in our dockyards. Also, all the working models of the celebrated block machinery made by Mr. Brunell, and now used in the Government dockyards. Ships of war and docks could not be exhibited on their proper scale, but, luckily, they admit of being understood and lectured upon from correct models, even more conveniently than on their real scale of magnitude.

The reflection of sound and heat are matters of every day experience, but these are here exhibited on the largest scale, and become interesting and surprising from this cause. Certainly it seems to contradict our daily experience, to see meat cooked by reflection from a fire at the opposite end of such a gallery; and it seems equally strange to hear the whispers of our friends from the same distance. We must not, however, attempt to enumerate the various instruments, implements, and curiosities that surround us in this institution, and we must conclude our present notice by stating, that the information conveyed in the morning lecture, on the properties of water as a ponderous fluid, embracing all the principles of hydrostatics, and the uses of it, as a gross element of vast extent over our globe, was a subject well chosen by Mr. Addams, and as well elucidated by experiment as it was eloquently explained by reasoning.

This was followed up, in the evening, on the composition and chemical qualities of the same element, by Mr. Cooper, Jun., who is a young man of great promise, if we may judge from this effort; we have seldom heard the subject better handled, or more completely explained by experiment, although the time occupied was limited to a single hour. Similar lectures are, we believe, delivered every day. This institution cannot fail to sow the seeds of sound knowledge; it will be the fault of the public if they do not cultivate them, and in due time bring forth fruit. No description of ours can convey an adequate impression of this varied collection of interesting matters. It must be seen to be appreciated; but we felt inclined to blame the directors for not having provided a catalogue to explain every object exhibited, so that each man might indulge his own taste in selecting those most interesting to himself, and we trust that, by this time, they will have made good this obvious deficiency.

TABLE XXXV.

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

1 Roman foot = 0·9773669864 English foot.

1 English foot = 1·0231571292 Roman foot.

Roman, or English feet.	English feet, and Dec. parts.	Roman feet, and Dec. parts.	Roman or English feet	English feet, and Dec. parts.	Roman feet, and Dec. parts.	Roman or English feet	English feet, and Dec. parts.	Roman feet, and Dec. parts.
1	0·977	1·023	40	39·095	40·926	79	77·212	80·829
2	1·955	2·046	41	40·072	41·949	80	78·189	81·853
3	2·932	3·069	42	41·049	42·973	81	79·167	82·876
4	3·909	4·093	43	42·027	43·996	82	80·144	83·899
5	4·887	5·116	44	43·004	45·019	83	81·121	84·922
6	5·864	6·139	45	43·981	46·042	84	82·099	85·945
7	6·842	7·162	46	44·959	47·065	85	83·076	86·968
8	7·819	8·185	47	45·936	48·088	86	84·054	87·992
9	8·796	9·208	48	46·913	49·112	87	85·031	89·015
10	9·774	10·232	49	47·891	50·135	88	86·008	90·038
11	10·751	11·255	50	48·868	51·158	89	86·986	91·061
12	11·728	12·278	51	49·846	52·181	90	87·963	92·084
13	12·706	13·301	52	50·823	53·204	91	88·940	93·107
14	13·683	14·324	53	51·800	54·227	92	89·918	94·130
15	14·660	15·347	54	52·778	55·250	93	90·895	95·154
16	15·638	16·371	55	53·755	56·274	94	91·872	96·177
17	16·615	17·394	56	54·733	57·297	95	92·850	97·200
18	17·593	18·417	57	55·710	58·320	96	93·827	98·223
19	18·570	19·440	58	56·687	59·343	97	94·805	99·246
20	19·547	20·463	59	57·665	60·366	98	95·782	100·269
21	20·525	21·486	60	58·642	61·389	99	96·759	101·293
22	21·502	22·509	61	59·619	62·413	100	97·737	102·316
23	22·479	23·533	62	60·597	63·436	150	146·605	153·474
24	23·457	24·556	63	61·574	64·459	200	195·473	204·631
25	24·434	25·579	64	62·551	65·482	250	244·342	255·789
26	25·412	26·602	65	63·529	66·505	300	293·210	306·947
27	26·389	27·625	66	64·506	67·528	350	342·078	358·105
28	27·366	28·648	67	65·484	68·552	400	390·947	409·263
29	28·344	29·672	68	66·461	69·575	450	439·815	450·421
30	29·321	30·695	69	67·438	70·598	500	488·683	511·579
31	30·298	31·718	70	68·416	71·621	550	537·552	562·736
32	31·276	32·741	71	69·393	72·644	600	586·420	613·894
33	32·253	33·764	72	70·370	73·667	650	635·288	665·052
34	33·230	34·787	73	71·348	74·690	700	684·157	716·210
35	34·208	35·810	74	72·325	75·714	750	733·025	767·368
36	35·185	36·834	75	73·303	76·737	800	781·894	818·526
37	36·163	37·857	76	74·280	77·760	850	830·762	869·684
38	37·140	38·880	77	75·257	78·783	900	879·630	920·841
39	38·117	39·903	78	76·235	79·806	1000	977·367	1023·157

THE TIDES.—A Lecture on the Discovery of the laws of the Tides from Observation, has been delivered since our last, at the Bristol Institution, by the Rev. W. Whewell, of Cambridge. The lecturer began by remarking, that he had received great assistance in his researches respecting the tides, from the co-operation of various persons belonging to this city, and that, therefore, he was very willing to offer any exposition of the subject which might interest the inhabitants; and having been requested to give some explanation of the present state of this branch of science, by a deputation consisting of the President and other members of the Institution, he had readily consented. He proceeded to say, that the subject, inasmuch as it deals principally with measurements and numbers, is necessarily somewhat abstruse and complex; but still, considered as an illustration of the way in which the advances of science take place, it has considerable interest for all those who sympathise with the people of knowledge. The facts exhibited by the tides, realise, in a remarkable manner, the great doctrine of the universal mutual attraction of all portions of matter; for the same force which guides the planets in their courses, causes the waters of the Avon to rise from the bottom to the brim of the river's bed twice every day; and it is by the attraction of the sun and moon, indirectly operating, that large vessels are daily brought from the mouth of the river to the gates of the dock. Moreover, the mere contemplation of constant and regular law and order in phenomena, has in it something striking, as has been acknowledged by thoughtful men in all ages. The Roman poet, Virgil, for example, speaks of this as one of the questions of philosophy which he would aspire to penetrate, if the dulness of his nature did not rather drive him to the inglorious enjoyments of rural life.

[The following is the passage alluded to:—

“*Qua vi, maria alta tumescant
Obicibus ruptis, rursusque in seipsa residant;—
Sed si, has ne possim sapientiæ attingere partes
Frigidus obstituit circum præcordia sanguis;—
Flumina amam, sylvas que in glorius!*”

“If not, too dull, this elemental clay
Veils from my soul fair wisdom's lucid ray,
Might it be mine to learn what causes urge
The alternate movement of the labouring surge;
What pours the waters 'er the arid plain,
And drags them to their oozy bed again.”

And the same curiosity was felt respecting this puzzle up to modern times. But it was only a hopeless puzzle, till the great event of physical science, the publication of Newton's discovery of the causes of the celestial motions. Upon the occurrence of that event, and in the triumphant feeling of that success, it was taken for granted, that this problem, along with so many others belonging to the system of the universe, was completely solved. At first, there was great zeal shown to ascertain, by observation, that this was really so. The Royal Society issued projects and injunctions for extensive observations of the tides: but the investigation was found to be much more complex and difficult than had been anticipated; and those who set about it, were so far perplexed and discouraged, that the examination of the facts was soon discontinued, and remained in a state of neglect for a century. It has been resumed only within a few years.

The lecturer proceeded to explain by means of diagrams, the manner in which, in the recent observations and the investigations founded upon them, a regular order had been detected in facts, which at first appeared very irregular. The most obvious example of such a discovery of rule, is in the instance of the difference of height of the two tides on the same day. Such a difference had been noticed, in a general manner, by Captain Sturmy, of Bristol, in Newton's time, as is mentioned in the *Principia*. But the rule which this difference follows was not made out until a few years ago. If the heights of the tides on successive mornings and evenings be represented by means of upright lines standing on a base, the curve which passes along the ends of these lines *undulates*, being highest at spring tides, and lowest at neap tides. But, besides this undulation, it will form a *zigzag* line, in consequence of the tides being alternately higher and lower. And this zigzag becomes very marked, and then disappears again once every fortnight. Upon examination, it was found that the zigzag followed the moon's *declination*, being greatest when that is greatest, and vanishing when the moon is in the equator.

In the same manner it appeared that the elevation of the curve which represents the spring tides, is, in the alternate fortnights, higher and lower. It was stated that this result, as well as the one mentioned in the last paragraph, were shown in a very striking manner several years ago, by the result of Mr. Bright's tide machine, at Ham-Green. From what, we are to ask, does this alteration arise? The answer is found to be, that it depends on the elliptical form of the moon's orbit; for this form makes the moon come nearer to the earth, and go farther from it, in the alternate fortnights. In other words, this inequality is due to the moon's *parallax*.

The curve which represents the heights of the tides, has other apparent inequalities; and these, it is proved, can, in like manner, be referred to other alterations of position and distance in the moon and sun.

By this means the phenomena are *discussed*, and the rules which they follow extracted from them; and this investigation exemplifies one important step in science, which may be called the "determination of the laws of phenomena." Next follows a higher step,—the "determination of causes." The causes of the phenomena in this case, we do not doubt to be the attraction of the sun and moon; but to trace from the theory the effects of these causes, and to show that it agrees with the detail of the phenomena, is a task so complicated and arduous, that it has not been executed.

Thus the complete formation of the science of the tides is a process which is not yet finished, but is now going on. It would be a great mistake to suppose that the labours which the entire application of the doctrine of universal gravitation requires are already terminated. In the case of the tides there remains much to do, and much in which many persons who feel an interest in the progress of science, may take a part. The inhabitants of Bristol have the means of contributing in a very eminent degree, to this object;—they have, indeed, already done much towards it. By the liberality of some of the public bodies of this city, a self-registering tide-machine has already been erected at the Hotwells. This machine is constructed by Mr. Bunt, and is incomparably the most accurate and complete of any that has yet been employed; an account of this machine has been

read before the Royal Society of London, and is now in the course of being printed; and the sheets on which this machine records the time and height of every tide (some of which were exhibited) contains by far the best materials for future tide researches which have ever been produced. It would be a very great loss to science that these observations should not be continued, and the inferences drawn from them, which they are capable of furnishing. To do them justice, these observations ought to be treated in the same manner in which the astronomical observations of standard observation are treated; that is, they should not only be recorded, but constantly discussed and examined, with a view of obtaining a better knowledge of the rules which they follow, and with the intention of comparing them with theory as far as possible. Many individuals, and many cities, as Edinburgh, York, Glasgow, and Liverpool, have established astronomical observations; but the same expenditure and the same labour, if applied to the tides, would give results of greater value to science, because, in regard to the tides, more remains to be done. To do this in Bristol, would imply a sympathy with the progress of science, and a zeal for its promotion, which would be very suitable and noble accompaniments of the career of commercial prosperity, which, we trust, this city is destined to run. By establishing a permanent tide observatory, with a provision for the regular reduction of the observations, and the consequent constant improvement of tide tables, Bristol would render a greater service to science than any city has ever yet rendered.

LIGHT ON ISLE PENFRET, *Glenan Islands. Department of Finisterre.*

[From the *Annales Maritimes.*]

Navigators are hereby informed, that from the 1st of October next, a light varied by flashes will be shown from sunset to sunrise, at the tower recently constructed on the north point of Isle Penfret, one of the Glenan Islands, in lat. $47^{\circ} 43' 17''$ N., and long. $3^{\circ} 57' 6''$ W. The light will be seventy-two feet above the ground, and 118 feet above the level of high water, of equinoctial springs.

The flashes of light will appear at intervals of four minutes from each other, and will last from eight to ten seconds.

The lesser light which will appear between the flashes, will be preceded and followed by short intervals of darkness, and will be seen in fine weather at the distance of five leagues.

It should be observed that this new light, which is one of the third order, will differ only from the light of Pillier, situated near isle Noirmoutiers, in lat. $47^{\circ} 2' 36''$ and long. $2^{\circ} 21' 34''$ W., by this latter being of the second order. But it is considered that these lights cannot be mistaken for each other, as a ship from sea could not see the light of Isle Penfret without having first seen either the light of Belle Isle, or that of Penmarch.

LIGHT VESSEL AT KEY WEST.—Custom House, Key West, (U.S.), Collector's-office, June 30th, 1838.—The light-vessel for the north-west bar of this harbour has been placed at her moorings. She lies about eight miles from Key West, at the junction of the north and north-west channels, so as to serve as a guide to vessels entering

either. Vessels from the westward, coming in by the north channel, will bring the light vessel to bear due south, and run directly for her; and on reaching her station, will then run for the light-house, on Key West; unless the tide should be extraordinarily low, there is ten feet in this channel at low water, and twelve feet at high water. Vessels coming in by the north-west channel will bring the light-vessel to bear south-east half east, run for her, and then steer for the light-house as before. This channel is considered the best, having from one to two feet more water than the other. Masters of vessels going out from Key West will merely reverse the above directions. The light-vessel shows one light at an elevation of about fifty feet, which may be seen in clear weather, nine or ten miles.

W. A. WHITEHEAD.

LIGHT ON CAPE BRUNE—*Van Dieman's Land.*—The following Government notice has been received at Lloyd's:—

The top of the light upon Cape Brune is 339 feet above high-water mark. The tower, which is quite white, is 44 feet high, and forms a good landmark by day; the machinery makes a complete revolution every five minutes; the alteration, however, from light to shade takes place every 50 seconds, and this forms the distinguishing characteristic of the light.

“The following bearings by compass were taken from the centre of the lighthouse:—

	Deg.	Min.
Whale's Head.....	S. 41	15 W.
South-east Cape.....	S. 44	30 W.
South-east Break (Actæon).....	S. 39	4 W.
South-west do. do.....	S. 42	52 W.

This break extends about one mile and a half to the southward of South Actæon Island, but it does not at all times break—

	Deg.	Min.
South Actæon Island.....	S. 49	30 W.
Wallace Break.....	S. 44	0 W.
North Actæon Island.....	S. 59	0 W.
George III. Rock.....	S. 69	14 W.
Blanche Rock.....	S. 79	40 W.
South Port Island.....	S. 87	0 W.
Eddystone Rock.....	S. 3	45 W.
Pedra Blanca.....	S. 5	45 W.
Tasman's Head.....	S. 89	30 E.
Southern Friar.....	S. 79	0 E.

Variation, 12 deg. 11 min. easterly.

Sailing Directions for the entrance of D'Entrecasteaux Channel, from South-westward.

Vessels coming from the westward, unless a pilot has got on board are recommended in no case to pass between the Actæon reefs and the western shore; but, having arrived abreast of the Whale's Head, they are to bring that head to bear S.W. by W. $\frac{1}{4}$ W. by compass, and not open it to the southward of that bearing before the light-house on Cape Brune bears N. by E. $\frac{3}{4}$ E. by compass, at which time

the south-east break, or part of the Actæon's reef, will bear W. $\frac{1}{2}$ N. by compass, distant two miles and three quarters, which must not be approached nearer, unless the vessel be in charge of a pilot; from that position the steering N. by W. by compass will keep them in mid channel, where no danger exists.

In baffling, or working winds, vessels are to keep on the eastern shore, which may be approached boldly. Several reefs and rocks being on the western shore higher up than the Actæon Reefs, it will be necessary to approach that shore with great caution until you open Muscle Bay, and the light on Brune is brought to bear E. $\frac{1}{2}$ S.

The South-west Break, or part of the Actæon Reefs, bears from the Whale's Head N.E. $\frac{1}{2}$ N. by compass, distant six miles and a quarter, and from South-east Cape N E. $\frac{1}{2}$ E. by compass, distant three miles. Vessels working in the channel must be careful to keep the lead going, and not approach the Actæon Reefs to less soundings than twenty fathoms.

After the vessel is above Muscle Bay, the shore on either side may be approached to half a mile.

GEORGE KING, Port-officer.

Port-office, Hobart-town, March 7, 1838.

The following has been posted at Lloyd's:—Extract of a despatch from Lieutenant-Governor Sir John Franklin, to Lord Glenelg, dated Van Dieman's Land, Government House, March 31, 1838:—"I have the honour to acquaint your Lordship that the lighthouse on the extreme point of Brune Island is now completed, and the light is most favourably spoken of by the masters of all merchant ships since arrived, for its brilliancy. The lighthouse at the entrance of the Tamar is now being fitted, and I hope shortly to have in my power to acquaint your Lordship of its being in operation."

LIGHT AT PORKALA AND KANNING, IN THE GULF OF FINLAND, AND AT ENSKAR, IN THE GULF OF BOTHNIA.

The following has been received at Lloyds, from their agent at Helsingfors:

"The Office of Inspector of Pilots and Beacons at Helsingfors, June 25th. 1838.

"The revolving light hitherto exhibited on the beacon of Porkala, situate in the Gulf of Finland, in lat. $59^{\circ} 55' 30''$ N. and long. $42^{\circ} 34' 0''$ from the meridian of Ferroe, has been altered, and will, on and after the 1st (July 13) next, form a constant light, consisting of thirteen reflectors, with lamps, whose light will extend itself from true E.S.E. to W.S.W. or twelve points of the compass, and will also henceforward be visible in clear weather at the distance of nineteen miles, when it is viewed from an elevation of fifteen feet above the level of the sea, whence also the elevation of the light will be 164 feet, as formerly. On the old wooden beacon of Kanning, situate on Hango Point, in the above mentioned Gulf, in lat. $59^{\circ} 46' 0''$ N. and long. $41^{\circ} 6' 0''$ from Ferroe, a revolving light has now been constructed, which will likewise be lighted at the aforementioned time, or on the 1st (July 13,) next, and will consist of nine reflectors with lamps divided into three separate clusters, and put into a rotatory motion by means of machinery, and which will, during their

joint revolution of three minutes, exhibit within the space of each minute, one strong and two weaker lights, as well as darkness; the latter, however, not becoming total until at the distance of from five to six miles from the beacon, and only of a duration of from fifteen to twenty seconds. The light will be one hundred feet above the level of the sea, and ought, when reviewed in clear weather, from an elevation of fifteen feet, to be seen at the distance of fifteen miles.

“Upon an island called Enskar, situate in the southern part of the Gulf of Bothnia, a few miles from off the entrance to Nystad, there has lately been erected a beacon, built of stone, situate in lat. $60^{\circ} 43' 10''$ N. and long. $39^{\circ} 10' 30''$ E. of Ferroe, which will likewise be lighted up on and after the 1st (July 13) next. The light apparatus, which is erected at the height of one hundred and fifty-six feet above the level of the sea, will consist of nine reflectors with lamps, and will, in the direction from S.E. to N.E. by compass, exhibit a steady light, which, when viewed from an elevation of fifteen feet, ought in clear weather to be visible at the distance of eighteen miles.

“By command, OTTO FURUHJELM.”

ST. GEORGE'S SHOAL.—(From the *Boston Mercantile Journal*.) The general direction of St. George's is N.W. by N., and S.E. by S., and extends thirteen miles in length, and from one to two miles in width; the depth of water within this space being ten fathoms and less, but very irregular. The two shoalest places are between $41^{\circ} 40' 13''$, and $41^{\circ} 40' 33''$ N., and $67^{\circ} 44' 10''$ and $67^{\circ} 40' 30''$ W. and are knolls of hard sand, having upon them at low tide fifteen feet water. With the exception of these two places, the shoal may be crossed in any part by an ordinary sized vessel without danger. There is a rip usually the whole length of the shoal, and at times heavy breakers on the shoalest places. The time of high water at the full and change of the moon is half-past ten o'clock. The flood tide sets first part N.N.W., latter part N. by E. by compass, and runs four hours and a half; ebb sets first part S.S.E., latter part S. by W., and runs five hours and a half. Time in changing, including slack water, from half an hour to two hours. The rise and fall of the tide is seven feet.—*Shipping Gazette*.

LOCAL ATTRACTION IN IRON VESSELS.—Mr. Editor,—In the *Nautical Magazine* of February last, it is stated, that in consequence of the experiments of Professor Barlow and Captain Johnson, R.N. the compasses in iron vessels have been placed about eight feet above the deck, in order to counteract the effect of local attraction. I do not wish to dispute the merit of originality with those gentlemen; but I can show that I have a right to that of priority in this measure. In my answer to an official application from the Admiralty, made to me on the 27th August, 1836, I gave the result of a few experiments which I made at Milford Haven, in July, 1832; by which it appeared that the deviation was very much diminished at ten feet above the deck. I suggested at that time the advantage of placing the compass above the steersman's head. It was not then attended to, but when I had an opportunity, I caused a tell-tale compass to be lashed to the gaff, which was secured about eight feet above the deck. By this, all the courses in the river Quorra were laid down by me, and I found they were not very far from the truth. As I was one of the

first who ever navigated on the ocean in an iron vessel, I am the more desirous of putting in my claim, as the first who has pointed out a method of counteracting the powerful effect which such a mass of iron has on the compass. Trusting to your candour in giving due attention to the statement, I remain,

Yours, &c.

WILLIAM ALLEN.

ROGER'S SMALL PALMED ANCHOR.—Sir,—Permit me, through the medium of your valuable pages, to record my testimony in favour of the excellent qualities of the small palmed anchors of Lieut. Rogers, R. N.

The "City of Kingston" steam vessel, under my command, was supplied with them last year, and on her voyage to Jamaica, I had ample proof of their superiority over the common anchor, in the severe hurricane we encountered on the 26th July, while in Carlisle Bay, Barbadoes.

During this storm, in which twenty-three vessels were wrecked, when the strength of the gale had in some degree abated, the sea around us was breaking so heavily, that I considered it necessary for the preservation of the vessel, to slip from our anchors and put to sea. I may also state, that in ten subsequent cruizes round the island of Jamaica, anchoring in every port, and sometimes in severe weather, I always found a single bower sufficient.

Considering the above but a just acknowledgment of the merit of Mr. Rogers' invention.—I am, Sir, with respect,

Your obedient servant,

H. BARTON.

London, August 10, 1838.

SYMINGTON'S CONDENSEMENT.—MR. EDITOR,—Your correspondent, Mr. Mills, ship-builder, Bowling-bay, has informed your readers that he cannot see how Mr. Symington's refrigerating apparatus is to be applied, or how it is to escape injury from its being outside of the vessel. The drawing in your number for April ought to have explained how the first could be done; and the circumstance of the City of Londonderry having voyaged several times to and from Gibraltar in bad weather, without a single pipe or strap being broken or damaged, ought to have led him to suspect his mental vision might be rather imperfect while reflecting on the second.

As to Mr. Mills' method, Mr. Symington has declared he cannot see how Mr. Mills is to repair any accident which might befall it, without removing the boilers and other parts of the machinery under which it is placed; a process which Mr. Mills will probably perceive would not only be inconvenient, but rather costly.

It is curious to observe the different opinions of individuals in the same profession, while prejudging a question. Mr. Mills, ship-builder, Bowling-bay, cannot see how a certain object is to be accomplished, and starts many objections against it. While Mr. Ritchie, ship-builder, London, says it could easily be done, and without being liable to any such objections.

Judging of the science of these two gentlemen, by the result of their opinions, of what they had never seen, there will be but little difficulty to whom to award the palm. Mr. Ritchie's opinion having been proved by the best of all tests, experience, to be perfectly correct; Mr. Mills to be utterly wrong.

Concerning the City of Londonderry, it may suffice to say, a difference of opinion arose among those interested in her, as to the value of Mr. Symington's method. Some supposing that the vessel would sail faster, and make her voyage without the apparatus; others predicting that she either would not be able to make the voyage at all, or would not accomplish it in time. Under these circumstances, we insisted on its being removed: and what was the result? She proceeded on her voyage, but after being out for some time, was obliged to return, without completing it:—stress of weather was assigned as the cause. Her next attempt was far from prosperous. She sailed very badly going out and returning, and arrived at Falmouth a day or two after another steamer, which left Vigo six days after her. For several days during her homeward passage, she made little or no progress; and, from the incrustation of her boilers, consumed so many coals, that she had to put into Coruna for a fresh supply. Since this, she has been turned out of the service. While using the Symington method, her voyages were performed in proper time, and a very great saving in fuel effected. So much for prejudice.

Should you deem this communication worthy of insertion, it will oblige, Sir,

Your most obedient humble servant,

44, *Burr Street*, May, 1838.

ROBERT BOWIE.

NAVIGATION OF THE BRISTOL CHANNEL.—Pursuant to the intention expressed in the notice issued from this House on the 8th May last, a light vessel has been moored, and buoys laid in the Bristol channel, the marks, bearings, and other particulars of which are as follow, the depths of water being those of ordinary low water spring tides, and the bearings magnetic.

A revolving light is exhibited on board the light vessel, which will henceforth be continued from sunrise to sunset throughout the year.

THE LIGHT VESSEL.

Lies in $6\frac{1}{2}$ fathoms, with the high land of Minehead on with Flat-holme light tower W. by S.; the Usk light tower, N. by E. $\frac{1}{4}$ E.; a remarkable peak on the distant land, (known as See-me or See-me-not,) on with St. Thomas's Head, S. $\frac{1}{4}$ E.

BUOYS, VIZ. :—

Cardiff Hook, black and white chequered, lies in 2 fathoms, with Cardiff church tower, its apparent length open eastward of a conspicuous clump of trees, N.N.W. $\frac{1}{4}$ W.; Peterstone church tower, apparently midway between the spire of Newport new church, and the tower of the old church, N.E. by E.; the Usk light tower, N.E. by E. $\frac{1}{2}$ E.

West Cardiff, black, with beacon, lies in $4\frac{1}{2}$ fathoms, with the east end of Steepholme island, on with the west end of Flatholme Island, S. $\frac{1}{4}$ W.: Ball's Cottage (white) open southward of Lavernock Point, W. $\frac{1}{4}$ N.; Cardiff hook buoy, N.E. $\frac{1}{4}$ E.

Monkstone, Green, lies in 3 fathoms, half cable's length westward of the rock, with the south extreme of Barry Island, on with the main and inside Sully Island, W. by N.; Uphill church tower, its appa-

rent length open eastward of Brean Down, S. by E. ; Flatholme light tower, S.W. $\frac{1}{4}$ S.

New Patch, white, lies in 9 feet, with the high land of Minehead, just open southward of the south end of Flatholme Island, W. $\frac{2}{3}$ S. ; Cardiff church tower, and the two glass-house chimnies at Cardiff, apparently at equal distances, the church tower being the eastern object, N. $\frac{1}{4}$ E.

Wolves, red and white chequered, lies in 5 fathoms, half cable's length westward of the rocks, with Hayes' windmill, on with the west end of Sully Island, N.W. northerly ; Penarth Head, N. by E. $\frac{1}{4}$ E. ; Flatholme light tower, S.E.

Lavernock, white, lies in 4 fathoms, with north cliff, (or red brick point,) just open southward of Ball Point, W. by N. $\frac{2}{3}$ N. ; Lavernock church belfry, on with Lavernock Point, N.N.W. $\frac{1}{4}$ W.

One Fathom, black, lies in 5 fathoms, with Barry church (with Belfry) twice its apparent breadth, on the west end of Barry Island, N. by W. ; Lavernock Point, N.E. by E. ; Flatholme light tower, E. northerly.

East Culver, red, lies in $6\frac{1}{2}$ fathoms, with Penarth Head, on with Lavernock Point, N.N.E. $\frac{2}{3}$ E. ; Black Nose Point, just open southward of Steepholme Island, E. by N. $\frac{1}{4}$ N. ; Flatholme light tower, N.E. $\frac{1}{2}$ E. ; Burnham church tower, S.E. by S.

West Culver, red and white striped, with beacon, lies in 4 fathoms, with Swallow Cliff, a little open of the south end of Steepholme Island, E. $\frac{1}{4}$ N. ; Willet's Tower, well open to the westward of west Quantock's Wood, S.S.W. $\frac{1}{4}$ W. westerly ; East Culver buoy, E. $\frac{1}{2}$ S.

Gore, black, lies in 3 fathoms, with Worle windmill, its apparent length on the south part of Brean Down, E. by N. $\frac{1}{4}$ N. ; Burnham high light tower, its apparent length open eastward of the low light tower, E.S.E. ; Flatholme Island, its apparent width open northward of Steepholme Island, the light tower upon the former island bearing N.N.E. $\frac{2}{3}$ E.

Breaksea, black and white striped horizontally, with beacon, lies in 5 fathoms, with the Nash low light tower, apparently midway between the high light tower, and the white beacon upon St. Donat's Cliff, N.W. $\frac{1}{2}$ W. ; Evans' farm house, apparently midway between a large yellow dwelling-house, and Limpert House, the latter being the eastern object, N. by E. $\frac{1}{2}$ E.

East Nash, black and white chequered, lies in $4\frac{1}{2}$ fathoms, with Groes' House, yellow, twice its apparent width open westward of the tower upon Dunraven promontory, N. easterly ; the north side of the Nash high light tower, on with the south side of the low light tower, S.E. by E. $\frac{1}{4}$ E.

Nash Swatchway, black, lies in $2\frac{1}{2}$ fathoms, with Sker House, on with Rhwychwyn Point, N. $\frac{1}{2}$ E. ; Newton Down windmill, its apparent length opened northward of Newton Nottage church tower, N. N. E. $\frac{2}{3}$ E. ; The Nash high light tower, its apparent length open eastward of the low light tower, S.E. $\frac{1}{2}$ E. ; Tusker buoy, N.E.

West Nash, black and white chequered, with beacon, lies in 6 fathoms, with Newton Down windmill, on with the centre of the breakwater at Porth Cawl, N.E. by E. $\frac{1}{2}$ E. ; the Nash low light tower, S.E. $\frac{1}{4}$ E. ; East Skerweather buoy, N. easterly.

Tusker, green, lies in $4\frac{1}{2}$ fathoms, a cable's length southwest of the rock, with Newton Down windmill, on with a cluster of trees eastward

Newton Nottage church tower, N.N.E. $\frac{1}{4}$ E.; a windmill upon the sea-shore, on with Dunraven Point, S.E. by E.; the Nash low light tower, S.S.E. $\frac{3}{4}$ E.

East Skerweather, red and white striped, lies in 6 fathoms, with a conspicuous shaft on the summit of the highest hill, open eastward of Constantinople Cottages, the apparent length of them, N.N.E. $\frac{3}{4}$ E.; Margam Trees, on with the west end of a long stone wall, terminating near the beach, E. $\frac{1}{2}$ N.; Nash low light tower, S.E. $\frac{3}{4}$ S.; Mumbles light tower, N.N.W. $\frac{1}{4}$ E.

West Skerweather, red, with a beacon, lies in $4\frac{1}{4}$ fathoms, with Constantinople Cottages on with the mouth of Aberafon harbour, E. N.E. northerly; Margam Trees open southward of Sker House three times their apparent width, E. by S.; Nash high light tower, S. E.; Mumbles light tower, N. $\frac{1}{4}$ E.

Mixon, white, lies in 10 fathoms, with Porth Einion Point, on with Oxwich Point, W.N.W. westerly; Kilvey old mill tower, on with Swansea east pier head, N.E. $\frac{3}{4}$ E.; Mumbles light tower, N.E. $\frac{3}{4}$ N.

East Helwick, black, lies in $2\frac{1}{2}$ fathoms, with Rhossily Point open westward of Tear's Point, the supposed breadth of a ship, N.N.W. $\frac{3}{4}$ W.; a white building upon the high land, apparently midway between two white cottages below that building, N.N.E. $\frac{1}{2}$ E.

Helwick Swatchway, black and white striped, lies in $4\frac{1}{2}$ fathoms, with Burry Holmes appearing in the centre of Worms Sound, N.N. E. $\frac{1}{4}$ E.; Oxwich Point on with Porth Einion Point, E.S.E. easterly.

West Helwick, black, with beacon, lies in $5\frac{1}{2}$ fathoms, with Rhossily parsonage house on with the extreme east end of Worms Island, E. by N. northerly; Caldly light tower, N.W. $\frac{1}{4}$ N.; Port Einion Point, E.S.E.

Woolhouses, red, lies in $3\frac{1}{2}$ fathoms, a cable's length south-east of the centre of the rocks, with Caldly light tower, its apparent length open southward of the beacon upon that Island, S.W. $\frac{3}{4}$ W.; Lidstep Point on with Giltar Point, W. by N.; Tenby church spire, N.W. by N.

N.B.—The buoys laid off the Monkstone, Wolves, Tusker, and Woolhouses Rocks, are to be considered as temporarily placed, it being the intention of the corporation to cause beacons to be erected on those rocks, if practicable.

By order, J. HERBERT, Secretary.

Trinity House, London, 6th August, 1838.

ENGINEERS IN THE NAVY.—*Memorandum.*—*Admiralty, 19th July, 1838.*—With reference to the memorandum, dated 15th inst., establishing an increase of the pay of Engineers in her Majesty's service, the Lords Commissioners of the Admiralty are pleased to direct that the following scales be adopted for regulating the Allotments and Monthly Allowance of Engineers while actively employed, and while employed in Guard Ships, commencing on the 1st of August, and that the memorandum, dated 6th of January, 1838, be rescinded, viz:—

ALLOTMENT.—While actively employed—1st Engineer, per calendar month, 6*l.* 10*s.*; 2nd ditto, 4*l.* 6*s.*; 3rd ditto, 2*l.* 17*s.*—While in Guard Ships—1st Engineer, per calendar month, 4*l.* 5*s.*; 2nd ditto, 2*l.* 13*s.*; 3rd ditto, 1*l.* 16*s.*

ENLARGED SERIES.—NO. 9.—VOL. FOR 1838.

MONTHLY ALLOWANCE.—While actively employed—1st Engineer, per calendar month, 3*l.* 10*s.*; 2nd ditto, 2*l.* 5*s.*; 3rd ditto, 1*l.* 10*s.*—While in Guard Ships—1st Engineer, per calendar month, 2*l.* 10*s.*; 2nd ditto, 1*l.* 10*s.*; 3rd ditto 1*l.*

By Command of their Lordship's, C. Wood.

SUBMARINE VOLCANO.—On the 25th of last November, the captain and passengers of the brig *Cæsar*, from Havre, on passing the bank of the Bahama, saw an enormous fire, which increased till it had tinged the whole of the sky, and part of the horizon. It was kept in sight for four hours, and could only be accounted for as proceeding from a submarine volcano. On the 3d of January the captain of the *Sylphide*, also from Havre, being on the same spot, found the sea disturbed, and whitish in colour, which he attributed to the same cause. To these notices, conveyed to the French Academy of Sciences, M. Moreau de Joannes adds, that on the 30th of the same December, an earthquake took place at Martinique. The shock was violent and the heat very great.

Law Proceedings.

NELSON.—*Lien.*—*Sturge v. Buchanan.*—Action to recover value of a cargo of oil, a right of lien thereon, claimed by defendant. Plaintiff, owner of *Nelson*, fitted for whaling voyage in South Seas. Sailed; and obtained cargo; but being damaged, put into Sydney to repair. To pay expenses of repair, borrowed money from the house of Lamb Buchanan at Sydney; and as security for payment, transferred the oil from the *Nelson*, with the bill of lading, to be forwarded home to a partner in London. Defendant, agent for the above house, received the bill of lading, and the cargo was consigned to him. On arrival of the *Lady Harewood*, defendant claimed cargo as assignee. Opposed by plaintiff, as owner, who obtained an injunction from the Court of Chancery against delivery of cargo. Contended for plaintiff, that captain had no authority to pledge the cargo thus; that he had unnecessarily refitted the vessel for another voyage, instead of bringing her home; that he had no right to put into Sydney, or to refit there, being directed not to do so, to avoid the desertion of his crew, and the expensiveness of materials; that he should have brought his own ship home with the cargo, instead of sending it in another ship; and that having thus exceeded his authority, he could give no right over the cargo to the defendant for such excess of expenditure, and could only recover for such repairs as were required for the home voyage. Answered, that the *Nelson* was obliged to put into Sydney for repairs before she could proceed to England, nearly equal to those necessary for a new voyage; that her captain had acted for the advantage of the owner, and that his acts should be considered as authorized and confirmed by him. After an adjournment, Lord Denman said, that the present action was to recover the sum of 6,669*l.*, the proceeds of certain oil, the property of the plaintiff, which the defendant had got possession of, by virtue of being a partner with Mr. Lamb at Sydney. The defendant claimed a set-off for payments made by Mr. Lamb. He considered it admitted that the captain's acts at Sydney were unauthorized, and there was no reason for supposing that Mr. Lamb could think the captain had authority to refit and go on a new adventure. The question was, whether the plaintiff in London had acted so as to adopt and make himself liable to the unauthorized proceedings of the captain at Sydney. It appeared to him that if all that had been expended for the real benefit of the ship was allowed to the defendant, and also all that the plaintiff must have paid in order to get the oil out of the *Nelson*, there would be as much allowed as he would be entitled to. The jury returned a verdict for the plaintiff, subject to the deduction of the expenses necessary for the landing and wharfage at Sydney, and the voyage home. The amount of this allowance was agreed to be settled out of court.—*Admiralty Court, 21st Feb.*

MACDONALD v. JOPLIN.—*Wages.*—The mate of a vessel (plaintiff) on arriving at Liverpool, before discharging cargo, applied to captain for permission to leave her. Being refused, he left her the next day, went to Newcastle, and never returned. Co-acted that plaintiff had deserted, and had forfeited his wages, on the well-known point

of maritime law, that "freight is the mother of wages." Answered, that cases cited did not bear on question. Mr. Justice Coleridge decided that it was an absolute desertion, and leave would be given for plaintiff for amount claimed.

MR. EDITOR,—In the 353rd page of the *Nautical Magazine* for May, in the report of a trial involving the construction of the Pilot Act, by which it appears that a pilot is *not* responsible for accidents of collision caused by want of a proper look-out being kept on board a vessel, doing damage, of which he may be in charge. After such a decision in the Admiralty Court, (of which, by the bye, there are a number of precedents,) is it *probable* that in an action at common law, in the Queen's Bench, the Court would give a contrary decision? Having put a question, I will now proceed to state the case to which it refers, as briefly as I can; premising that, from the well known liberality with which your highly valuable and interesting Magazine is conducted, coupled with the fact that the Editor is the decided enemy of legal oppression, I have not the least doubt you will give my statement some degree of attention, in common with the numerous cases submitted to your impartiality.

On the 23rd of June, 1836, the ship *Isabella*, from Calcutta, being in charge of a cinque port pilot, (Mr. John Gibbs, of Deal,) came in collision with the Liverpool brig *Crescent*, (having no licensed pilot on board,) off Shell Haven, in the river Thames, under the following circumstances:—The *Isabella* having just tacked from the *very edge* of the Blyth Sand, being under double-reefed topsails, wind W.N.W., tide about half-flood. The brig in question was observed standing towards the *Isabella*, on the *starboard* tack; upon which occasion the pilot (who was at his station on the poop, and who could not see the brig through the main and fore courses) immediately ordered the helm "hard up," she, the ship, being on the *larboard* tack, and hailed the brig to keep her wind. Instead of doing so, as is customary in such cases, the brig *bore up also*, and threw herself athwart the *Isabella's* bows, doing damage to both vessels; that of the brig to the amount of 67*l.* 19*s.* 6*d.*, and the ship to the amount of 85*l.*, the Captain of which fully exonerated the pilot from any blame whatever, as he could not have acted otherwise without incurring the most imminent danger of running his ship on shore on the Blyth; whereas, the brig could have tacked, (which she shortly must have done,) or, by keeping her wind, have cleared the ship; and he consequently received his pilotage without delay or demur, and a small present from the Captain in addition. But the owners of the brig sent in an account to the owners of the *Isabella*, for the amount of damage; and upon the former being referred to the solicitors of the latter, they dropped further proceedings, and ultimately entered an action in the Court of King's Bench, against the pilot; taking the precaution, however, of not doing so until the *Isabella's* crew (who would have been witnesses for the pilot) had sailed on their respective voyages. The consequence has been, that, to defend himself, he has been compelled to postpone the trial from session to session to wait the arrival of his witnesses, for which purpose he has paid 100*l.* into Court to abide the result of the action; and he is informed by his lawyers that they have very little hope of succeeding in his defence, as he would require "an overpowering body of evidence" to defend himself from the charge; and again, almost in the same breath, he is informed that the plaintiffs could derive no advantage from the fact of his witnesses having sailed!! and the suggestion of a compromise is held out. But the pilot, (who bears a highly respectable character for sobriety and attention to duty,) being conscious of the blamelessness of his conduct upon the occasion, refused to do so, and the consequence is, he has been put to an enormous expense in sending me to town to watch the arrival of the witnesses. In short, I am come up from Deal, during the last two years, no less than *seven times*, and have been detained in town sometimes for a period of three months, watching the cause; and when I had succeeded in securing the witnesses, his lawyers, by some *blunder*, have allowed the most intelligent to slip through their fingers without taking their examination; but as they have (they say) *deposed* to the circumstances which prevented them from doing so, *we have no right* to suppose that the negligence was intentional.

I cannot, however, divest myself of the impression, that the Pilot is intended to be made a victim to legal rapacity, and that the whole affair is "got up" for the purpose of extorting money. Only conceive, Mr. Editor, if you can, the idea of a man whose profession is bringing him in an income of 130*l.* per annum, (averaged) being subjected to so disgraceful a prosecution for so protracted a period, and that from the little encouragement given by his legal advisers, his family, (independent of the vast expense) have been in a constant state of excitement, and himself reduced, at intervals, to a state of despondency, from which the most serious apprehensions have

been entertained of its ultimate effect upon his mental powers; a man, too, who, for a period of twenty-three years, has never put a shipowner to a penny's expense for damages in any shape, up to the time of the present occurrence. I may just mention, that there are five Gravesend watermen who witnessed the collision, and who will willingly bear testimony to this statement of the case, if they be not, *by some accident*, prevented from attending at the ensuing trial, which our lawyers say, it will be necessary *again* to postpone, for the *fourth time*, to await the arrival of the chief officer, whom they allowed last year, to slip through their fingers, on a voyage to the Mauritius. They also think it requisite, for the defence, that the Attorney General be retained, as they are of opinion that the case of the "Transit" above alluded to, does not apply to the case of the pilot of the Isabella; and it being an action at *common law*, the result will, *in all probability*, be the reverse!!! In this event, the pilot must be irretrievably ruined.

One argument made use of by the Defendant's Solicitor, is remarkable from its singularity, viz. that a *Jury will be influenced by the consideration that the larger vessel, can best afford to bear the loss, and that, therefore, the pilot must suffer*. Another is, that neither Judge, Jury, nor Counsel, will be able to form a correct notion of the merits of the case, from not understanding nautical affairs, nor will the pilot's respectable character be available as an argument in his favour. In short, it is pretty plain, that the pilot is to be victimized, by some means or other, notwithstanding that all the cases, which, in my humble judgment, appear to be in point, are decidedly in his favour, and as decidedly *against* the Plaintiff, for bearing up on the *starboard* tack. Inconceivable as the statement may appear, I have the most unquestionable legal vouchers by me, in proof of it, in the shape of original letters, Counsel's opinion, &c., who says, the Isabella had *no right to bear up on the larboard tack*, "if" &c., &c. I hope your reporter will pay particular attention to this case when it comes on for trial. After the decision, it is my intention to publish the facts, and the whole correspondence. I will not detain you longer, than to request a reply to my question in the first part of my letter, and to apologize for the trouble I have given you in this BRIEF epistle.

Your most obedient servant,

W. GIBBS.

22, Regent-street, Mile-end, 14th June, 1838.

(Son of the Defendant.)

NEW BOOKS.

NARRATIVE OF AN EXPEDITION IN H.M.S. *TERROR*, undertaken with a view to Geographical Discovery on the Arctic Shores in the years 1836—7. By Captain Back, R.N. Murray.

Captain Back's narrative has just made its appearance; it is both interesting and instructive; and this is saying much, when we consider the monotony of such a voyage. The perils encountered, greater perhaps than were ever experienced by any ship in the icy seas, the patient endurance of extreme toil in a cold climate, and the consummate ability of her commander in extricating his vessel will remain a lasting memorial of the high character of British Seamen.

The insuperable difficulties which he found in his way, prevented Captain Back from gaining the honour of completing our charts with the line of coast between Cape Turnagain and the estuary of the Great Fish River; but this can in no way detract from his merit; his name as a great traveller and voyager stands high, and will be handed down to posterity equal in association with his professional compeers, Parry, Franklin, and Ross, for it affords us much pleasure to inform our readers, that Her Majesty has considered that it should be in future recorded as Sir George Back.

The work is illustrated with the finest specimens of lithography we have ever seen, from drawings by Commander Smith, the late senior lieutenant of the Terror.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

SURGEONS,—J. W. Elliott, J. Naulty, J. Steven, J. Park, J. Rodgers, J. Maco-
nechy, W. Roy, A. Cross, R. Fairservis, A. Muirhead, M.D., G. A. Munro, G.
Williams, W. Kent, A. R. Bradford, J. A. Mould, A. C. Macleroy, J. Sloan, T.
Fraser, J. Steel, T. Brenan, J. Moody, G. Jones, J. Booth.

MASTERS,—G. Filmer, R. Currie.

APPOINTMENTS.

ACTÆON, 26,—*Captain*, R. Russell; *Lieutenants*, J. A. Mends, R. Curtis; *Master*,
E. Cousens, *Surgeons*, J. Dunlop; *Assistant-Surgeon*, G. McLeod; *Purser*, J. B.
Hutchings. **APOLLO**, 46,—*Assistant-Surgeon*, R. Jack; *Second-Master*, N. Scott.
ASTREA, *Lieutenant*, E. Herrick. **BUZZARD**,—*Lieut.*, C. Fitzgerald; *Assistant-Surg.*
J. Peter; *Second-Master*, P. Roberts; *Clerk in charge*, W. Scott. **BELLEROPHON**,
74,—*Clerk*, P. Mundell. **BERMUDA**,—*Hospital Mates*, W. Scotland; *Midshipman*,
W. Minchin. **BONNETTA**, 3,—*Assistant-Surgeon*, W. Hobbs. **BRITANNIA**, 120,—
Lieutenant, W. Brown. **COAST-GUARD**,—*Commanders*, G. Bissett, G. Dobson, F.
Patten, T. P. Le Hardy, C. C. Dent, J. Hudson, J. King, S. H. Usher; *Lieutenants*,
J. Dalyell, J. Liddon, J. Markett, E. Hill, J. Waller, J. Creser, T. Tribe, H. John-
stone. **COLUMBINE**, 16,—*Mate*, W. Hannant. **CORNWALLIS**, 74,—*Assistant-Surg.*
W. R. Dalton; *Clerk*, C. H. Breay. **DOLPHIN**, 3,—*Lieutenant-Commander*, C. Blis-
sett. **DONEGAL**, 74,—*Commander*, G. W. Lydiard. **EDINBURGH**, 74,—W. Webster,
J. Sibbald; *Mate*, W. Cashman. **ELECTRA**, 18,—*Mate*, G. H. Wood. **ESPOIR**, 10,—
Assistant-Surgeon, G. W. Pritchard. **EXCELLENT**,—*Lieutenant*, W. Wiseman;
Assistant-Surgeon, R. Hopby; *Midshipman*, W. Cudworth. **FAVOURITE**, 18,—*Surg.*
J. Jones. **HARLEQUIN**, 16,—*Commander*, Lord F. Russell. **HASTINGS**, 74,—*Lieut.*,
J. Morshead; *Mates*, J. Fisher, C. F. Chimmo, E. Davison, M. Lowther; *Midship-*
man, M. Duncan; *Second Master*, W. Woodyer; *Mid.*, N. Heath. **HERALD**, 28,—
Lieutenant, W. Johnstone. **HERMES**, St. V.,—*Mate*, A. La Toucha. **HERCULES**,
74,—*Commander*, B. Fox; *Assistant-Surgeon*, E. Derriman; *Mates*, G. Johnson, R.
G. Risk, R. R. Easto. **JASEUR**, 16,—*Col. Mid.*, Hon. P. Packenham. **MELVILLE**,
74,—*Assistant-Surgeons*, J. M. Mustard, B. Horsburgh, L. Campbell. **MODESTE**, 18,—
Lieutenant, J. E. Bingham. **NIGHTINGALE**, 6,—*Assistant-Surgeon*, J. Yeoman.
ORESTES, *Commander*, P. S. Hamby; *Purser*, F. May; *Master*, W. Parsons; *Surg.*,
G. Jones, M.D.; *Assistant-Surgeon*, J. Reid. **PEMBROKE**, 74,—*Lieutenant*, T. Stuart.
PHENIX, St. V. 4,—*Commander*, A. M. Milward. **PLUTO**, St. V.,—*Lieutenant*, J.
Lunn. **PIGEON**, 6,—*Lieutenant*, T. James. **PENGUIN**, 6,—*Lieutenant*, W. Luce;
Assistant-Surgeon, J. M'Iroy, M.D.; *Master*, J. B. Manley. **PIQUE**, 36,—*Lieut.*
J. M'Dougal. **PRESIDENT**, 52,—*Commander*, F. Liardet; *Assistant-Surgeon*, P. Ber-
nard. **PILOT**, 16,—*Commander*, G. Ramsay; *Lieutenant*, C. J. Postle; *Master*, W.
Langdon; *Surgeon*, A. Lyon; *Assistant-Surgeon*, H. Turnbull; *Purser*, F. Hellyer.
PRINCESS CHARLOTTE, 104,—*Commander*, L. T. Jones; *Assistant-Surgeon*, R.
Anderson. **REDWING**, St. V., *Second-Master*, J. Hawkins. **ROYAL GEORGE**, yacht,
Assistant-Surgeon, C. Brien; *Second-Master*, H. B. Harris. **RHADAMANTHUS**, St. V.,
Lieutenant, St. L. Aldworth. **RODNEY**, 92,—*Assistant-Surgeon*, J. Ritobie. **ROYAL**
ADELAIDE, 120,—*Mates*, C. Glynn, C. Norman. **ROSE**, 18,—*Commander*, P. Christie;
Purser, J. Colwell; *Assistant-Surgeon*, E. Johnson. **SAVAGE**, 10,—*Lieutenant-Com-*
mander, Hon. E. Plunkett. **SERINGAPATAM**, 46,—*Assistant-Surgeon*, W. Roberts.
SERPENT, *Com.*, T. M. Symonds. **SPEEDY**, *Lieutenant*, J. A. Wright; *Assist.-Surg.*,
C. Wood, M.D. **TERMAGANT**, 10,—*Lieutenant*, H. Seagram. **VERNON**, 60,—*Captain*,
Lord J. Churchill. **VICTORY**, 104,—*Lieutenant*, J. B. Cragg; *Clerk*, D. N. Framp-
ton. **VOLCANO**, St. V.,—*Assistant-Surgeon*, W. Barnes. **WELLESLEY**, 74,—*Lieut.*,
P. W. Hamilton; *Commander*, J. V. Fletcher.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ACTÆON, 26, commissioned at Portsmouth, by Captain Robert Russell. **APOLLO**,
46, 12th August, sailed from Portsmouth for Cork. **ATHOL**, 28, Mr. Bellam;

23rd July, left Portsmouth for Spain; 18th August, arrived at Portsmouth from St. Sebastian. BUZZARD, 3, commissioned at Plymouth; August 15, fitting. COLUMBINE, 16, Com. Henderson, 8th August, arrived at Sheerness from Chatham; 14th, arrived at Portsmouth. HERALD, 18, Captain Nias, 18th August, sailed from Portsmouth for East Indies. HERCULES, 74, Captain I. T. Nicholas, C.B., 27th, July, arrived at Plymouth from Quebec. HERMES, St. V., Lieutenant W. Blount, 7th August, sailed from Plymouth for coast of Spain. JASEUR, 16, Commander F. M. Boulbee, 23rd July, sailed from Plymouth for Gibraltar. ORESTES, 18, 10th August, commissioned at Portsmouth by Commander R. J. Hambley, PILOT, 16, Commander G. Bamsay, sitting at Plymouth. ROSE, 18, P. Christie, fitting at Sheerness. ROYALIST, 10, 18th August, arrived at Plymouth from N. coast of Spain. SAPPHIRE, 28, Captain Rowley, 4th August, arrived at Portsmouth from Malta; 14th, paid off. SAVAGE, 10, Lieut. H. J. Lacon, sailed for N. coast of Spain. TRIBUNE, 24, Captain Tomkinson, 8th August, arrived at Sheerness from Chatham. VERNON, 50, Lord John Churchill, fitting at Sheerness. WATERWITCH, 10, Lieutenant Dickey, 31st July, paid off at Portsmouth.

PORTSMOUTH.—*In Harbour*.—Britannia, Victory, Hastings, Excellent, Royal George, Actæon, Orestes, Pantaloon, Firebrand, Messenger. *At Spithead*, Edinburgh, Pique, Tribune, Columbine, Athol.

PLYMOUTH.—*In Harbour*.—Royal Adelaide, San Josef, Hercules, Jupiter, Pilot, Nightingale, Skylark, Penguin, Buzzard.

COMMISSIONED SINCE OUR LAST.—*At Portsmouth*, Actæon, Orestes. *At Plymouth*, Pilot. *At Sheerness*, Rose, Vernon. PAID OFF.—*At Portsmouth*, Sapphire, Waterwitch.

ABROAD.

ALBAN, St. V., Lieutenant Tinling, 21st June, sailed from Barbados for Jamaica. ALLIGATOR, 28, Sir P. Bremer, 25th May, arrived in Simon's Bay; 2nd June sailed for Sydney. ANDROMACHE, 28, Captain L. Baynes, 30th June, at Quebec; 4th July, sailed for Miramichi. BARHAM, 50, Captain A. L. Corry; 23rd July, arrived at Malta from Mahon. BASILISK, 6, Lieutenant G. G. Mac Donnell, 15th March, arrived at Callao. BLAZER, St. V., 1st August, arrived at Gibraltar from Malta. BONETTA, 3, Lieutenant H. P. Dischamps, 22nd May, Simon's Bay from Algoa Bay. BRISK, 3, 2nd June, sailed from Cape for Sierra Leone; 6th, left Sierra Leone; 2nd July, at Ascension. BRITOMART, 10, 26th May, arrived at Simon's Bay; 2nd June, sailed for New Holland. BUFFALO, J. Wood, Master, 7th April, arrived at Sydney, from New Zealand. CASTOR, 36, Captain E. Collier, 23rd July, arrived at Malta from Barcelona. CHAMPION, 18, Commander G. S. F. King, 30th June, left Jamaica for Chagres. CHARYBDIS, 3, Hon. Lieut. Gore, 7th July, sailed from Quebec; 15th, at Picton. CLIO, Commander W. Richardson, 17th May, sailed from Gibraltar for the Eastward. COLUMBIA, 2, 30th June, arrived at Barbados from England. CORNUS, 18, Commander Hon. P. P. Carey, 2nd July, Jamaica. CONWAY, 28, Captain C. R. Drinkwater, 8th April, sailed from Sydney for Hobart Town. CORNWALLIS, 74, Captain Sir R. Grant, 30th June, at Quebec. CROCODILE 28, Captain J. Polkinghorne, 9th June, St. John's. DEE, St. V., Com. Sherier, 27th, sailed from Quebec for West Indies. DONEGAL, 78, Captain J. Drake, 7th August, Lisbon. ELECTRA, 18, 19th May, at Buenos Ayres. ESPOIR, 10, 7th August, Lisbon; 12th, sailed. FLAMER, St. V., 3rd July, sailed from Port Royal for St. Thomas. GRIFFIN, 3, 6th July, at Barbados. HARLEQUIN, 16, Com. J. E. Erskine, 3rd August, Gibraltar. HERCULES, 74, 30th June, sailed from Quebec for England. HORNET, 6, Lieutenant Baillie, 5th July, arrived at Jamaica from Chagres. INCONSTANT, 36, Captain D. Pring, 30th June, at Quebec. JASEUR, 16, Commander F. M. Boulbee, 30th July, arrived at Gibraltar; 31st, sailed for the Eastward. LYNX, 3, 11th June, Bight of Benin. MAGRIENNE, 24, Captain Mildmay, 24th July, Lisbon; 12th August sailed. MALABAR, 74, Captain Sir W. A. Montague, C.B., 13th July, arrived at Halifax, from Quebec. MIDDEN, 4, St. V., 7th July, at Montreal. MINDEN, 74, Captain A. B. Sharpe, C.B., 24th July, sailed from Lisbon and arrived same day at Gibraltar; 4th August, sailed for the eastward. NIMROD, 20, Commander J. Fraser, 9th June, sailed from Jamaica for Vera Cruz. PELICAN, 16, 22nd July at Ascension. PEMBROKE, 74, Captain F. Moresby, 20th July, at Malta, from Genoa. PRINCESS CHARLOTTE, 104, Flag-Admiral Hon. Sir R. Stopford, 20th July, arrived at Malta from Naples. RACEHORSE, 18, Com. W. H. Crawford, 5th July, off Picton. RAVEN, 4, Lieutenant G. Bedford, 22nd July at Ascension. RHADAMANTHUS St. V., Commander A. Wakefield, 20th July, at Malta. RINGDOVE, 16, Commander S. Nixon, 15th June, sailed from Jamaica

on a cruise. RODNEY, 92, Captain H. Parker, 23rd July, arrived at Malta from Barcelona. RUSSELL, 74, Captain Sir W. H. Dillon, K.C.H., 7th August, at Lisbon. SAMARANG, 28, Capt. W. Boughton, 15th May, sailed from Monte Video for Buenos Ayres; 19th, at Buenos Ayres. SAPPHIRE, 28, Captain R. Rowley, 19th June, arrived at Gibraltar. SAPHO, 16, Commander, T. Frazer, 24th July, at Jamaica from a cruise. SARACEN, 10, 15th April, Cape Coast, 3rd May, Cape of Good Hope, from Prince's Island; 3rd June, at Simon's Bay. SATELLITE, 18, Commander J. Robb, 2nd July, sailed for Jamaica. SCYLLA, 16, Com. Hon. J. Denman, 27th July, arrived at Lisbon from Cadiz. SERINGAPATAM, 46, Captain J. Leith, 6th July, at Barbados. SKIPJACK, 5, Lieutenant J. Robinson, 5th July, arrived at Quebec from Halifax. SNAKE, 16, Commander A. Milne, 22nd July, Halifax. SPARROWHAWK, 16, Commander J. Sheppard, 13th June, at Bahia. TALAVERA, 74, Captain W. B. Mends, 17th July, sailed from Gibraltar for Malta. TARTARUS, St. V., 24th June, arrived at Barbados; 5th July at Jamaica. TRINCULO, 16, Commander H. E. Coffin, 20th July, at Cadiz. VANGUARD, 80, Captain Sir T. Fellowes, 23rd July, at Malta from off Tunis. VESTAL, 26, 4th July, sailed from Quebec for Bermuda. VOLCANO, St. V., 20th July, arrived at Gibraltar from Plymouth; 25th sailed for Malta. WANDERER, 16, Commander T. Bushby, 2nd July, sailed for St. Jago de Cuba. WEAZLE, 10, Commander John Simpson, 2nd August, arrived at Gibraltar from Plymouth, and sailed for Malta. WOLVERINE, Commander Hon. E. Howard, 20th July, Cadiz.

Births.

At Falmouth, on the 28th July, the lady of Captain J. H. Plumridge, superintendent of the Packet Service at that port, of a daughter.

At Southsea, on the 14th August, the lady of Commander F. Wood, R.N., of a son.

At the Ryalls, Seaton, Devon, the lady of Commander W. H. B. Proby, R.N. of a daughter.

At Southsea, on the 28th July, the lady of Mr. T. Yule, Master, R.N., of a daughter.

Lately, at Maidenhead, the lady of Commander Huntley of a son.

At Longfleet, on the 30th July, the lady of Lieutenant George Davies, R.N., commander of her Majesty's revenue cruiser Tartar, of a son and heir.

Marriages.

At Holy Rood Church, Southampton, on Wednesday, the 22nd of August, by the Rev. Sempster G. Dryden, the Rev. Charles Gulliver Fryer, to Helen Elizabeth, only daughter of Sir Gregory Osborne Page Turner, Bart., and niece of Captain H. W. Bayfield, R.N.

At Kennington, the Rev. Edward Pettman, Chaplain, R.N., to Sophia, daughter of the late Captain Henry Roberts, R.N., one of the companions of Captain Cook.

At St. George's, Hanover-square, Captain the Honourable George Cavendish, R.N., brother to Lord Waterpark, to Caroline, sister to Charles Prideaux Brune, Esq., of Prideaux Place, Cornwall.

At Alverstoke, George Wallis, Esq. R.N., to Martha, eldest daughter of Mr. Thomas Deering, of Hardway.

At Calcutta, Lieutenant James A. Macdonald, R.N., to Martha, daughter of the late S. H. Greig, Esq.

At St. George's, Hanover-square, on the 16th Aug. by the Rev. H. A. Beamish, Captain Hope, R.N., of Carridon, N.B., to the Hon. Frederica Kinnaird.

At Greta Green, on the 29th July, Lieutenant William Boys, R.N., late of Her Majesty's ship Harlequin, to Charlotte Sophia, a ward in Chancery, and youngest daughter of Dr. Greenall, M.D., of Biddenden, Kent.

At Dublin, on the 17th July, the Rev. James Annesly Beers, A.M., to Alice Elizabeth, second daughter of Capt. John Banks, R.N.

At Weston, on the 10th August, A. Bendall Littlehales, Esq., eldest son of Rear-Admiral Littlehales, of Bath, to Nancy Kegan, relict of the late Daniel Tugwell, Esq., and youngest daughter of the late John Horne, Esq., of the island of St. Vincent.

At Margate, Lieutenant Henry Harvey, R.N., son of Vice-Admiral Sir T. Harvey, to Jane, daughter of Dr. Denison, late of London.

At Great Malvern, Captain James Brasier, R.N., to Catherine, only surviving daughter of the late John Marshall, Esq., of Bradney, Shropshire.

At St. Peter's Church, Thanet, on the 28th July, Lieutenant Alexander Brown, R.N., to Honor, youngest daughter of Sir Richard Burton, of Sackett's Hill House.

At St. Pancras, William Orr, Esq., surgeon, R.N., to Jane, widow of J. R. Bourcard, Esq., Prussian Consul, here.

At Llwyn-y-gwern, North Wales, on the 15th August, Commander Philip P. Wynne, R.N.

In Penny-street, Portsmouth, aged 20, Elizabeth, daughter of Lieutenant Joseph Clark, R.N.

Deaths.

At March, (U. C.) aged 64, Captain Benjamin Street, R.N.

At Camberwell, on the 13th July, Sarah Stowers, third daughter of James Mounsher, Esq., R.N.

At Stoke, Plymouth, Mr. Richard Burstall, Master, R.N. (1797) aged 66.

At Stonehouse, on the 5th August, Thomas Simpson, Esq., Purser, R.N. (1814) aged 64.

In June last, at Sierra Leone, Lieut. W. S. Warren, R.N.

At Guernsey, on the 27th July, Lieut. G. Mudge, R.N.

METEOROLOGICAL REGISTER,

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

JULY, 1838.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	S.	30.02	30.14	59	64	53	65	N.	N.	4	5	O.	Qbc.
22	Su.	30.16	30.17	56	61	50	62	N.	N.	4	4	Bc.	Bc.
23	M.	30.18	30.12	57	59	45	63	N.W.	N.	4	3	O.	Or. (3)
24	Tu.	29.98	29.98	56	63	51	64	N.	W.	4	3	Bc.	Bc.
25	W.	30.00	30.00	59	53	45	62	N.W.	N.W.	2	3	Bcm.	Or. (3)
26	Th.	29.96	29.88	58	61	46	67	W.	W.	3	4	Bcm.	Or. (3) (4)
27	F.	29.79	29.84	60	64	51	65	N.W.	N.W.	6	6	Qbcm.	Qbcm.
28	S.	29.80	29.76	58	65	51	68	W.	S.W.	2	3	B.	Bcp. (4)
29	Su.	29.65	29.59	60	65	51	66	S.W.	S.W.	3	4	Bcmp. 2)	Bcpt. (3)
30	M.	29.67	29.71	61	56	47	66	W.	W.	3	2	Bcp. 2)	Bc.
31	Tu.	29.86	29.90	60	66	48	68	S.W.	W.	2	3	Bc.	

JULY—Mean height of the Barometer = 30.011 inches; Mean temperature = 62.3 degrees; Depth of Rain fallen = 1.85 inches.

AUGUST, 1838.

1	W.	30.04	30.02	65	72	50	73	S.W.	S.	3	5	Bc.	Qod. (3) (4)
2	Th.	29.85	29.79	67	69	58	71	S.W.	S.W.	4	7	Qod. (1) (2)	Qp. (3)
3	F.	29.73	29.75	65	70	59	70	S.W.	S.W.	5	6	Bc.	Qa.
4	S.	29.69	29.64	67	73	61	73	S.W.	S.W.	5	6	O.	Qr. (4)
5	Su.	29.57	29.55	59	68	55	70	S.	S.W.	3	4	Od. (2)	Bc.
6	M.	29.53	29.52	63	60	57	69	S.W.	S.W.	6	8	Qbcp. (2)	Qbcp. (3) (4)
7	Tu.	30.61	29.75	60	67	53	67	W.	W.	6	6	Qbc.	Qbc.
8	W.	30.06	30.10	59	63	52	66	N.W.	N.W.	5	5	Qo.	Qa.
9	Th.	30.22	30.18	62	68	47	69	S.W.	S.W.	4	6	O.	Qa.
10	F.	30.08	30.08	65	72	56	74	S.W.	S.W.	5	6	Qo.	Qa.
11	S.	30.11	30.12	69	73	61	73	S.W.	S.W.	6	4	Qbc.	Qbc.
12	Su.	30.12	30.08	64	76	58	77	S.W.	S.W.	4	3	O.	B.
13	M.	30.10	30.11	64	70	62	71	S.W.	N.W.	3	4	O.	B.
14	Tu.	30.24	30.20	60	66	47	67	N.W.	N.W.	3	4	B.	Bc.
15	W.	30.13	30.20	59	65	49	66	N.W.	N.W.	4	4	Bc.	Bc.
16	Th.	30.14	30.10	66	70	44	71	S.W.	S.W.	2	4	Bcm.	Bcm.
17	F.	30.20	30.22	62	63	54	68	N.W.	S.W.	2	2	Og.	Ogd. (4)
18	S.	30.26	30.21	61	70	56	72	S.W.	S.W.	2	2	Bcm.	Bcm.
19	Su.	30.02	29.90	67	73	57	74	S.W.	S.W.	3	4	Bc.	Bcp. (4)
20	M.	29.82	29.72	63	71	50	72	S.W.	S.W.	4	5	Bcm.	Bcm.

ORIGINAL PAPERS.

OCTOBER, 1838.

NEW LIGHTHOUSE AT VALPARAISO.—*Directions for entering the Port.*

THE point selected and approved of by His Excellency, the Commandant-General of Marine, where the light-house is actually building, 1,200 yards W. by S. $\frac{1}{2}$ S. from the outer and northernmost rock out of water, called the Baja, is in the latitude of $33^{\circ} 1' 00''$ S., and N. by W. $\frac{1}{2}$ W., one mile and a quarter distant from the Custom House of Valparaiso.

The lighthouse is constructed with wood, of a rectangular form, twenty-one feet square at the base, and fifty-five feet high to the foot of the lanthorn, where it is eleven feet square at the cornice. The lanthorn is twelve feet high and six feet in diameter; it is round and composed of iron, intended to burn oil, and to give a steady light of the natural colour, being of a magnitude sufficient to be seen ten leagues in fine weather. The building will be painted white.

When approaching Valparaiso from the southward, this lighthouse appears situated behind a round bluff point, from which it bears about S.E. distant about one mile and a quarter; on which bearing, vessels may run for it, and clear the point of Coromilla and its dangers, and continue that course till they open the port of Valparaiso.

In rounding the west side of the entrance of the bay, where the lighthouse stands, give it a berth of a mile till you have brought it south of you, and you will be clear of all dangers.

There is a small cluster of rocks called the Baja, that are always above water, and which do not occupy a space of more than sixty yards north and south, and about half that distance east and west. This Baja bears E. by N. $\frac{1}{2}$ N. from the lighthouse 1,200 yards distance. After passing the Baja you may haul into the bay and choose your situation from twelve to thirty fathoms, sand and oozy bottom.

Vessels bound for Valparaiso ought to make the land about the lat. $33^{\circ} 20'$ south: ten months of the year it will be to windward, as the winds prevail from that quarter generally in that proportion. If the weather be fine, you will generally make the back land a considerable time before you can distinguish anything on the coast by which you can ascertain your situation. The bell mountain of Aconcagua, which is situated about forty leagues from the coast, is remarkable, it being the highest among many, and is generally covered

with snow; the north-western part of the peak is uneven with several breaks in it: the opposite, or south-east side, is quite smooth and equal. When this peak bears N.E. by E. by compass, you are on the line from it to the lighthouse.

Another range of mountains, one of which is called the Bell of Quillota, lies about ten leagues back; it is an uneven ridge, the middle of which is the bell; and when it bears N. 60° E., (or N.E. by E. $\frac{1}{2}$ E. nearly,) it is also in a line with the lighthouse.

These mountains being the first land seen, are generally a good guide to lead vessels towards the lighthouse, and with the above directions to the anchorage.

Vessels in making the land further to the southward, will not see the light, if within five or six leagues of the land, as Coromilla point must bear to the eastward of N.E. before the light opens outside the before-mentioned bluff.

In coming from the northward, and making Quintero point, which bears N. $\frac{1}{4}$ W. from the lighthouse eighteen miles distant, take care not to get within that distance in the night, as there is a large ledge of rocks S.S.E. from Quintero point, about four miles distant, with a channel within it, but too dangerous to be attempted by a stranger.

The above-mentioned lighthouse it is supposed will be of the greatest utility in preventing vessels from passing the port both by day and by night, which frequently has happened, causing them several days to regain their latitude.

The lamp is expected to be lighted on the 1st of August, 1838, and stands on an elevation of 250 feet above the level of the sea, making, with height of lighthouse, and three feet and a half to the lamp, 308 $\frac{1}{2}$ feet.

Bearings of several Objects from the Lighthouse by Compass.

Quintero point, N. 3° 30' E.

Point of Concon, N. 22° 30' E.

Bell mountain of Aconcagua, N. 57° 30' E.

Bell of Quillota, N. 60° 00' E.

Signal staff on the Hill south, 3,800 yards distant.

Outer rocks, or Baja, above water, N. 72° 00' E. 1,200 yards.

(Signed)

PAUL DELANO,

June, 1838.

Captain of the Port of Valparaiso.

VOYAGE OF H.M.S. IMOGENE, CAPT. H. W. BRUCE.—*Sandwich, Tahiti, and Pictairn Islands.*

(Continued from page 587.)

HAVING the most important objects of our voyage to execute, we sailed on Saturday afternoon at six, the 9th of September 1837. We had light baffling winds at first to clear the land, but about eight, opening the channel between Dominica and St. Christina, we took up the easterly breeze, which again failed us towards midnight; giving Dominica a wide berth, we steered to pass half-way between Nooahevah and Rooahogah, and at 2 A.M. on the 10th, had a heavy squall from the eastward after calm, the wind and weather then settled and continued fine.

We saw all the islands of this group; they are all high, very picturesque, particularly Rooapoah; the lofty peaks of the latter greatly excel in beauty and variety of form, those of the much famed Arran. Desirous to see the reef called "Clark's," we shaped a course for the spot, and passed over it on the afternoon of Sunday the 10th, about three o'clock, but could not observe anything uncommon; the small sandy isle, (which we did see) to the eastward of Robert's Isle, may have been misplaced for the reef of Clark.

Proceeding on a N. by W. course, we kept a good breeze from N.E. by E. to east, with a westerly current setting twenty-five to thirty miles in the twenty-four hours; about 3 P.M. September 13th, we crossed the equator in longitude $142^{\circ} 40' W.$ with a moderate breeze at east, going $8\frac{1}{2}$ knots, and that evening the wind came round to S.E., a fine breeze, beautiful clear weather with a smooth sea. This continued to Friday, September 15th, when the wind fell light, baffling, and sometimes calm with very heavy showers of rain. These calms and baffling winds lasted during seven successive days, in which time, we made only 220 miles. We then got the wind moderate from S.E. to east, with two days of heavy tropical rains, and at midnight of the 23rd, got the N.E. trade; thus having variables from latitude $5^{\circ} N.$, longitude $144^{\circ} W.$, to latitude $12^{\circ} N.$, longitude $145^{\circ} W.$ The westerly current continued from twenty-five to thirty miles in the twenty-four hours to September 17th, when it proved easterly twenty miles in two days, and then was not perceptible. We caught two sharks on the 19th of September, and on the 20th harpooned a fine dolphin which proved good food. The heavy rains here were very similar to those we experienced off Bahia, and struck the ship in the same way; not coming from any particular quarter, but closing in with a rushing sound, ahead, astern, and from both sides.

On Sunday, September 24th, we had a fresh N.E. trade and fine. The glasses still continued sluggish, and their indications useless.

Having the Sandwich Islands well under our lee, we steered N.W. by W. till the 26th, then W.N.W., and the breeze continuing steady, (though with showers of rain at long intervals,) we saw the Island of "Owhyhee" at 5 P.M. of that day; the east point bearing N.W. This obliged us to haul up N.N.W. which took the ship from twelve to twenty miles to the eastward of the island, (the night being dark and cloudy, the land was not discernible,) and again keeping away, we made and passed successively "Moowee," and "Morotoi," and at 10 P.M. 27th hove to under its lee. A strong easterly trade blew all night, and at 4 A.M. on the 28th, we bore up for Woahoo, ran along shore, and passed Diamond Hill, when a pilot came off, and anchored the ship half a mile E. by N. from the beacon of the entrance to the haven of Honolulu, in twenty fathoms sand, and it is remarkable, that from the day of our departure from Valparaiso until this day, we did not see a sail. Ships now never use the anchorage at Whytete bay, where Vancouver first anchored, that at the entrance to the haven being more convenient, and less insecure. The appearance of this island is entirely volcanic.

At daylight of the 29th, a strong trade still blowing, we weighed and stood off, then tacked and shot the ship through the narrows, furling everything: 300 of the natives (or Kanakas,) then tracked the ship up the haven, (coming to their middle in water on the coral reef,) and with the assistance of whaler's boats, hauled her to an inside berth by 8h. 30m. when we moored with the bowers in twenty-one feet water, bottom very stiff mud, forty fathoms of cable each way.

Every facility is readily afforded by the government here to ships coming in, and the haven of Honolulu is perfect. We had to let go the anchor twice in tracking up, in consequence of the warps being cut by the coral, but there are also warping buoys which proved most useful.

Where the Imogene lay, the width of the haven is about 120 fathoms, and the passage at its narrowest part, is twenty fathoms; the depth of water is from four to six fathoms, except on one narrow ridge, which only yields three and a half, the river which runs into the harbour forming a deposit, may alter this. Our distance from the nearest wharf, (of which there are three good ones,) was eighty fathoms, and from the beacon at the entrance about one mile. The rise and fall of tide, and time of high water, are altogether uncertain; the former never exceeding twenty-six inches, and imperceptible as a stream.

We found here one English, and two American whalers, besides two or three merchant vessels. H.M. surveying ship "Sulphur," had refitted here, and sailed about the 26th of July; and the French frigate, "La Venus," on discovery, had sailed at the same time; the latter did not come into the port. The king "Tamehameha

the third" was absent at Mowee, on which occasions he goes in his man-of-war, a barque of about 300 tons; the queen dowager, "Kinau," was also absent, so that the honours of the port, (which he does with kindness and dignity,) devolved upon her husband, "Kekuanao." He forthwith sent us a supply of vegetables, fruit, &c., and despatching a vessel to inform the king of our arrival, his majesty very speedily appeared in person to greet us: Kinau having returned a day or two before.

This port besides the best of shelter, affords everything that a ship can require, good water, easily obtained from a pump near the wharf, for which twenty-five cents per ton is charged by the owner; abundance of fresh beef at six cents, per lb. ($3\frac{1}{2}d.$) and vegetables three cents; fuel is expensive, though plentiful: turkeys very good at eleven dollars a dozen, fowls three dollars, ducks three, and very good potatoes $3\frac{1}{2}$ dollars the barrel; the dollar varies from $4s. 8d.$ to $5s.$: washing is one dollar a dozen, and very badly executed. The root of the taro, sliced, and roasted as potatoes are done, is scarcely inferior to that most superior of all fruits or vegetables, but it will not keep.

These islands only need cultivation to yield abundantly; but owing to the heavy exactions on the people, they have little inducement to industry. A native Kanaka cannot call anything his own, and of the produce of his labour, so much is demanded by the king, and so much also by his chief, that only a fourth is left as his reward*; besides a poll-tax of a dollar per annum for men, half a dollar for married women, and a quarter dollar for every child above four feet high. The people are a docile race, and under good government would prosper. The Christian religion is now generally prevalent among them, the marriage state is respected, and infanticide is unknown; yet the decrease in population is very great, there are about thirty-four births to ninety deaths, the sum-total of the islands being now estimated at 108,000, while in 1832 it was 129,000. The impure disorders originally brought here by civilized people are found, though not in so virulent a state, as at the Marquesas; and that most prevalent at Oahu, is of the least pernicious kind of the two. There are few English residents, but a number of disorderly seamen from the whale-ships that frequent the islands, who are for the most part dissolute and uncontrolable, and would require the constant vigilance of a ship of war to do justice, between the native government and them; frequently endeavouring to desert from their ships, and being a source of continual trouble. The Americans who are still more numerous, bear their share in these disorders. There are no English missionaries on these islands, but 140 Americans with their families. The native church has a large congregation,

* This grievance was noticed by Mr. Eardley Wilmot in a recent number. (Ed.)

about 3000 ; and the Bethel chapel, where the Rev. John Diel of the American independant church officiates, is well attended. The labours of these missionaries have been eminently successful, as is evinced by the advanced state of religion which prevails ; they seem to be men whose lives are dedicated to that object, and if they conceived, a rigid system of inculcating religious pursuit to have been originally indispensable, they now encourage as inseparable from true religion, the acquirement of habits of industry, and they teach general knowledge and the arts, and are desirous that the royal family and chiefs should have the advantage of instruction in political economy, which they so much require, to regulate their intercourse with the nations of the world, as well as to improve the condition of their own. Bathing, and the surf-board are now again indulged in by the natives. The schools are in a flourishing state ; 150 girls and 80 boys are regular in their attendance at the missonary school where religion, science, history and geography are taught, and the chiefs have also schools in their enclosures for those who cannot attend the former ; and another school independent of the mission, has from sixty to one hundred scholars, instructed with great judgment and care, as well in religion, as in every useful acquirement. The king Tamehameha the third, by Kanikeaouli, as also, Kinau, queen dowager his half sister are strongly attached to the English ; they are professing christians, and the king attended divine service on board the Imogene, the only Sunday that he was in port with us. They were all fond of coming on board the ship, and shewed intelligence and disposition to enquiry. Madam Boki, one of those who were in England also visited the ship. They are very desirous to have influential advice respecting the enactment of new port regulations, and as the government has sent to London a remonstrance against Lord Edward Russell's treaty, it would be well to send a fully authorized diplomatic person to put these matters on a fixed and indisputable basis. We visited the tomb where lie the remains of the royal persons who were in London. The coffins are in perfect preservation, and there are now five, and one of a child in the Royal Mausoleum, and a handsome French work-box with the usual apparatus, besides eau de cologne &c. for the use of the inmates. The reigning monarch, if his pursuits had a good direction ; would be an intelligent useful man, but he labours under many disadvantages, and cannot be considered free from dissimulation. He is married, but his wife is not held in any degree of consideration.

The Sandwich islands are very healthy, and our men found them so ; Oahu produces arrow-root spontaneously, cocoa-nuts, plantains, yams, and some oranges ; taro, indian corn, potatoes, and sugar cane are cultivated. There is an abundance of goats and pigs, the cattle were originally brought by Vancouver ; and horses which are nume-

rous were imported from California. Dogs are fed and eaten here as a delicacy; but the natives live principally upon a vegetable diet, on which they thrive well, and appear satisfied with it. They are fond of the water-melon, which affords both food and drink, and their powee is very nourishing; it is composed of taro-root, pounded in a calabash. There are more natives clothed, than at the Marquesas, yet many males who wear nothing more than the loin's cloth; the head and feet quite exposed.

The British Consul, R. Charlton, makes this port most agreeable, by a kind welcome, and the refinements of social life with his lady and family. Many unpleasant duties, however, must devolve upon him, in his public capacity, and such being the case, he cannot be without enemies, the loss is theirs; the missionary families too, are disposed and anxious to be social with strangers to whom they conceive their attentions would be pleasing, and though only indulging in bread, or cake and water, at the utmost milk among themselves, rejoice to regale their friendly visitors with an excellent cup of tea, bread and butter, and sweets. It would be well to erect a lighthouse to the memory of Captain Cook on the Punch-bowl or Diamond hill; the light could not fail to be most useful to the shipping, while a more appropriate memorial to the honor of that celebrated navigator could scarcely be devised; two thousand dollars would be forthcoming at the islands, four thousand would complete the work well, and a very small rate upon ships using the harbour of Honolulu would serve to keep the lamps burning, and the whole in repair; stone and lime are both plentiful.

To run along the edge of the coral reef outside, keep Diamond hill E.N.E. by compass, which will lead you clear; or a conical hill seen over the land, by being kept in sight, is a safe mark. From Sep. 29th to Oct. 12th in the port, we had the finest weather, only interrupted by two or three showers; the tops of the hills were never clear of clouds, and a thick dust frequently blows off the land. The latitude of Honolulu Fort is $21^{\circ} 18' 12''$ north, longitude from Greenwich $158^{\circ} 0' 30''$ west, time 1h 16' 24'' or $19^{\circ} 6' 0''$ west of Resolution Bay.

On the 12th of October, having received a letter from the hands of the king for King William the fourth, and parting on the best possible terms, at 2 P.M. we weighed, and canting the ship by a warp while we dropt the sails, she sprung away before a brisk trade, and in a few minutes the haven was cleared. The pilot is an expert one, and a good seaman; he goes by the name of, "Alexander Adams," and was one of the delegates at the mutiny of the Nore. I was informed that English whale-ships were likely to be found at the island of Hawaii or Owhyhee; Mr. Consul Charlton, was likewise desirous to proceed there on the public service, and I was most anxious to visit the place, and to behold the spot where

the lamented death of the celebrated Captain James Cook occurred: receiving the Consul accordingly on board, we directed our course towards Karakakooa Bay as nearly as a scant easterly trade would admit of; and after contending against variable winds; mostly light and baffling, though sometimes strong; we attained that anchorage just before noon of Sunday, Oct. 15th: a pilot having come on board, who is authorized by the governor to do so, brought the ship up in twenty fathoms with fifty fathoms of cable, half a mile off shore; and the breeze blowing in, though very light, the ship swung into eighteen. The extremes of the bay S. by E. and W.S.W. each about one mile.

The very high land of Owhyee prevents the trade wind from reaching the lee side of the island, and makes access to this bay difficult. A ship wanting to visit it, should make it direct from the S.E. and proceeding for Oahu, should haul out round its west end and keep to windward, but coming as the Imogene did, by bringing Karakakooa to bear E.N.E. about forty miles, a light S.W. wind prevails which will run you into the bay. This island has an imposing appearance, and is very high, its tops are seldom free from clouds, and it is steep too, though all its points come down very low. The anchorage is under cliffs 400 or 500 feet high, with good landing on one side, on a sandy beach; and on the other, on rocks of lava; one of which is pointed out as the fatal spot of Cook's murder. The height of the Mona Roa was ascertained by the late Mr. Douglas (from barometrical and trigonometrical observation) to be 13,430 feet; we saw it clear of clouds early on the morning of our departure, but it very soon became obscured.

After divine service on board, at 1:30 P.M. we landed with Mr. Charlton on the left-hand side of the Bay, at the village or hamlet called in Arrowsmith's chart, "Kowrowa," which is the place of Cook's fall. Two or three people came out of their huts to look at the strangers, but so strictly is the sabbath observed by these people, that no one addressed us, or offered to accompany us on our walk. Proceeding along a tolerable road, made over loose as well as solid masses of lava; we found our way up the steep hill under a burning sun, to wait on the chief of the district, a female called "Ka-peolani," and to visit the Missionary establishment, which is a branch of that at Oahu. Half way up the ascent is the monument erected by the Blonde to the memory of Cook; at the place where his flesh was burnt, which is the greatest honor these people pay to those held in most respect among them, and until the ill-fated navigator shewed himself to be but mortal, they thought him a Deity; whose loss they have never ceased to lament. This rude memento is composed of a post having a piece of copper on wood across its top, and supported by a cairn or heap of loose lava stones piled together,



the plate displaying, engraved upon it, the following inscription:—

“In memory of Captain James Cook, R. N. who discovered these islands, in the year of our Lord, 1778; this humble monument is erected by his fellow countrymen, in the year of our Lord 1825.”

Two miles of steep ascent altogether, brought us to the chief's house and the settlement, which possesses much picturesque beauty; but every living soul being in the church attending afternoon service, we returned to the ship and repeated our visit the next day, when we were most kindly provided with horses. The Christian religion is, through the exertion of these exemplary American Missionaries, flourishing throughout the island, and education for youth is particularly encouraged and attended to. I witnessed the admirable system pursued by the Rev. Cochran Forbes at this establishment, where are one hundred regular scholars (half of each sex) daily attendants; and a sabbath school besides of more than one hundred. They seem healthy and happy. “Kapeolani,” the chief is a sincere and active Christian, encouraging as well by example, as by precept, all those around her, to walk in the same course; and except among dissolute foreigners who often land here, the general tone of religion is more primitive, and perhaps more pure, than I ever witnessed. The Governor of the island “Adams” was absent, but young “William Pitt,” or, (by his native name “Lelewhoku” repaired to the Imogene to meet us. He is an intelligent youth, well conducted, and son of the “Krimakoo” or “Pitt” of Beechey, and calls the Governor Adams his uncle. Pitt dined on board with me as did Kapeolani. He took but little wine, (though I am told he is not always abstemious,) and Madam Kapeolani, would not taste a drop, neither would she taste tea or coffee; all these being considered by her religious instructors exciting and superfluous. With her I had much interesting conversation upon our common religion, its hopes, and its advantages, through the means of a very able interpreter. She questioned me particularly upon my belief (seeing that I did not pursue my aim with as much austerity as those among whom she dwells); made minute enquiries respecting my children, and the bereavements with which I have been visited; and when I explained to her my feelings with regard to them, to myself, and to her—that we all looked to the same glorious Redeemer, who has said (by his prophet) “Look unto me and be ye saved, all the ends of the earth,” she and her interpreter ended the conversation by both shedding tears. Kapeolani, then, knowing the interest I felt about Cook, announced that she could give me the spear which killed him; and which had been ever since, in possession of her deceased husband, and of her, but being very loath to part with it, they had, “kept their counsel;” she assured me that it actually penetrated Cook's

body: it is now in my possession. We all felt desirous to perpetuate the memory of the spot where the lamented circumnavigator met his untimely end, as well as the circumstance itself; and with this view having first obtained permission from the chief, one of the cocoa-nut trees was selected, which bore the marks of having been shot through at that crisis; and under the able and willing direction of Mr. Richard Thompson, master of the Imogene, a copper tablet was prepared, and with the following inscription punched upon it, was carefully nailed upon the tree, the upper part of which was then sawed off and brought to the ship.

“ NEAR THIS SPOT

FELL

CAPTAIN JAMES COOK, R.N.

THE

RENOWNED CIRCUMNAVIGATOR

WHO

DISCOVERED THESE ISLANDS

A.D. 1778.”



“ HIS MAJESTY’S SHIP IMOGENE,

Oct. 17th, 1837.”

This memorial stands 190 feet west of the fatal spot, and the observations there made are as follows; latitude $19^{\circ} 28' 0''$ north, longitude west of Greenwich by means of three chronometers $156^{\circ} 0' 40''$, and $1^{\circ} 59' 55''$ east of Honolulu Fort. Seventy hours having elapsed between the observations.

There is a well-attended and well-regulated school at “Kakooa” on the right hand side of this bay; and at “Lahaina” on the island of “Mowee” is a flourishing and ably conducted high-school.

This bay does not afford facility for water, which has to be carried a distance of five miles in calabashes, but other supplies are plentiful, and cheap bullocks are nineteen dollars the head, about $3\frac{1}{2}d.$ per lb.; poultry, including turkies good; and two sixpenny cotton handkerchiefs will purchase one of the latter; pigs, are abundant; and goats, yams, sweet potatoes, pumpkins, cabbages, water-melons, &c. abound; and Indian corn, and sugar cane are cultivated; while figs, grapes, arrow-root, and the tobacco plant are seen to grow spontaneously.

Our time, and the remaining objects of our voyage yet to be accomplished, would not admit of our visiting the famed volcano on this island, the crater of which presents the largest surface known, being seven miles in circumference, and is fully described in the “Polynesian researches of Ellis.” We therefore took a reluctant farewell of this interesting bay, and tripping the anchor at 4 A.M. October 17th with a light land wind, our valued friend Mr.

Charlton left the ship, and with light baffling winds we shaped our course for the south point of the island: twenty-five hours' sail brought us to it, and getting a fiery trade at E.N.E. we made the best of our way on a S.S.E. course for the Society islands. No whalers had been recently at Karakakooa bay, unfortunately for them, as we saw five or six fine sperm whales the day on which we left it.

RANDOM RAMBLES, OR, THE MARINERS' CLUB.

By the time that Captain Weatherall had concluded his account of Patrick Walsh, the principal mutineer of the *Hermione*, we found ourselves nearing the North Foreland; and as he was there to give up the command of the vessel, having, as he told me, found a birth on shore, we both made our preparations for landing with some other passengers. On our arrival at Ramsgate, according to previous arrangement, the command being given to his successor, she proceeded on her voyage, and in the evening the worthy veteran and myself found ourselves comfortably seated at the "Mariners' Club," where it appeared he was no stranger, his excellent qualities being both known and appreciated by the worthy members of that body.

"Well, Weatherall," said the Chairman, "so you've broached your opinion on total abstinence, at sea, in the *Nautical Magazine*,—a periodical, which, I rather think, has no little influence on the tone and character of our navy. The extremists on both sides of the question are violent as usual, and our society are at loggerheads on the subject. We are as much bored now with grog or no grog, as cockneys are about Gog and Magog. Do pray, gentlemen, turn your accustomed attention to the craft plying through the gull stream into the Downs; take a survey of them, and give a spell to the argument."

"I say, Mr. Chairman," said Jack Bullet, "arn't we all told 'to do our duty in that station of life in which it has pleased God to call us.' Now, if the enemy came suddenly on a British admiral, is he to turn all hands down to prayer before he pipes to quarters, or leave that to the chaplain and idlers?"

"If there is time," said Lieut. Chantwell, (anticipating the Chairman,) "if there is time, Bullet, it would be more appropriate when the ship is all clear for action, and the matches alight."

"Before or after you've spliced the main-brace?" vociferated a forward middy.

"Young man," said Chantwell, "those things are too serious for your comprehension."

"Oh! oh," replied the youngster, puffing a broadside from his cigar as he evaded the subject by turning over the leaves of the

Nautical. "Here we are again, 'manning the navy,' by who! What! a merchant skipper! Seven years bound hand and foot in the Merchant Service; and then three years' training in Her Majesty's Navy, to qualify for a sailor! How would *you* like that, Mr. Bullet?"

"All stuff," said the old luff; "why I've seen as good a seaman made in five years as ever stepped between the stem and stern of a ship. I remember a fine fellow of a carter, who threw down his whip, last war, and volunteered into the sloop Skylark, because his team had three ragged blacks and an old grey, which made him the butt of his comrades at Dattle corn-market: if you'd seen that fellow spring aloft in the first month, you'd have thought he was scaling an apple tree. Why that chap was bos'an of a frigate in less than no time; less than seven years at all events. It an't length of servitude that 'ill make a seaman. How many sweepers and waisters have you and I drove about the deck, who had served three apprenticeships to sea? No, no, my lad; there are as many grades of sailors as there are trees in a forest, and they can't all be hearts of oak. Spirit, genius, and enterprise, tells at sea as well as on shore. Besides, we don't want all able seamen in a man of war's crew; a great portion must be ordinary, and perform duties which would degrade the crack mariner in his own estimation."

"Ah! these theorists!" said Capt. Weatherall. "Now, Seaward, you know I'm a privileged man among you, though *not in the service*, and I really do not believe the assertions of that 'merchant skipper' about the general bearing of naval officers. The ridiculous distinctions he speaks of are merely imaginary. Merchant captains of education, who choose to make themselves companionable, are cherished by naval officers, more particularly if they are men of scientific character and genius; but if any disrespect is shewn to that nerve of every *maritime kingdom*, and that nursery of seamen, its Merchant Service, it generally emanates from head-quarters; from those who should be wise enough to pursue a better policy. I well remember the feeling which thrill'd through many a brave and honest heart when the orders were issued to border the national flag—the dauntless union of Britain with the lilies of France. The English are a proud and patriotic people, Mr. Seaward; and this was an indignity offered to their merchant princes. Had not their ships fought battles under that banner so sacred in their estimation, which would have done honour to any navy in the world? Might not similar exigencies again take place when most unexpected; and are they then to betray to an enemy that they are not men of war by the distinction of their flag? Was any farther distinction necessary between His Majesty's Ships, and those of his brave subjects, than already existed? Had they forgotten the records of history when the royal standard of England, and the Lord Warden's banner,

floated on the breeze together? when the Cinque Ports and others, the merchants of England, at their sovereign's call, boldly met and subdued that sovereign's enemies, furnishing at their own especial cost, our naval armaments. If extremities should come on, then would you see that union jack (degraded although it may be by its useless border,) again spreading its bright glories to the wind; your merchant steamers converted into gun vessels for the protection of your coast, and surrounding it with a wall of fire; or, as I once heard the master of a collier reply to the bombast of a yankee, 'Yee mon bring as mony fire-boxes as yee will into the British Channel, we'll foind a match to fire to 'em.' Surely the more recent achievements of the East India Company were despised. Had Dance and Linois been at hand, such an infringement of the beauty of our national flag for her merchant shipping could not have been permitted. But was any farther distinction necessary? You had your pennants and St. George's ensign, and if so, why not have made the former a source of emulation; the Red Rose of England is a fitter emblem than the Lilies of France. A red-bordered jack for us, in preference to the white we have so often been opposed to. Scotland might have proudly encircled it with her favourite blue, and Ireland have thrown around it her boasted insignia, the green mantle of the Emerald Isle, and then——"

"Bravo, bravo, Wetherall!" vociferated Bullet, "when you saw a smart ship, or roguish looking steamer, you would be all anxiety to know whether it was the rose, the thistle, or the shamrock: whether it was the clan Scotia, Erin-go-bragh, or merry England, that had launched the gipsy forth. But, I agree with you Wetherall, and make it law that every merchantman of a hundred tons should carry a gun for signals and protection; the battery to be increased as to number and weight of metal in proportion to the capacities of the ship; the commander of such vessels to pass a regular board of examination, and to instruct their crew and apprentices to point their muzzles to *proper objects*; and then let war come, and Britannia the queen of the seas, under the favour of Providence, would still maintain her maritime supremacy. Oh! that we could get that white border stripped off the union, and put where it used to be—round our precious necks, to make us gentlemen again; for what, I say, old Wetherall, looked half so graceful as that white jack hauled down, and tucked under a fellow's chin for a comforter."

"Seven years!" ejaculated Chantwell, mournfully; "What a serious item in the average duration of human life! Seven years of teeth-cutting, nurse-scolding, measles, *et cetera*; seven years of mental slavery under a tyrannical domine,—such was my lot; another seven years of bodily training, scupper clearing, bale stowing, and severe labour, attended by all the apprentices' privations in a merchant-ship; and then at twenty-one, when the buoyant spirits of

early manhood expect to run the gauntlet of chance as a sailor; impress or no press! war or peace! lash him down to three years' restraint in Her Majesty's navy! Who the deuce will send their children to sea? What boy of spirit will go? Poor lads—parish apprentices may be thus enslaved, even by the advocates of negro emancipation; but long before their time of servitude expires they will fly the approach of coercion, and seek a refuge under the first foreign flag that will receive them. Ah, Mr. Chairman, this impress is a difficult question!"

"It is," said Weatherall, "one of those miseries which war inevitably brings in its train. As well may you expect a hurricane to pass away without its withering effects, as that the wild storm of human passions in war should have no where to spend its fury. It invades alike the quiet roof of the landsman, and the floating domicile of the mariner; and I think the former, under the pressure of military conscription, the worst feature of the two. You take, or profess to take, seamen inured to the duties of their profession; and in most cases they are removed to a service where every temporal comfort is superior to those which they leave; but although this restraint is a hardship, it is of a different complexion to that which drags a novice from his rural labour, to march and counter-march. The seaman has been used to separation,—the rustic takes his first and painful farewell; the seaman is already trained,—the poor ploughman has everything to learn, and may well shrink from the severe discipline of the drill sergeant, for it must be difficult indeed to mould a man into an opposite character from the inveterate extremes of habit."

"I do believe, Weatherall," said Chantwell; "that if a specific period was assigned to our service, and strict faith observed, we should have less difficulty in manning our fleets in time of war. Give volunteers a shorter period than pressed men, but be strict and just with both; establish a fund in the Bank of England, where a moiety of their pay will be accumulating with interest; add to that a certain pension increasing with every seven years they remain. Men who launch from the shores of their country to brave wounds, imprisonment, or death in its defence, ought to be thus considered—"

"And," interrupted the midly; "let's have a more equal distribution of prize-money, Mr. Chantwell, deposited in that said fund. Why, because you wear an epaulet and the captain two, should the enormous inequality exist, to say nothing of the injustice of the prize tax? Let the lubbers we fight for bear the burthens; they have their feather beds to rest upon. Then there are your agency fees; let the clerks be well paid for transacting our business; John Bull ought to keep our debtor and creditor accounts for us while we fight his battles, and keep the enemy away from his fireside."

"Bravo again, youngster!" re-echoed Bullet; "they never found any difficulty in manning a privateer with choice seamen. You

remind me of old Cochrane, Sir Sydney Smith, and many of our worthies, whose dashing craft never had occasion to press for men; they made a capstan-head sharing of trifles occasionally, and threw in their own emoluments among their crew. They were none of your puling, whining croakers, who thought old Dibdin's strains an abomination, and that a British tar must turn monk, or weep over his tainted water-cask for the sins of his country; in lieu of throwing a dash of rum into it, to cheer his spirits and keep off the mulligrubs."

"Come, Come," said Weatherall, "don't be harping again upon that string, friend Bullet, British true blues were never astern of the landsman in their trust upon Providence, that would be unnatural. The tree removed to a different clime and soil may alter its blossom, but it must be known by its fruit, and you never found anything like cant in the Hero of a hundred battles—yet how was *he beloved*? Never shall I forget, when a youngster, reading the narrative of the Nile, that rescue of drowning foemen by Britons, when L'Orient's fate was written in characters of bursting flame upon the midnight wave. But, above all, that glorious telegraphic signal of Nelson's, the heart-felt scene of pious gratitude displayed at early dawn: 'it having pleased Almighty God, to grant to His Majesty's arms a complete and decisive victory, it is the admiral's orders that the whole fleet immediately offer up a thanksgiving.' Time had not elapsed to clear away the wreck and carnage; the order was instantly obeyed! The sun rose upon a scene of awful humiliation, as the deep-toned voice of the unscathed, mingled with the tremulous accents of the wounded. Publicans and sinners as we all are—think, you, Bullet, that the god of battles would allow that earnest acknowledgment of his mercy, to sink into the deep?"

"Never, never;" said the veteran; dashing a sparkling gem of feeling from his furrowed visage; "I remember it well, Weatherall, and the officers of L'Orient, to whom brave fellows, our good admiral had returned their swords, they joined us in prayer; and one of them observed to our commanding officer, 'that it was no wonder we could preserve such discipline in action, over men whose minds were so earnestly directed to their Creator immediately after it.' Oh, that Navy!—those days! but let's drop this, it savours a little too much of the sentimental, Weatherall; the auncient marinere after all our fuss: let's drop the argument, and with the chairman's permission, give us your ditty to the tune of that good Old English Gentleman, all of the olden time.'"—

"Silence, Silence, gentlemen," from the chair.

"Come, Mesmates bold, one story told, let's hope it an't too late,
To spin another cosey yarn, 'bout England and her State:
How best to parry off the blows, which round her bulwarks wait,
And some day threat, to call her tars, to danger or to fate,—
Like the brave Old English Mariners, all of the olden time.

"No dandy airs, our good old tars, with Howe or Duncan knew,
But jackets long, and pockets strong,—behind a swinging queue:
Old Hood and Jarvis slued their quid,—those heroes of true blue;
And Nelson's name, a wreath of fame, around our Navy threw—
Like brave Old English Mariners, all of the olden time.

"Now rigg'd in tights, what precious frights, when ordered up to tack,
Sea-lawyers all, at sheet or fall,—our lads have too much slack;
With tea-kettles and coffee-pots, they throw us all a-back,
And swear no grog shall go to sea, to help our jokes to crack—
Like good Old English Mariners, all of the olden time.

"But what have sailors done, I say, now glory calls no more,
Or landsmen quail, while statesmen hail, to launch from Britain's shore,
What tho' no Frenchmen dare our flag, and bid our great guns roar—
Our spirits yet, are *waterproof*, true hearts we have in store—
Like good Old English Mariners, all of the olden time.

"Then hold your cant, what do ye want? our ship's with parsons man'd?
Or take from sea, that liberty, which lubbers have on land.
Let water-grinding steamers ply, under such weak command,
In *vapours* deal, and paddle-wheel, but here we take our stand,—
Like brave Old English Mariners, all of the olden time.

"Thank God! Our wives and sweethearts, they don't deny us yet,
Or shut us out, at ball or rout, from Nancy, Poll, or Bet;
But how my boys, can they rejoice, without some heavy wet,
If we don't treat 'em as of yore, they soon will us forget,—
With the good Old English Mariners, all of the olden time.

"When dangers threaten'd good Queen Bess, she threw all fears away,
Her duck and Drake, made foemen quake, her seamen won the day:
And we've a maiden Queen my boys, will never shun a fray;
Then sing and toast, Old England's boast,—God bless Victori-a,
Like the brave Old English Mariners, all of the olden time."

"So, Mr. Seaward," said the chairman, after Captain Weatherall had concluded his song, and the usual chorus had been quietly *washed* down, "it is said, that the merchants of London are willing to support the views of those philanthropic naval officers who have been advocating the cause of British merchant-seamen."

"There was a goodly show at a meeting, the account of which I see in the *Nautical*, there before you."

"Yes," said the lieutenant, "and the very first thing they ought to do, should be to restore them their old privilege of unlading the ships, which they have successfully navigated, of unstowing the cargo which they have stowed abroad, leaving the rigging to the old worn-out tars."

"To be sure," added the chairman, "and not turn them adrift as they do."

"What! and prevent them from going straight to their friends on

arriving ;" interrupted Weatherall. " Let that alone for the present, the subject of impressment is the most important question, and depend on it, the State, either in time of peace or war, must not concede the right of demanding the services of every adult male in the realm in times of necessity."

" Aye," interrupted Bullet ; " make impressment illegal, and if a war suddenly breaks out your fleets will be burnt in port by steamers, before new levies of bluejackets could be gathered to their respective vessels."

" It has, doubtless, a debasing tendency ;" continued Captain Weatherall : " impressment or enlistment for life at once stamps the brand of slavery on the mind, and the only alternative left is to cast the shackle and bolt. Hence that desertion which was once so common in our fleets. Isn't it so, Chantwell ?"

" Decidedly the first cause," replied the lieutenant ; " and almost anything would be better. The system of entering boys, I think is good : but make your men-of-war popular in the mind of the merchant-seaman, and what the ' skipper ' says in the *Nautical* is right. There is no comparison between the two services in discipline, regularity, cleanliness, moral obligation, and all the comforts which attend them."

" There is a powerful bent," continued the captain, " a disposition not confined either to those of the sea-coast, in the youth of this country ' to go to sea,' as it is familiarly expressed. Fortunate it is for the ' sea-girt isle' that so it should be : indeed all islanders are attached to the ocean in spite of its terrors ; perhaps it is the natural effect of situation and familiarity with the element, and this has done its part towards placing the trident of Neptune in Britannia's hand. Hardihood and a resolute spirit characterize her sons, and they are already at home on the wave. I remember a lad who had been a basket-maker, and shipped on board a barkey I once sailed in. He was not more than fifteen years of age, but the very first gale we were in he assisted in furling the sails, and continued during the voyage to do his duty aloft, and he soon did it cleverly. This lad, taciturn and steady in his disposition, I have no doubt in three years became a good seaman ; his work, as the boatswain used to say, ' came as natural to his fingers' ends as his grub to his mouth."

" A great deal has been said," continued Wetherall ; " of the degraded nature of the seaman, but due allowances have not been made for his want of education, and for the peculiarity of his situation, estranged as he is for long intervals from domestic scenes which, if they do not soften the heart and polish the manners, have their value in the estimation of all classes of persons. Much of the recklessness, folly, and vice of the seaman may not indeed be due alone to the peculiar mode of life which he is condemned to endure, but to a culpable neglect of his interests hitherto by those who have profited

most by his services, as well as to the force of bad example, and too often bad usage of those who command him."

"Well, whatever may have been the effect of his treatment which he had formerly to brook in the King's service," said the lieutenant, "his condition now for a long time has been attended with a parental care."

"No doubt," continued Captain Weatherall; "it is, I believe, everything that could be wished. But depend that a wrong impression has been entertained with respect to the faults and sins of Jack; the common labourer, the peasant, the city drudge, has far more; and he possesses good qualities not to be found in either. Improve him by all means, but don't make a fanatic, or a fool of him. I have heard some of these would-be-saints; and 'twas but the other day that I saw a rough, hard-a-weather, regular-built Jack, with a pair of kid gloves on!"

A general round of exclamation followed. "Yes, a seaman with white kid gloves! Now, a proper sense of duty is not incompatible with the situation of a defender of his country, although accounted by the law, a 'blood-thirsty' man, ineligible to sit on a jury; nor can one object to a reasonable degree of smartness in the dress of a sailor, who always in his own way was a bit of a beau, as far as his low-quartered shoes, broad ribbon strings, pigtail, (alas, gone with the Trafalgars!) and the close stern fit of his ducks; but a glove of any sort on his paw—why, Mr. Chairman, 'tis a rank abomination!"

"But what think you of the pension, Captain Weatherall, the reward for long services? Don't you think something of the kind should be established for the merchant-seaman?"

"By all means," returned the captain, "and it should be managed somehow or other by our merchants."

"I remember right well," said the lieutenant, taking up the conversation in support of the captain's opinion, "when I was not much taller than one of the Dean of Derry's lilliputians—a very lillipucaninny, as Mungo would say, I was crossing the Atlantic, and we had an active, petty officer on board, a bos'an, sans *pipe*, albeit his *call* was loud enough, for when he turned the watch up the effect on me was to make me run like a nigger into the cabin, believing that he was surely born to make a great noise in the world. Poor fellow, he is quiet enough now. But it was thirty-five years after this that I accidentally met with this same son of Neptune, who had made so perfect an impression on me in my juvenile days that I knew him immediately, and remembered his name. 'Well, old fellow, and how does the world use you now?' said I, accosting him. The old tar, who was sunning himself against the wall of a large warehouse, turned to me with an expression of surprise in his watery eyes, and replied drily enough,—'D—— bad, sir.' 'Indeed, I am sorry to hear that; I had hoped to have heard a good account from you since I knew you

as boatswain to Val Baker in the *Flora*.' 'In the *Flora*, why that's a long time ago, sir, and I don't remember you.' 'No, no, you can't,' said I, 'I was but a shrimp at the time; but tell me how it has fared with you since.' The old man turned his quid, and spun his yarn, the sum of which was that he had saved some money, and designed to sit down in peace the remainder of his days, when unfortunately he was persuaded by a harpy to entrust his money to him to be put out to good interest, but who soon after became a bankrupt, and left the old man penniless. Now, if he had had a pension instead, said I—

"Aye," continued the lieutenant, "he would have been all safe, Mr. Seaward. I could not help expressing my indignation, but the hoary-headed sufferer himself made no reproaches; he only said, 'I've for a long, long time, struck bonetta and dolphins; I've caught flying fish in my hand when springing over the gunnel, but these were my fair game, and they talk about sharks at sea, sharks indeed! May ——' he was going to utter an oath, but I stopped him. 'Well, sir, I never met with greedier sharks in the ocean, as I have met to my cost on shore. But, 'twill always be so, and its of no use grieving; 'what can't be cured, must be endured,' and there's the end on't. But I arn't altogether adrift, thanks to the merchant venturers, they had'nt the heart to see a poor fellow starve.' 'Then you're housed old man for the winter of life.' 'Aye, aye, sir, moored for a full due in the cove, as we call it—the alms-house: ' and why should not these receptacles for worn out seamen be established on a large scale in every port of England."

"That's just what I want to know, Mr. Seaward;" exclaimed Captain Weatherall; "These wealthy vent'urers in the plenitude of their prosperity, should think of the condition of their seamen."

"But," continued the lieutenant; "I took it for granted that my old shipmate had not been at sea for half a century, without having been impressed or volunteering into the naval service, and I asked him if he had completed his period of service, to entitle him to a pension; 'Lord love you, sir, I never was pressed, nor served a day on board of a man-of-war, and if I never did more than one foolish thing in my life, it was that, I was persuaded by others to steer clear of the very thing that would have served me in my old age.'"

"Well, and the other day I was applied to," said Captain Weatherall, "by an old seaman, to know how to go to work to recover some prize-money, due to him for services in Her Majesty's Ship *Ætna*, in the last American war. I asked him if he had a pension, his answer was characteristic—quite: 'Ah, no, sir, I was a fool, I was persuaded to buy a brush with a long handle! and I lost all my time.'—'What, you deserted you mean?'—'Aye, aye, sir, just so, and I have lived to repent it all my life after, and here I am worse off than any nigger, hard work, and short commons; my heart craves after the good old service; let 'em say what they will about it, I was

ungrateful, and that's the real truth.' I asked his motive for running away. 'None, sir, none at all, nothing wrong, captain kind-hearted gentleman; I stood by him when the Yankees shot him with a rifle; the officers were all good men, no fault whatsoever; but some foolish, restless chaps persuaded me to take French leave, and in an unlucky hour, I turned my back upon my bread, and my best friends, and I have suffered for my pains.' Now the pension, at the end of a faithful servitude, is just what is most desirable to prevent all this," added Captain Weatherall; "a man need never want a man-of-war if he pleases, and I am very sure the pension at the end of good service, is not only a just reward from his country but also an inducement to serve her well.'

THE MERCHANT SERVICE DISCIPLINE.

THE raging spirit of discontent and disaffection which prevails to an alarming extent throughout the merchant service has drawn asunder that bond of harmony and good-will, which once distinguished the conduct and character of British seamen. As a steady and impartial observer of this contaminating and contagious influence, I have no hesitation in saying, that the fury of its ungovernable course, has a fatal tendency to taint the loyalty of our sailors, and is rapidly urging forward to an utter subversion of good order and essential discipline. The present display of ill-will amongst seamen, is at total variance with their former conduct; pretended grievances are now held to be a justification for contempt and disobedience, and the signal for every act of lawless outrage. Discipline has been taught a fatal lesson—mutiny and insubordination have triumphed with impunity; and to regain the position, yielded by ill-timed cession to violence, must require the sternest measures. Past negligence, and present indifference to this all important subject, will then be aroused most fearfully, and complaints to the tribunals of justice, may ere long reach them written in characters of blood.

Seamen have ever required a steady, cautious, and discriminating control. It is the bounden duty of those in command to keep a watchful care over their habits, and to preserve that system, which shall, on the one hand, guard them from every wrong and oppression, prevent, as far as possible, any cause for grievance and complaint; and, on the other, to check insolence and disobedience on the first display; and, when any real grievance is respectfully made known, it should be attended to, inquired into, and impartially decided upon. Even handed justice, and the maintenance of resolute authority, constitute the palladium of naval discipline. Those cases of insubordination and mutiny amongst the crews of ships at Canton, establish the charges I have alleged against the character of seamen. The new

feature which their character portrays, is entitled to the most serious consideration, as it strikes at the root of all discipline, and sets authority at defiance in so menacing an attitude, that cases may easily be imagined, and will speedily ensue, when it will become the duty of all commanders and officers entrusted with life and property to protect, with every means in their power so important and inviolable a charge. If one mode of punishment fails in effect, another must be resorted to, even to the last fatal alternative, when a stern sense of imperious justice shall demand the life of one or more mutineers, rather than all should be involved in imminent peril under the lawless sway of a turbulent, and a refractory crew, who are ever prone to follow one daring excess by a still greater crime.

Seamen of the present day are guided and governed by feelings which condemn all authority, when the least restraint is imposed on a single act of disobedience or laxity of duty on their part; and when one of their shipmates has incurred the displeasure of his superior officer for skulking, or some offence, which ten years ago would have aroused the indignation of a ships' crew against the offender, this new impulse excites a spirit of revolt, and, as on board the *John O'Gaunt*, an open display of mutiny.* I attribute much of this fatal change to the unceasing influence of pettifogging lawyers on shore, and the baneful effects which result from having on board most ships, one or more *sea-lawyers*, who have imbibed a reckless contempt for all authority, and presume to put their own construction on every clause of our very ill-defined and imperfect code of maritime laws. Sir James Graham's Bill is their text-book; † every sailor has a copy of it, and they disregard the fundamental principles of those original laws, which are still binding and can always be appealed to, when high crimes and misdemeanors demand their imperative control.

And here, we reach that well known cause of past and present evil; and we cannot withhold the language of censure which casts a shame and reproach on the legislative councils of our common country. At this enlightened period of England's influential sway,

* In this case an order given by the chief mate, was refused obedience to by the seaman, who was warned and expostulated with by the captain in the mildest terms; after a due lapse of time, he was again admonished, when his determined defiance compelled his commander to put him in irons, and then the ship's company, to a man, advocated the culprit's cause, and refused to do any more duty: this defection took place on the coast of Palawan.

† This Bill is notoriously absurd and defective, nine-tenths of the clauses are in favour of the sailor; the residue bear with oppressive injustice on the owners and commanders. The penalties on the one side are chiefly prospective, and consequently uncertain; on the other they are always tangible and binding.

The evil under this enactment is so great, that sooner or later it will force a curc.

when commerce is the very source of her greatness and prosperity, the care and management of that commerce under the most critical circumstances which can befall it, is bereft of any recognized bond or principle for its government; no just or well defined tie to obedience on one side, and no sanction of due superiority and essential power on the other. Thus despised and neglected, recourse is had to the costly, uncertain, and tedious quibbles of common law.

Good seamen have nothing to fear from the severity of a punishment, which a noxious hue and cry attempts to eradicate from our naval code, and while it forms a part and parcel of the statute law of the land, must, for the well being of efficient order and control, be submitted to on board merchant ships. Corporal punishment should never be resorted to, except as a last resource, when all other means have failed of reclaiming an offender. Crimes at sea, and on board ships in harbour have been subdued under the infliction of the lash, to which the civil code attaches the penalty of DEATH; and it is well known that it was not obnoxious to seamen at one time; for, during the mutiny at the Nore, flogging was resorted to with ten-fold severity by the delegates themselves! Recent decisions in the courts of Westminster, Guildhall, and the Admiralty court, have proclaimed the legality and the efficacy of corporal punishment, and those commanders who have defended their conduct, rather than yield the sterling principles of discipline to the threats of worthless seamen, or still more disreputable attorneys, have been acquitted of every charge of tyranny and oppression.

But the process of common law is too uncertain, and occasions both serious delay and heavy expense; and, consequently, is inconsistent with the celerity and despatch essentially necessary in all maritime and mercantile affairs. This evil admits of a sure and certain remedy by the legislative enactment of such a code of laws, as will embrace every duty and every necessity incidental to the sea service; but efficient rules and regulations, with legal injunctions attached thereto, and well adapted to all capacities, cannot be enacted without the aid and suggestions of practical men, well qualified by a long experience in that profession. Maritime courts or tribunals, empowered to dispense the claims of justice with promptitude and vigour, are the next grand desideratum; and these should be established at home and abroad. But, until this great national question is scrutinized and amended, the mischief, now increasing with fearful and alarming progress, will surely cramp the energies of British seamen and lessen every confidence in their skill and enterprise. The present state and condition of our mercantile marine is derogatory to the character of Great Britain, and is fraught with evils which threaten to upset those standard principles of security and integrity, that once governed her system of navigation and commerce.

AMERICAN STEAM BOATS.

London, 23rd August, 1838.

Mr. EDITOR.—On perusing the paper on the above subject in your number for this month, it brought to my recollection that I had some time ago been furnished with various particulars of the first vessel in the table, at page 537, and had then made some calculations to compare her mechanical performance with the boats on the Thames, these I annex, should you consider them worthy of a place in your pages, they are as follows :

The De Wit Clinton has undergone more than one enlargement, and is now

	Feet.	in.		Feet.	in.
On deck, in length.	233	0	Diameter of Paddle Wheels	22	0
Breadth of Beam at the water line	28	0	Length of Paddle Board	15	0
Projection of gangway decks, each	18	0	Width of Paddle Board	3	1
Greatest width, including these	64	0	Diameter of Paddle Shaft	1	2
Depth in Hold	10	0	Length of stroke, (& 26 strokes		
Height of the Upper Deck	11	0	per minute)	10	9
Length of the Great Cabin	175	6	Diameter of Cylinder	5	6
Draft of Water	4	6	Thoroughfares of ditto	42 × 10½	

The nozzles have circular valves, four top and bottom, each 17 inches diameter, while the steam pipe is 24½ diameter.

Pressure of steam in the boiler, 20lbs., and enters the cylinder at this density, but is shut off by the throttle valve at half the stroke. The vacuum in the condenser, is stated at 12lbs. Consequently, pressure on piston, equal 32lbs., per square inch.

In reference to the great speed of the boats on the Hudson, I do not think the statements made are implicitly to be depended on. The distances, I apprehend, have not been accurately ascertained, and those assumed greater than they really are, give, when divided by the time on the passage, an erroneous result, neither has any of the statements put forth made an allowance for the effect of the current one way, nor for the eddy embraced in the other.

Our friends of the new world, are, however, not singular in this respect; I can recollect, when the "Thames" steam-vessel made her first passages from the Tower to Margate, the distance was most positively stated by the parties interested, to be from 95 to 100 miles, whereas, that ascertained by reference to the best ordinance maps, gave it only seventy-four miles. That vessel made the passage on an average in ten hours, equal to a rate of 7.4 miles; but, assuming the fictitious run of ninety-five, her speed was 9.5 miles per hour.

Were our neighbours' (they may now be so called,) statements put to similar tests, I apprehend the rates of their vessels would suffer considerable diminution.

I do not mean to imply that their boats do not go faster than those on this river, as there is every reason they should, from the immense power employed in propelling them, but it will be evident from the

following examination of the De Wit Clinton's performance that her machinery produces but a very minimum effect compared with that of this country's.

The cylinder, as already mentioned, is 66 inches diameter, ten feet stroke, with a pressure of 32lbs. on each square inch of the piston. By our standard mode of calculation, the power exerted is equal to 1,725 horses, but as the steam is shut off at half stroke, the power will be reduced to 1,460 horses.

The draft of water being 4 feet 6 inches, and the vessel 28 feet wide at the water line, her section cannot exceed 126 feet, supposing the floor perfectly flat, and the bilges square.

The distance from New York to Albany, taken according to American data, is 150 miles, and this vessel's quickest passage is said to have been performed in $9\frac{1}{4}$ hours, equal to $16\frac{1}{4}$ miles per hour.

Now for the expression of the ratio of effect to the power, we have $\frac{126 \times 16 \cdot 25}{1460} = 370$ ratio.

Some of our fastest river boats are said to have a speed of 13 miles in still water. I will, however, select one, the rate of which has been repeatedly ascertained at a measured distance on the bank of the Thames, and, as I happen to possess the particulars necessary to institute a comparison, although her velocity is only $12\frac{1}{3}$ miles per hour, I prefer facts to hearsay data.

Her beam is 22 feet 6 inches, she is flat in the floor, round in the bilge, with 5 feet 6 inches draft of water, the immersed section is 113 feet. This is something less than the De Wit Clinton, but both being adapted for river navigation, the cases are parallel. She carries nominally two sixties, which exert a power of 230 horses, with a pressure of steam in the boiler of 4lbs. on the inch.

Following then the same mode of examination, we have $\frac{113 \times 12 \cdot 35}{230} = 925$ the ratio of effect to the power in this instance, or 250 per cent above that of the American vessel; in other words, her velocity to equal this, should be 22·9 miles per hour instead of sixteen and a quarter.

The rate obtained ought, therefore, not to be so much matter of surprise, as that it should be so small with the amount of power employed. It would be interesting could the cause of this loss of effect be ascertained, whether it rested in the form of the vessel, or arose out of defects in the construction of the engine, or in both together. As I am however not likely to enlighten you or your readers further upon the subject, beyond mere surmise, I will not for the present take up more of your space or time.

I remain Sir, Your most obedient,

T. C.

We are much obliged to our correspondent "T. C." for his communication, and having just received from the hand of a friend a copy of the *Journal of Commerce*, a New York paper, in which we find this subject alluded to by Mr. Redfield, (well known to our readers for his valuable researches on hurricanes,) we at once transfer Mr. Redfield's letter to our own pages. We shall leave the question of superiority of speed in which the Great Western appears to be concerned, to be decided on some favourable occasion when the "flying squadron," alluded to by Mr. Redfield and the Great Atlantic steamer, meet with one accord for that purpose. But until a measured ground is actually run over, and we know how the maximum speed of the boats alluded to by Mr. Redfield has been ascertained, the "causes" of error, which he has so clearly pointed out will throw doubts over it. He himself admits that he has not gone more 12·8 miles per hour, which is little more than the ordinary speed of the American steam-boats. No doubt the question has been much mystified, both in this country and America, by the aid of the causes alluded to by Mr. Redfield, and the erroneous method of giving a vessel's rate per hour in statute miles, instead of geographical.

To Lieut. James Hoskin, R.N., Commander of the British Steam ship Great Western.

SIR,—I have examined with much interest the pamphlet which I had the honour of receiving from you yesterday, containing the captain's and engineer's log of your steam ship, the Great Western, on her first voyage between Bristol and New York.

Every friend of science and of human happiness and prosperity, must rejoice in the success of this great enterprise, in which you have engaged with so much honour to yourself and your enterprising associates; and none will accord to you and them, a more hearty meed of congratulation than he who now addresses you. Having for the last sixteen years been practically engaged in the operations and improvements of steam navigation, I can well appreciate the anxious responsibilities under which you and your associates have laboured, with such gratifying success.

There is one paragraph of the introduction by Lieut. Claxton, which is prefixed to your log, in which he enters into a direct comparison of the speed of the Great Western with that of the American steam-boats; and which I apprehend will be the subject of much comment on this side of the Atlantic. The paragraph is as follows:—

"With respect to speed, the American river steam-boats are said to be the fastest vessels afloat, but probably they are not faster than the best Margate, Herne Bay, or Gravesend vessels. The best authorities do not claim to speed in America, beyond fourteen

English statute miles per hour, or with an admitted four miles per hour tide up the Hudson (on which river their fastest boats ply,) of eighteen miles an hour. The measured distance between Blackwall and Gravesend, is more than twenty-two miles. The Great Western accomplished this distance, with the tide, in one hour and fourteen minutes, or at the rate of eighteen miles per hour. The tide, (it not happening to be the springs,) was not strong; the pilot called it a three miles tide. If we allow it to have helped the ship four and a half miles for the hour and a quarter, we shall have eighteen miles and a half, as the ship's performance in an hour and a quarter, or fourteen miles per hour. The log (common,) gave twelve and a half *knots*, and even better, frequently. The wheels' revolutions per minute agree fairly with the distance. The Comet, a few days previously, was, by the admission of her captain, beaten considerably by the Great Western; and the Pearl, when alongside her, and affected by the same strength of tide, (then against all) was well dropped twice. By the reports of trials between either the aforesaid vessels or some others of their class, and a new iron boat, it appears the distance above named, was, on another occasion, accomplished in an hour and twelve minutes. Hence the conclusion, that twelve *knots* and a half, is about the maximum speed attainable under the most favourable circumstances, and that we on this side of the Atlantic are upon an equal footing, in that respect, with our friends on the other."

There is, if I mistake not, some misapprehension prevailing both in England and America, in regard to the ordinary, as well as maximum speed of the best steam vessels. This is mainly to be ascribed to three causes; first the erroneous statements which often find their way into newspapers; second, to a mistaken estimate of the of the velocity of the tides and currents; and third, to the erroneous popular estimate of navigating distances, which, on nearly all internal or coasting routes in both countries, so far as my knowledge extends, are habitually over-rated. This may serve to explain on one hand, the extravagant claims to velocity which are sometimes put forth in regard to American steam-boats; and on the other hand, may account for the strange incredulity which has been manifested by Dr. Lardner, and others, not well acquainted with the structure and performances of the best American steam-boats.

The acquaintance which I have had with the navigation of the Hudson, by steam, during the last thirteen years, enables me to speak with confidence on some of the points involved in the above quotation, and, it is therefore, that I venture to address to you a few remarks on this interesting topic.

The ordinary working speed of the best class of steam-boats on the Hudson, may be estimated at fourteen statute miles per hour, *through still water of good depth* and that they are not unfrequently

run at a lower speed is freely admitted. But the maximum speed of these boats *is and has been for several years, equal to about sixteen miles per hour.** This result is not readily admitted in Europe by men professionally conversant with steam navigation, owing, (as I suppose,) chiefly to the fact, that they do not fully comprehend the means by which it has been effected.

What may be the actual speed of the best Margate, Herne-bay, or Gravesend steam vessels, *in measured miles through still water*, I am not prepared to say, except as I have always understood, that their means for attaining a high degree of speed, are not equal to those possessed by American steam-boats. In regard to the "admitted four miles per hour tide up the Hudson," I feel bound to state that the admission is extremely erroneous. The average advantage to be realized in a passage on flood tide from New York to Albany, is not more than from one to one and a half miles, per hour, or at the most, say twelve miles in a passage to Albany:—equal to about one-twelfth of the distance as performed under the most favourable circumstances. Some six years ago, and before the present degree of efficiency was arrived at, the passage was performed, as I have good reason to believe, in nine hours and eighteen minutes, including landings and making fast of the steamer at several places on the river; and it should be remembered that in navigating the shoals and narrows which are met with in some parts of the Hudson, not more than two thirds of the maximum speed can be attained. The length of this route, as navigated, is probably within 150 miles, although the shortest post road, on the eastern shore of the Hudson, is admitted to be 160 miles.

Not long since, I left New York for Albany on the *ebb tide*, when running at about two-thirds its maximum strength, and arrived at a point near the Jersey shore, opposite the opening at the north end of the island on which the city stands, in less than fifty-eight minutes from the steam-boat landing, which is just below Cortland-street, the boat having in this time her head way to acquire, and being laden with full fuel and an unusual freight; the wheels, which are twenty-four feet in diameter, running two revolutions per minute slower than their maximum rate. This distance on the course steered, measured accurately on the city map, is equal to 68,112 feet, or twelve and nine tenths miles in fifty-eight minutes. If two thirds of the velocity of only a two mile ebb tide, were now added to this, it would show this specimen of ordinary speed, to be nearly fourteen and three quarters miles per hour.† The greatest strength of tide, it should be noted is within twenty miles of the city.

The writer was one among the many thousands who attended your

* 13·9 knots or geographical miles per hour. [Ed. N.M.]

† Equal 12·8 knots or geographical miles per hour. [Ed. N.M.]

gallant ship to Sandy Hook, on her first departure from New York, and you can yourself testify to the crowded state of the American steamers, and of their upper or awning decks on that memorable occasion, and which seemed to cause them at times to run almost on their beam ends. These are circumstances, which, had they attempted it, would have precluded any fair exhibition of their usual speed. Nor am I at liberty to assume, that the Great Western was in circumstances more favourable for the exhibition of her locomotive powers. But in justice to the American steam-boats, the fact should be known, that while thus keeping company with your ship, several of these boats were running with but one inch of steam instead of twenty, and performing but eighteen to twenty revolutions per minute, with wheels of twenty-four feet diameter, which are ordinarily run from twenty-four to twenty-six revolutions per minute. The speed of these vessels, could, in a few minutes have been increased by an addition of some miles per hour, as was shown on their return to the city; the range of working power being, as I apprehend, much greater in the American than in the English vessels.

In thus declining to concede to the Great Western, a relative speed equal to that which is claimed by our worthy coadjutor Lieut. Claxton, or that which is ordinarily attained by all our best steam boats, it is believed that no disparagement is offered to the just claims to high excellence, both in naval architecture, and in the judicious combination of powers and capacities for ocean navigation, which is so favourably exhibited in the Great Western. Nor is it intended to propose any inquiries or comparisons, with a view of correcting the numerous and palpable errors, which abound in the American papers at this period, in regard to the intrinsic qualities both of our own and of British steam vessels. Should you however consider the comparative speed of the American steam-boats as not equal to the estimate herein made, I have no doubt that the managers of these vessels will cheerfully avail themselves of any fair occasion to perform in the presence of your noble ship, the more active duties of a flying squadron.

I am, dear, Sir, your's with the highest respect,

WM. C. REDFIELD.

New-York, August 8, 1838.

While on the subject of American steam-boats, we may as well lay before our readers the act which has recently been passed in the United States, to prevent the recurrence of steam-boat accidents for which our transatlantic friends are so celebrated.

AN ACT

To provide for the better security of the lives of passengers on board of vessels propelled in whole or in part by steam.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be the duty of all owners of steam-boats

or vessels propelled in whole or in part by steam, on or before the first day of October, one thousand eight hundred and thirty-eight, to make a new enrolment of the same, under the existing laws of the United States, and take out from the collector or surveyor of the port, as the case may be, where such vessel is enrolled, a new license, under such conditions as are now imposed by law, and shall be imposed by this act.

SEC. 2. *And be it further enacted,* That it shall not be lawful for the owner, master, or captain of any steam-boat or vessel propelled in whole or in part by steam, to transport any goods, wares and merchandize, or passengers, in or upon the bays, lakes, rivers, or other navigable waters of the United States, from and after the said first day of October, one thousand eight hundred and thirty-eight, without having first obtained, from the proper officer, a license under the existing laws, and without having complied with the conditions imposed by this act; and for each and every violation of this section, the owner or owners of said vessel shall forfeit and pay to the United States the sum of five hundred dollars, one-half for the use of the informer; and for which sum or sums the steam-boat or vessel so engaged shall be liable, and may be seized and proceeded against summarily, by way of libel in any district court of the United States having jurisdiction of the offence.

SEC. 3. *And be it further enacted,* That it shall be the duty of the district judge of the United States, within whose district any ports of entry or delivery may be, on the navigable waters, bays, lakes and rivers of the United States, upon the application of the master or owner of any steam-boat or vessel propelled in whole or in part by steam, to appoint, from time to time, one or more persons skilled and competent to make inspections of such boats and vessels, and of the boilers and machinery employed in the same, who shall not be interested in the manufacture of steam engines, steam-boat boilers, or other machinery belonging to steam vessels, whose duty it shall be to make such inspection when called upon for that purpose, and to give to the owner or master of such boat or vessel duplicate certificates of such inspection; such persons, before entering upon the duties enjoined by this act, shall make and subscribe an oath or affirmation before said district judge, or other officer duly authorized to administer oaths, well, faithfully, and impartially to execute and perform the services herein required of them.

SEC. 4. *And be it further enacted,* That the person or persons who shall be called upon to inspect the hull of any steam-boat or vessel, under the provisions of this act, shall, after a thorough examination of the same, give to the owner or master, as the case may be, a certificate, in which shall be stated the age of the said boat or vessel, when and where originally built, and the length of time she has been running. And he or they shall also state whether, in his or their opinion, the said boat or vessel is sound, and in all respect seaworthy, and fit to be used for the transportation of freight or passengers; for which service so performed upon each and every boat or vessel, the inspectors shall each be paid and allowed by said master or owner applying for such inspection, the sum of five dollars.

SEC. 5. *And be it further enacted,* That the person or persons who shall be called upon to inspect the boilers and machinery of any steam-boat or vessel, under the provisions of this act, shall, after a thorough examination of the same, make a certificate, in which he or they shall state his or their opinion whether said boilers are sound and fit for use, together with the age of the boilers; and duplicates thereof shall be delivered to the owner or master of such vessel, one of which it shall be the duty of the said master and owner to deliver to the collector or surveyor of the port whenever he shall apply for a license, or for a renewal of a license; the other he shall cause to be posted up, and kept in some conspicuous part of said boat, for the information of the public; and, for each and every inspection so made, each of the said inspectors shall be paid by the said master and owner applying, the sum of five dollars.

SEC. 6. *And be it further enacted*, That it shall be the duty of the owners and masters of steam-boats to cause the inspection provided under the fourth section of this act to be made at least once in every twelve months; and the examination required by the fifth section, at least once in every six months; and deliver to the collector or surveyor of the port where his boat or vessel has been enrolled or licensed, the certificate of such inspection; and, on a failure thereof, he or they shall forfeit the license granted to such boat or vessel, and be subject to the same penalty as though he had run said boat or vessel without having obtained such license; to be recovered in like manner. And it shall be the duty of the owners and masters of the steam-boats licensed in pursuance of the provisions of this act to employ on board of their respective boats a competent number of experienced and skilful engineers, and, in case of neglect to do so, the said owners and masters shall be held responsible for all damages to the property of any passenger on board of any boat occasioned by an explosion of the boiler or any derangement of the engine or machinery of any boat.

SEC. 7. *And be it further enacted*, That whenever the master of any boat or vessel, or the person or persons charged with navigating said boat or vessel, which is propelled in whole or in part by steam, shall stop the motion or headway of said boat or vessel, or when the said boat or vessel shall be stopped for the purpose of discharging or taking in cargo, fuel or passengers, he or they shall open the safety-valve, so as to keep the steam down in said boiler as near as practicable to what it is when the said boat or vessel is under headway, under the penalty of two hundred dollars for each and every offence.

SEC. 8. *And be it further enacted*, That it shall be the duty of the owner and master of every steam vessel engaged in the transportation of freight or passengers, at sea, or on the lakes Champlain, Ontario, Erie, Huron, Superior and Michigan, the tonnage of which vessel shall not exceed two hundred tons, to provide and to carry with the said boat or vessel, upon each and every voyage, two long-boats or yawls, each of which shall be competent to carry at least twenty persons; and where the tonnage of said vessel shall exceed two hundred tons, it shall be the duty of the owner and master to provide and carry, as aforesaid, not less than three long-boats or yawls, of the same or larger dimensions, and for every failure in these particulars, the said master and owner shall forfeit and pay three hundred dollars.

SEC. 9. *And be it further enacted*, That it shall be the duty of the master and owner of every steam vessel employed on either of the lakes mentioned in the last section, or on the sea, to provide as a part of the necessary furniture, a suction-hose and fire engine, and hose suitable to be worked on said boat in case of fire, and carry the same upon each and every voyage in good order; and that iron rods or chains shall be employed and used in the navigation of all steam-boats, instead of wheel or tiller ropes; and for a failure to do which, they, and each of them, shall forfeit and pay the sum of three hundred dollars.

SEC. 10. *And be it further enacted*, That it shall be the duty of the master and owner of every steam-boat, running between sunset and sunrise, to carry one or more signal lights, that may be seen by other boats navigating the same waters, under the penalty of two hundred dollars.

SEC. 11. *And be it further enacted*, That the penalties imposed by this act may be sued for and recovered in the name of the United States, in the district or circuit court of such district or circuit where the offence shall have been committed, or forfeiture incurred, or in which the owner or master of said vessel may reside, one-half to the use of the informer, and the other to the use of the United States; or the said penalty may be prosecuted for by indictment in either of the said courts.

SEC. 12. *And be it further enacted*, That every captain, engineer, pilot, or other person, employed on board of any steam-boat or vessel, propelled in whole or in part by steam, by whose misconduct, negligence, or inattention to his or their respective

duties, the life or lives of any persons on board said vessel may be destroyed, shall be deemed guilty of manslaughter, and, upon conviction thereof before any Circuit Court in the United States, shall be sentenced to confinement at hard labour for a period not more than ten years.

SEC. 13. *And be it further enacted*, That in all suits and actions against proprietors of steam-boats for injuries arising to person or property from the bursting of the boiler of any steam-boat, or the collapse of a flue, or other injurious escape of steam, the fact of such bursting, collapse, or injurious escape of steam, shall be taken as full *prima facie* evidence, sufficient to charge the defendant, or those in his employment, with negligence, until he shall show that no negligence has been committed by him or those in his employ.

APPROVED, July 7th, 1838.

A true copy compared with the Roll in this office,

A. VAIL, Chief Clerk.

Department of State, }
July 9, 1838. }

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PROCEEDINGS OF H.M.S. BEAGLE.—*Commander J. C. Wickham.*

H.M. Beagle, Port George the Fourth, 17th April, 1838.

OUR unexpected meeting with Lieut. Grey, has given me an hurried opportunity of informing you of our movements since leaving Swan River. Our cruize altogether has been a fortunate one, with the exception of an affair which occurred to poor Usborne, while employed in the examination of Roebuck Bay. A musket went off by accident about a yard from his back, and the ball passed entirely through his left side, leaving a space of nearly nine inches between the wounds; which considering his small figure, makes it a wonder that he was not killed on the spot. It deprived us of his valuable service for two months, but I am happy to say that he is now recovered.

I was afraid, at the commencement, that Capt. King's luck was to attend us, as on the night of our anchorage off Cape Villaret, one of those furious squalls, he so well describes came off the land at E.S.E., and although we had nearly eighty fathoms of cable out, our anchor broke like a piece of glass; and having previously broken one at Swan River, it was no very pleasing event. However, since that everything has favoured us; we have had frequent communications with the natives at different places, and all have been of a most friendly nature. Indeed they have invariably sought our acquaintance, by coming to the beach, and beckoning us to land; and whenever our parties have landed, although at times in great numbers, for the purposes of fishing, wooding, and watering, they have never drawn back, but have put themselves (unarmed) entirely into our power, and having never once expressed a wish that our arms should be laid down. Almost all that we have seen have had the two front teeth of the upper jaw extracted, and all were perfectly naked, with the exception of a small grass apron.

On the 4th January, 1838, we sailed from Swan River, and proceeded direct to the north-west coast. We reached the shoal soundings off Cape Villaret, on the evening of the 15th, without making land before dark, and standing on till our water shoaled to fourteen fathoms, we dropped an anchor to enable us to retain our position, with the view to commence the examination of Roebuck Bay in the morning. At daylight we were under way, and standing into the bay, we soon found it shoal and were obliged to anchor with Cape Villaret bearing S. 15° W., six or seven miles, and about three and a half miles off shore, in six fathoms at high water. The rise and fall we found to be eighteen feet at neaps.

Several attempts were made to get the Beagle further into the bay but we only succeeded in moving her five or six miles from our first anchorage. The examination was therefore commenced in the boats, and was soon found to be of small extent terminating in flats of muddy sand, which dried from one to two miles off at low water.

The shores of Roebuck Bay were carefully traced, without our discovering any opening whatever, thereby setting at rest the question respecting Dampier Land being an island.

From Roebuck Bay we proceeded to the northward, and found the coast to differ a little from that laid down in the charts; and thinking there might be some opening left unobserved by Capt. King, owing to his distance off shore, we narrowly examined every part of the coast as far as Point Swan; never being more than from two to three miles from it, and at times considerably within that distance, anchoring every night, which we were fortunately enabled to do owing to the favourable state of the weather.

The bay round "Sandy Point," which has been named Beagle Bay, in lat. 16° 50' S. affords the best anchorage on the coast; but it is exposed to westerly winds. The coast from Point Roebuck to Point Swan having been closely examined without the slightest appearance of even a stream of fresh water running into the sea from any part of it, and the weather being evidently about to change, the western monsoon setting in on the coast, the Beagle was moored off the first sandy beach round Point Swan, which place appeared to offer the best anchorage likely to be found; it was resolved by Capt. Wickham that we should wait a few days here for the purpose of rating chronometers, and making other necessary observations, and if possible completing our stock of water. Wood we saw was plentiful everywhere. This appears to be a very extraordinary part of the world, the whole coast on the western side of King's Sound, also the outer coast between Roebuck Bay, and Point Swan being entirely composed of sandstone; whereas the islands and all the high lands on the eastern side are entirely of quartz, and of so rugged an outline that it is a most difficult matter to proceed in any direction. The islands are almost void of vegetation, and the whole seem to be thrown up into such fantastical shapes as to lead

one to suppose this part of the world to be in the last stage of utter ruin and confusion.

We remained at our anchorage until February 9th, during which time we had constant bad weather, blowing hard from the westward between N.W. and S.W. with heavy rain, and much thunder and lightning.

This bad weather, although very much against our surveying operations, was favorable to us, inasmuch that it enabled us to fill up our water, which was caught by the awning and bailed from the hollows of the rocks. A well was sunk sixteen feet deep, and some feet below the level of the sea at high water, but there the soil (still of a sandy nature) was perfectly dry.

From Point Swan, we proceeded towards Sunday Strait, having previously ascertained, that, there was no passage fit for a vessel of any description between that and Point Swan, the whole space being thickly strewn with rocks, rocky islets, and reefs, nearly all dry at low water, and causing heavy races and overfalls as they became covered at half tide.

Owing to the unsettled state of the weather, we were obliged to anchor three different times under the large island, on the west side of the strait in exposed anchorages, but this trifling delay enabled us to complete Capt. King's plan of the place.

From these Islands, which, we have named Roe Islands, (after Lieut. Roe, R.N. the companion of Capt. King) we proceeded to Cygnet bay, and continued a close examination of the coast to the southward. Many good anchorages were found, but no appearance of streams of fresh water.

Having reached as far "Foul Point" Lieut. Stokes was dispatched with two boats to trace the shore further to the southward, and to gain some information as to the probable extent of the opening. He returned on the eighth day having succeeded in discovering that the southern part of King's Sound terminated in the mouth of a river or of an extensive lake, as at low water, the fall being thirty-six feet, the water was quite fresh alongside the boat, and running in small streams from the southward between the extensive flats that were left dry by the tide, and reached from shore to shore a distance of five or six miles without leaving a passage for a boat.

In consequence of this information, the Beagle was moved to the S.E., in which direction Capt. King had seen land raised by refraction, but which was found to be only eighteen miles distant; and very low. From this point the examination of the river was continued by Capt. Wickham, and Lieut. Stokes. They found it to be of trifling extent, but from the quantities of drift-wood and weeds suspended from the trees, twelve to fifteen feet over their heads, it must be subject to immense inundations at certain seasons of the year; and from the lowness of the land on each bank, as far

as we could see, the whole country must be then under water, for an extent of many miles. They proceeded about fifteen miles in a straight line S. by E., when their progress was impeded by the number of drift trees completely blocking up the passage. The river was then rapid, running in three or four small streams, occasioned by some islets and fallen trees. The banks were nowhere above twelve feet high, and the land on each side perfectly level. As far as could be seen from the top of the highest tree, quantities of rich grass covered both banks, and the country appeared in places to be thickly wooded.

The entrance to this river, which has been named "Fitzroy river," in compliment to Capt. Fitzroy, R.N., is in lat. $17^{\circ} 34'$ S., and long. $123^{\circ} 38'$ E., nearly. During the examination of the river, a boat was employed in tracing the shore to the eastward, which appeared to be a deep opening; as no land was visible there from the mast-head, and it was conjectured that a passage might be found there, connecting with Collier Bay. Like all other openings we had examined, it terminated in low flat land, thickly studded with mangroves, among which the tide flows a considerable distance, and at low water, the whole shore is fronted by extensive flats of soft mud.

From this point the shore of the main land has been carefully traced as far as Port George the Fourth, chiefly by Lieut. Stokes in the boats, who is perfectly satisfied that there is no stream of any consequence falling into the sea from any part of it. From Valentine island where the cliffs end the land is very low and continues so to the banks of Fitzroy river. I am afraid that this river is never likely to become of any service owing to its distance from the sea, and the risk in approaching it, occasioned by the strong tides among the islands of Buccaneers' Archipelago; but I am of opinion that if a party is ever to reach the interior of Australia it would be on its banks. The wood is nowhere so thick as to offer any impediment to such an undertaking, and there would be a certain supply of good grass. It appears that the inundations, which evidently take place at times, are in no way connected with the rainy season on the coast, as at our visit which was immediately after the rains, there were no recent marks of the country having been flooded. These overflowings might prove a serious evil as in many places there would be no escape but in the trees; the bed of the river is entirely of sand and gravel, therefore no sickness would be likely to arise from keeping on its banks.

On our passage from King Sound to Port George the fourth, we discovered a dry sand bank ten or twelve feet above water, that is not laid down in Capt. King's chart. It lies in lat. $15^{\circ} 19' 20''$ S. and long. $123^{\circ} 35'$ E. being about twenty-six miles N.E. by E. of Adele island. It lies in a direction about N.W. and S.E. the dry part

about a third of a mile long, but the whole extent of the breakers, occupying a space of about four or five miles in that direction which appears to be that of all the islands, reefs, sand banks, and tide rippings in this part of the coast. There is much uneven ground between Adele Island and this bank which has been named Beagle Bank.

A danger seen by Mr. Browse, in the *Lynher*, the vessel in which Lieut. Grey's party came to the coast, lies in lat. $15^{\circ} 26' 30''$ S. and long. $121^{\circ} 55'$ E. It is a reef about two feet under water. Another seen by the same person is in lat $14^{\circ} 4'$ S. and long. $123^{\circ} 30'$ E. was fallen in with on the second night after leaving Timor. This cannot be much out of position therefore, as the vessel had a good chronometer. It is an island about a mile in extent but very low, and was not discovered until about two cables length distant, when Mr. Browse sounded in ten fathoms. He again sounded when he thought himself about a mile to the westward of it; but had no bottom with forty fathoms. Lieut. Grey and his party returned from their expedition three days after our arrival here.

We are now to return to Swan River as we want provisions which are scarce at Timor, and only to be got in exchange for gunpowder. We are all healthy, but shall feel the good effects of a change of temperature which since our arrival on the coast has been rarely below 83° , and frequently as high as 92° , in the shade. From thence we shall go to Sydney to refit.

ON THE FACT OF SMALL FISH FALLING DURING RAIN IN INDIA.*

By Capt. C. W. Grant, Bombay, Engineers.

THAT such is the case is certainly the general received opinion; and I have met with many officers who profess to have themselves witnessed the fact, that is, that after a heavy fall of rain they have seen small fish jumping about on the terraced roofs of houses, and in other places wholly inaccessible to them, unless they had fallen from the clouds; but I never knew any one who had ever caught them in a water-tub or other reservoir, or had known them to fall on his person, as we have a right to expect would have sometimes occurred if such were the case; or that in fact would affirm that he had actually seen them falling.

I have myself frequently noticed little fish slapping about in puddles, on the top of a high table-land during and after heavy rains; but think their presence in such places as well as on terraces may be accounted for without resorting to so improbable an hypothesis as that of falling from the clouds.

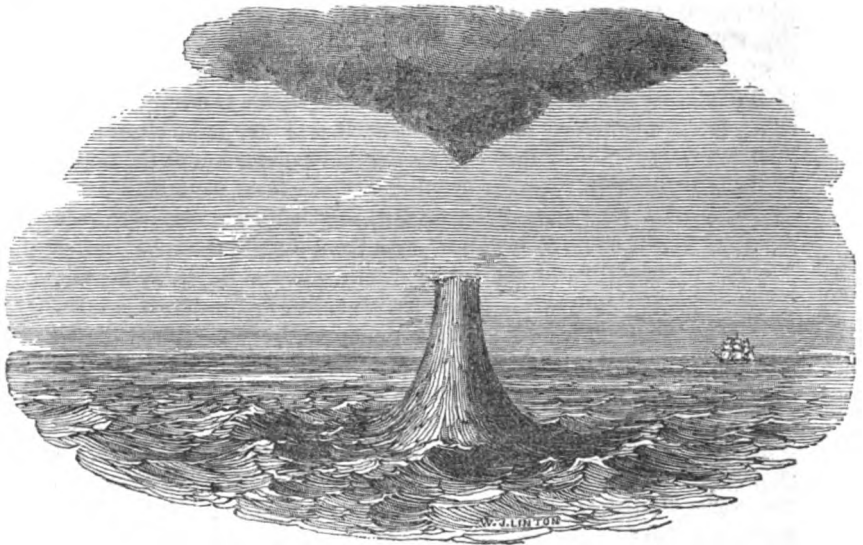
In most parts of India the beds of small rivers, as well as those

* From papers on subjects connected with the duties of the corps of Royal Engineers.

of the tanks or natural ponds, which are so numerous in the rainy season, become dry during the hot months, so that the small fish with which they abound, must all perish either from this cause, or by means of the numerous water-fowl and other enemies to which they become an easy prey; so that unless their spawn had the power of retaining its vitality under very untoward circumstances, it would be difficult to account for their re-appearance in such numbers, and that the spawn has this power, there are many reasons for believing. Among others it is even said, that some water-fowl who subsist on this substance during their migrations, void the spawn two or three days afterwards, the eggs retaining their vital functions unimpaired; (see, "Lyell's Principles of Geology"). It is, therefore, very probable that this spawn may adhere to pieces of stick or grass floating in the tanks or rivers, which on their becoming dry, are borne aloft by the small whirlwinds or devils, as they are called in India, and thus carried through the air for a considerable distance, and lodged either on the terraces of houses, or on any other apparently inaccessible places, (or the spawn may in itself be drifted along, mixed with the land of the dried up river beds); here they are swept by the eddy into the corners, gutters, or other protected spots; where they remain until washed out by the first fall of rain, which frequently lasts for many days. And when we consider how rapidly generation takes place in tropical latitudes, it is easy to suppose these little fish or fry might appear in such unlikely places. The constant heat of the atmosphere from the time of the drying up of the tanks &c. (that is during the hot months of April and May), till the first fall of rain, may perhaps account for the spawn or eggs retaining their vitality under such unfavourable circumstances.

The small whirlwind or devil above alluded to, has such power, that it frequently unroofs a house, carrying the thatch a great height into the air, as well as pieces of paper, matting, or any light substance; and frequently assumes the appearance of a large and lofty pillar of sand, moving at a steady pace across the plains, sucking everything of small weight into its vortex, and thus sweeping along for miles, being evidently acted on by two distinct forces: a spiral motion round its own axis, and a progressive or linear impulse; and might therefore possibly draw up these small fish into the air (as has been suggested by some,) whence they would fall with the rain: but as these devils occur chiefly, solely I believe, in the hot winds or dry season, and never during a fall of rain, such a mode of accounting for their appearance loses its weight; though I admit that these peculiar currents of air may pass over the sea as well as the land, having myself seen the ocean affected in a manner that can only be occasioned by some such cause, namely the surface drawn up in an irregular conical form to a

considerable height, the clouds bellying down as it were to meet it, and the whole advancing in a given direction, assuming somewhat this appearance :



The space between the clouds and the water being very strongly marked, so that it is just possible that a shoal of small fish swimming near the surface might be lifted out of the water by such a cause; but as they have been said to fall in the interior of Hindostan in places immensely distant from the sea, and at a time when the tanks &c., are mostly dried up, such an explanation of the fact is beset with difficulties.

The late Major Hawkins, of the Bombay Engineers, who built and put up the machinery of the mint at that Presidency, told me that he had paid much attention to this subject, but that he had never met with any person who believed in the idea of these fish falling from the clouds, who did not on further inquiry admit facts that enabled him (Major H.) to account for their presence in a more probable manner; his idea being that the fish generally contrived to work themselves up to these apparently inaccessible places, such as the terraces of houses &c., by means of the pipes or gutters by which the water is let off them, or by the angles or the corners of the buildings; it being well known that fish have an extraordinary power of surmounting obstacles to their progressive movement, as is evinced by the salmon and other species, particularly by the young of eels, which are said to be enabled to climb over the gates of a lock even when dry, by means of the slime on their bodies.

Be this as it may, I still think that either this explanation or that which I have suggested, is more consistent with our knowledge of nature and her laws, than that these small fish should actually fall from the clouds; though I believe we are in a minority on the subject, the fact of their actually falling with the rain, being the more generally received opinion.

Since writing the above, my attention has been called to a paper in the journal of the Asiatic Society of Bengal, for December, 1833, which bears so directly on this subject, that I am induced to transcribe it from an idea that it may not have come under the notice of the readers of this work.

It is written by James Prinsep, Esq., the editor of the journal in question, and is headed, "Fall of Fish from the Sky."

"The phenomenon of fish falling from the sky in the rainy season, however incredible it may appear, has been attested by such circumstantial evidence, that no reasonable doubt can be entertained of the fact. I was as incredulous as my neighbours, until I once found a small fish, which had apparently been alive when it fell, in the brass funnel of my pluviometer at Benares, which stood on an insulated stone pillow, raised five feet above the ground in my garden. I have now before me a note of a singular phenomenon on a considerable scale, which happened at Nakulhatty Factory, Zillah Decca Jelalpoor, 1830.

"Mr. Cameron, who communicated the fact, took the precaution of having a regular deposition of the evidence of several natives who had witnessed the fall, made in Bengalee, and attested before a magistrate; the statement is well worthy of preservation in a journal of science; I therefore make no apology for introducing a translation at length. The shower of fish took place on the 9th of February, 1830, in the neighbourhood of the Surbinedy Factory, Feridpoor."

"JAMES PRINSEP."

The depositions of eight or ten people here follow, of which I shall merely give extracts:—

Shekk Chandhusi Ahmed, relates in his deposition; "I had been doing my work in a meadow, when I perceived, at the hour of 12 o'clock, the sky gather clouds, and it began to rain slightly, then a large fish, touching my back by its head, fell to the ground. Being surprised, I looked about, and behold a number of fish fell from Heaven! They were *saul, sale, gregal, mingal, and badul*; I took ten or eleven fish in number, and I saw many other persons take many. I looked at heaven, and I saw, like a flock of birds, flying up, but there my perceptions were not clear enough: amongst these fish many were found rotten, without heads, and others fresh and perfect; and amongst the number which I had got, five were fresh, and the rest stinking and headless."

Shekk Punikullok, twelve years of age, declared, "While I was sitting in my own house, I perceived a number of fish fall from the sky, some of them on the roof of my own cottage, one of them was large, about *one cubit*; and *three seer* (3lb.) *in weight*."

Another man says; "I perceived a baduli fish, large, about *one cubit*, fall before me from the sky, after which I went further and found another."

Another says; "I observed a *mingal*, and some other fish, *badulis*, &c., of different sizes fall from the sky; I picked up about five or six of them to satisfy my curiosity, but did not eat them at all."

Another man deposed; "I found every part of my hut scattered with fish; they were *baduli*, *mingal*, and *nauchi*, and amounted to twenty-five in number."

Again, "some were fresh, but others rotten, and without heads." All accounts agree as to the time, 12 o'clock, and as to the description of fish.

With regard to the small fish which Mr. Prinsep found in his pluviometer, I think its presence is as likely to have been occasioned by either of the causes before-mentioned, as that it fell from the clouds; but, with respect to the circumstantial account of the fall of fish in the neighbourhood of Feridpoor, I have nothing to say. When we read of fish, a *cubit in length*, and *three pounds in weight*, falling from the sky, some fresh, others putrid, and without their heads, our reason is at fault, unless we suppose them to have been thrown up by some volcanic or gaseous eruption, such as is, I believe, mentioned by Humboldt, as having occurred in South America: but it is quite evident, that such a phenomenon can have no connexion with the fact of small fish commonly falling during rain in India; though I beg to state, that my suggestions as to the cause of their appearance in apparently inaccessible spots, are offered with the greatest diffidence, having been induced to give them solely with the hope of exciting discussion and information on this certainly interesting fact; as before we can arrive at a proper understanding of the subject, it would be necessary to learn from repeated observations, whether the fish that fall are of fresh water or marine species, and whether they are full grown specimens of a small class, or the fry of larger kinds; what the direction of the wind was at the time of their falling, as well as any peculiarity of atmosphere, as denoted by the barometer or thermometer, and other minutiae will naturally occur; my aim in writing these few remarks, being chiefly to detail the effects of these small whirlwinds called devils, that sweep across the Indian plains, and to show that they may be considered as models of those mighty hurricanes, that it has been the object of the foregoing paper to describe.

W. C. GRANT,

Captain Bombay Engineers.

NEW PILOTAGE BILL.

London, August, 1838.

MR. EDITOR,—Having observed in your Magazine for August, a letter from “a Skipper,” containing sundry remarks on a Bill lately before Parliament for the “Regulation of Pilotage throughout the United Kingdom,”—and those remarks having emanated from an individual who has thought proper to denominate everybody else “senseless,” who does not take a view of this measure similar to himself,—I think it but right to endeavour to shew our *sensible* friend, “the Skipper,” through the same channel of communication, how far he is wrong. I trust that under these considerations you will give a place in your valuable Nautical Miscellany to the few following remarks, which are not only intended to enlighten the mind of “a Skipper,” but all those who think on this subject as he does.

I have been a Skipper myself for a number of years, and the situation I now hold brings me in contact with many of that respectable body of men, and I know of none whom I should be more loath to offend than one bearing that name; I trust, therefore, I shall be able to go through the few remarks I have to make, without offending your correspondent, “a Skipper.”

“A Skipper,” says, “it is to be hoped that the two Members of the Board of Trade, and the Lord of the Admiralty, will be above giving it up, when, *no doubt*, a full enquiry had satisfied them of its useful tendency.” Now, sir, allow me to tell you that the full inquiry alluded to was made in the year 1836, before the Commissioners appointed by the House of Commons; and although that inquiry was carried on in a most unfair way, not one Pilot ever having been called before the Commissioners to give evidence, yet the Report of the Commissioners has been, strange to tell, entirely lost sight of by the framers of the Bill, with the exception of that part which recommends nearly the whole Pilot establishments of the United Kingdom to be placed under the dominion of the Honorable Corporation of Trinity House. Then if the two Members of the Board of Trade, and the Lord of the Admiralty, have thrown aside the Report of the Commissioners, where has the full inquiry been made? I will tell you: just from a few interested watermen! Mr. Powlett Thompson has permitted watermen to an interview on this Bill, but not one Pilot. So much for a full inquiry!

Our friend, the skipper says, that “there are not half a dozen of ship masters out of one hundred who know any thing about the navigation of our Ports,” and he alleges as the cause, “the constant presence of a pilot.” Really, Mr. Editor, when one thinks of the superior sagacity, this “skipper” arrogates to himself, it is no wonder he should consider every body else “senseless,” who did

not coincide with his dogmas. Has he forgotten, I wonder, that nearly the whole of our harbours on the sea coast are bar harbours, and those bars liable to continual shiftings; and the position of vessels in those harbours, and especially harbours which may be taken at night. Who can know the state of the bar, and the position of vessels in the harbour, but those men who are daily and hourly on the spot, and whose business it is to ascertain these matters exactly? Can a master of a vessel be expected to be acquainted with these matters after being absent perhaps for months? The "skipper" says, that he "has shown that the constant presence of a pilot, tends to render a young sailor indifferent about the management of a ship in narrows." He has shown no such thing, and I will undertake to show presently, that he has been writing upon a subject he either does not understand, or is under party feeling or prejudices.

He says,—“the swinging of a ship at single anchor in a tideway, is also a matter so perfectly unknown amongst the officers of a ship in the foreign trade, that I don't believe there is one in 500 who is master of that one manœuvre.” Now, sir, I beg leave to tell the “skipper,” that his assertion is not true, and I adduce a fact well known, especially to the pilots, that there are often from one to 200 sail of vessels lying in the Downs, and on the Mother-bank, where there are not ten pilots on board of the whole fleet, and yet we find those ships who have no pilots on board hold fast at their anchors as well as those who have. I conclude, therefore, that their anchors must be clear. This is a fact well attested, and well known; and it is also well known, that there are not two anchorages on our coasts, where anchors will be sooner fouled than the Downs or the Mother-bank, if proper attention is not paid to swinging the ship; and yet we find that those men, whom, according to our “skipper's” account, “not one in 500 is master of the one manœuvre,” can keep the ships clear of their anchors. I shall leave the explanation of the anomaly to the “skipper” himself.

It appears that some one has told him, “that even merchants and shipowners have petitioned against this bill.” That such petitions have been presented to the Legislature there is no doubt, and if the “skipper” had known half as much about the evil tendencies of the bill, and had half as much at stake as those merchants and shipowners have, he would have petitioned against it also. He asks with very apparent confidence, “where are all the masters of men of war instructed to navigate the ships in pilotage water?” I know nothing about their instruction, nor where they receive it, but this much I know, that they do not navigate their ships in pilotage water, and sure I am that the present frugal government would not pay a pilot for doing what they considered the masters of men of war capable of performing, as there is not, nor ever was, any bond upon a British man of war in our Ports to employ a pilot. It is

therefore, quite discretionary with the Navy to employ pilots, and yet they are invariably found to do so where pilots can be got, and indeed, so does almost every other order of shipping.* The colliers, and especially the coasters, have their special men to conduct their vessels for them on the Thames. There is no doubt some national cause for all this, which I shall endeavour presently to show. Speaking of a master of a ship, the "skipper" asks, "why should not he be pilot of his own ship? where is the evil to arise from all this?" I will answer these two questions as briefly as I can, and upon them, I would say hangs nearly the whole weight of that discussion which has taken place between the merchants, ship-owners, underwriters, shipmasters, and pilots, against the provisions of the Bill in question.

It is well known, that in all sea-ports, and especially when there are long intricate channels leading to them, that pilotage establishments are always found; and in all such establishments one of their primary rules is, that all persons who are appointed to the office of pilot, (independent of other considerations) shall serve a number of years by way of probation, before he shall be admitted to pilot all ships indiscriminately. For instance, in the port of London, any person applying to the Corporation of Trinity House for admission to be a pilot, must give the most unequivocal testimonials of his having been bred a seaman and having been three years, mate or one year master of a square-rigged vessel of not less than 150 tons register. And then he must serve two years as a river pilot before he can be admitted to examination for the north channel, and if passed, must serve three years before he is allowed to pilot a ship above fourteen feet water, and not then, until he has been re-examined. And after these two periods, should he be admitted to take his examination for the South and Queen's channels, and pass, he is obliged to serve three years more, and be re-examined, before he will be admitted to pilot a ship above fourteen feet water in these channels; making up a period of eight years before he is considered to have sufficient experience to pilot ships of all drafts of water; and it is well known that a similar regulation is followed in all the large sea-ports in the world. It would appear therefore, that it is and has been, from time immemorial, the simultaneous judgment of all nautical men in all countries, who have had the management of such establishments, that for the safety of the marine of those countries, such regulations are indispensable. And all marine laws relative to pilotage, have been framed to strengthen

* On reading the quotation I have made above, one would think (if they knew no better) that it was an established fact, that masters of men of war were pilots for the river Thames and the channels leading thereto, and that they were in the habit of acting as such; than which nothing can be more erroneous, as they do not, nor have ever done so, since the regular establishment of pilots in the Port of London; nor are they examined for those channels, and consequently are not expected to take upon themselves such an undertaking,

the hands and establish the judgment of such men who alone can be the proper judges of such matters, arising out of their long acquaintance with, and extensive and constant investigation of the dangerous and intricate profession or calling of a pilot. And I believe that no government in any marine country (our present government excepted) has ever attempted to set the skill and judgment of such men at naught.

A highly respectable gentleman, an M.P., and an elder brother of the Trinity House, (than whom no man living could know the subject better,) while under examination before the Committee of the House of Commons, in the year 1824, when the question was put, "What length of time did he consider necessary to make a man a complete Pilot?" he answered, "An age of experience." And I will appeal to every Pilot in the Port of London, who has been twelve years and upwards in the Pilot service, and sure I am there is not one but will conscientiously join in the honorable gentleman's assertion. A Pilot for the Thames, and the channels leading thereto, is always learning something in the way of his profession; and it is only lengthy and constant practice that will make him sufficient for the office.

But I will suppose a man to be seven years a Channel Pilot in the Port of London, and that during those years he pilots, on an average, twenty-seven ships each year,* which will be one hundred and eighty-nine; let us see now how many times the master of a ship or vessel, which is amenable to pilotage, will visit our channels during the same period. I have classed the number of vessels which employ Pilots in the following order, which is as near as I have been able to calculate, viz., one-sixth, their voyages average from three to four months; one-third, from four to six months; and one-half, from six months and upwards. According to this calculation the master of a ship would not have any practical experience in the river and channels leading from the Port of London above three times in two years, making, during seven years, about ten passages.

But has memory nothing to do with all this? Is there any one "senseless" enough to say that a man can be found, who, after a lapse of a number of months from those long, dangerous, and intricate channels, that would enter into them again with the same confidence as when he last visited them, knowing well, as he must, if he had any thing of the practical pilot about him, that the shiftings of the sands, and alterations of the buoys and beacons, which so frequently take place, would render it one of the most dangerous experiments he could try; and knowing well also that the mistake of taking one buoy for another (a mistake very easily made,) might be the destruction of the ship, cargo, and all on board. Will "a Skipper" say, there is no "evil to arise from all this?" I wish he

* This was my own average the first seven years I was a Pilot.

would take a few passages with me within the next six months, from the upper Docks to the Downs, or to the Isle of Wight. I have no hesitation in saying, if such were the case, I should be able to convince him that he knows comparatively nothing about the matter upon which he has been writing. He acknowledges that the finer or more delicate parts of Navigation are in the hands of the Pilots; how can it be otherwise, when it is proved that a Pilot has more practice in narrow navigations in seven years than a Ship-master can have in seventy. "A Skipper," amongst other things, seems to have very little feeling for his brethren. Does he not think that a Ship-master has abundance of anxiety and laborious perplexity within his own profession, without taking upon himself the duties of a Pilot, even if the nature of things would render him capable of it? Has he forgotten, that if a Ship-master was rendered eligible to pilot his own ship, according to the thirty-first clause of the new pilotage Bill, that he would be amenable to the tribunal of the Trinity House, if he committed any fault while acting in the capacity of a Pilot? Much might be said upon this head to show what an unthankful and dangerous position a Ship-master would be placed in by such a law, could it, by possibility, be carried into effect. That such a Bill might pass into a law I know is possible, but that it could answer the purposes contemplated by its contents, I know to be impossible.

"A Skipper" says, "I would beg, however, to state my deliberate opinion, that the proposed Bill will in no way injure the existing pilots; as it makes it imperative the taking a pilot by a much greater number of ships at present exempt, than it will in all probability release from the obligation;—no ships being actually and unconditionally exempted by the new bill, except such as carry the mails, the masters of which are to be presumed as qualified." It is passing strange, that individuals are so often found who take upon themselves to instruct others in matters they know nothing about, or if they do know, wilfully withhold the truth. If "A Skipper" had carefully read the proposed Pilotage Bill, he would have found its provisions at direct opposition with his assertion, as quoted above. For instance, all the exemptions in the old act from pilotage, are embodied in the new bill; and in addition, all those numerous vessels trading between Boulogne inclusive and the Scaw, which are now obliged to employ pilots, are to be totally exempted, provided they are not above 200 tons, which by the bye, I believe there are not any of the vessels which trade to those ports above that tonnage; but if the owner of such vessels find the exemption to their benefit, they will soon find vessels to answer the purpose. For the truth of these assertions, I appeal to the Bill itself.

Although I have been at variance with our friend the "Skipper" in that portion of his letter I have touched upon in the above remarks, I agree with him when he says, "I think pilots need not

fear that all at once we shall prove fit to pilot our own ships." I will tell him, that he has one powerful argument, amongst others, in favour of this position. It is a fact well known, that all foreigners who have availed themselves of the Reciprocity Act as regards pilotage, are exempted from the employment of a Pilot, if trading to or from the Baltic, Norway, round the North Cape and White Sea. And yet (if we take the dogma of "A Skipper" in our way) it is strange that the commanders of those ships and vessels have not taken advantage of the privilege thus afforded them, as not one of them are known to either come up or go down the North Channel without a Pilot. And be it remembered, that they have had this privilege for a period of fourteen years; and notwithstanding the shortness of their voyages, they do not find themselves competent, (and why do they not find themselves competent?) just for the reasons I have already given, the want of constant practice. And if such be the case with them, what must be the case with those who are absent from our channels for double and treble the time: If this be true (and I challenge contradiction) where stands the assertion of "A Skipper," that "the business of pilots will nearly disappear."

I don't know who this individual is, who calls himself "A Skipper," but I have a shrewd guess, that were he placed in circumstances where he had to act his own pilot, he would be found a miserable substitute in filling that office; as this is generally the case with those who are the readiest to *croak*. And, on the contrary, I have always found, that the cleverest shipmasters are those who place most value on the services of a pilot. Apologizing to you, Mr. Editor, for so long a letter, which I did not intend at the commencement, I close with a remark in contradistinction to the "Skipper," that I trust this Bill *will not pass*.

I am, Sir,
Your obedient Servant and well wisher,
A PILOT.

N B. I hope "A Skipper" will not confound me with "Nauticus," as I know nothing about him; and if he wishes my name and address, I will most readily furnish him with both.

Our correspondent will see that our object, as it always has been, is to give room for fair discussion, which on so important a question as this, is most desirable; and in following this course, it is fair to state, that, some changes which have lately been discovered respecting the Hook Sand, in the Bristol Channel, and the discovery of Captain Hewett of the New Channel into Yarmouth, already recorded in our pages, go far in support of our correspondent's argument. It is a remarkable fact, but a fearful one for navigation, that changes in the Bristol Channel have taken place within the last ten years, to the amount of seventy-eight feet in actual perpendicular height, that

is, a sand has grown up of a mile extent, now twenty-four feet above low water, where in 1828 there were from seven to nine fathoms water at low water. The same may be said off Yarmouth, to the amount of sixty-four feet. But after this we strongly recommend to the consideration of the Bristol people, as their port is still rising in importance, and will continue to do so, by means of their large and powerful steamers, whether it will not be wise in them to follow the example of Liverpool, and appoint a talented naval surveyor to watch the progress of changes which are so enormous as to appear to be beyond the limits of common probability.—Ed. *N. M.*

Naval Chronicle.

MONTHLY GOSSIP.—So, Mr. Editor, "Animal Magnetism" has received its death-blow at last. After living in this country about one year on the gullibility of John Bull, it is now declared a "mischievous delusion," and consigned to the shades. Thanks to the experiments of Mr. Wakley, and the efforts of the press, for rooting out the obnoxious humbug, and may its twin sister, called Homæopathy, and Hygeism, with its precious specific, Morrison's Pills to boot, share the same fate. But it was another kind of magnetism that I intended to speak of, viz., the local magnetism of Iron Steam-vessels on the mariner's compass, to which I alluded in my letter in your August number. The architects of Iron Steam-boats may rejoice in the assurance that the late experiments of the Astronomer-Royal, on board of the *Rainbow*, have completely removed the grand obstacle which lay in their way, namely, the action of the iron on the compass. I have been distinctly assured by this gentleman, that he has discovered a method which will infallibly overcome it in any vessel, and which I hope to see explained in the pages of the *Nautical*,—of all places the most proper for it.* The little *Voador*, I find, has reached Pernambuco, after four and a half days steaming from Maranham; but had she the Astronomer-Royal's recipe, perhaps she would never have found herself in that port.

Well, now to other matters, for I have much to say, and while we are abroad on the ocean we will keep there. Pirates, Mr. Editor, pirates infest the seas, and one has been caught with her plunder at Santa Cruz, by Capt. Percival, of the American sloop of war, *Cyane*. It appears that the British brig, *Isabella*, from Sydney, was plundered on the 5th July, by a Spanish pirate, and falling in with the *Cyane* next day, the commander and crew were treated in the most humane manner by Capt. Percival, who pursued the marauder to the Azores, and afterwards to Teneriffe, where he found her, and succeeded in getting her captain and crew arrested. It was but a little time ago that we did the same thing for the countrymen of Capt. Percival, who, doubtless, remember well the affair of the Mexican, in which Capt. Trotter took so active and zealous a part, and the account of which I observed in your January number for 1837. Well, it is

* Our friend is quite correct, and we shall gladly avail ourselves of the first opportunity of complying with his wishes.—Ed.

gratifying to see two great and civilized nations sweeping the seas of these pests to humanity: let us hope that the exertions of Capt. Percival may be well seconded by the measures of Mr. Bartlett, our Consul at Teneriffe, to bring these wretches to justice. But that your Nautical readers may see that this is not the only delinquent threatening the peaceful pursuits of our Mercantile Marine, I send you a few extracts* which I have made from the daily journals, and more particularly from that invaluable store of Nautical information, the *Shipping Gazette*, and, if I mistake not, they will find enough to place them on their guard.

The French ships *Astrolabe* and *Zelie* arrived at Valparaiso, in April last, after an attempt to reach the South pole †. They were prevented by the ice from getting to the southward of 64° S. Weddel went to 74° S.: who shall go further!—time will shew. A French expedition under M. Gaimnard, (the celebrated naturalist, who lately conducted the researches in Iceland,) is now on the Scandinavian coast. It was said that this expedition would attempt an approach to the North pole, while that of the *Astrolabe* was attempting to reach the South; destined like the latter no doubt to experience the truth of the decree—"thus far shalt thou go and no further." Parry gave it up in despair, and Weddel lost the opportunity of going further while the road was open before him.

I am concerned to tell you that Lieutenant Grey appears to have been unsuccessful in his expedition to Australia. After a journey of some miles into the interior from the coast, he found a river, not far from Prince Regent's River of King; but was unable to ascertain where it fell into the sea. He has had an encounter with the natives, and appears to have narrowly escaped with his life. One of their spears wounded him so badly as to compel him to give up his journey, and he went to the Mauritius until the wound was healed. Report however, says that he is now on his way home.

Capt. Wickham I perceive, in the *Beagle*, has been more success-

* PIRATES.—June 20th, in 35½° N., 7° W., the *Thule* brought to by a brig carrying a red and white flag, deck covered with men, most of whom were black, weather heavy; cargo not tempting enough.

June 25th, in 34° N., 67° W., the *William Miles* was boarded by a piratical schooner, about 150 tons, under Brazilian or Portuguese colours, with fifty or sixty men on board. Took two casks of provisions.

4th July, in 36° N., 47° W., the *Ceylon* (American brig,) was boarded by a piratical schooner, under Portuguese colours: wine, water, and provisions taken.

5th July, in 38½° N., 44½° W., the *Catherine Elizabeth* was boarded by a schooner under Spanish colours: appeared to have fifty or sixty men. Took a cask of beef and one of pork.

The *Azores* packet, five days from Teneriffe, was boarded by a piratical brig, full of men, which took from her a chain cable, hawsers, &c.

Eliza Locke, of Dublin, was chased off *Madeira* by a suspicious schooner, for two days: date not given;—sometime previous to June.

The *I.O.*, in lat. 32°, long. 20°, was spoken by the *Ada*; but the *I.O.*, supposing the *Ada* to be a pirate, made all sail from her: date not given;—sometime during past summer.

An American schooner was boarded on the 29th of July, off *Cay West*, by a piratical schooner, and plundered 400 dollars' worth of articles.

5th July, in about 39° N., 34° W., the *Isabella* was boarded by a Spanish brig, and robbed of spare sails, cordage, canvas, and twine: this is the vessel captured by Capt. Percival.

† They sailed again in May.

ful having surveyed the coast from Roebuck Bay to King Sound, and found a river also. He was to return to Swan River and proceed to Sydney, where he will be in October.

Rome, it is said, is about to add another to the list of her observatories; opinions being divided it appears, between Monte Marie and Monte Pineio. We want one much more in the Western hemisphere, Mr. Editor. What are the United States people about? That much talked of expedition to survey in the Pacific Ocean, has started at last I find, under the direction of that talented officer Lieut. Wilkes. This is a good beginning, Mr. Editor, and it is creditable to a people like the Americans to send small squadrons surveying: you are aware this expedition consists of the Vincennes and Peacock, two sloops of war, the Relief store ship, the Porpoise brig of war, and two pilot boats of 120 and 100 tons—making in all six vessels, with crews amounting to about 400 men. The cause of hydrography is popular in the United States, Mr. Editor, let us hope that the produce of the expedition may be proportionate to the scale on which it has been formed, for if the ships and persons employed are numerous, the implements of their work have been levied, regardless of expense, from all parts of Europe.

Speaking of the Americans, I hear that the sites of no less than seventeen lighthouses have been surveyed on the shores of the lakes, including Michigan and Superior, owing no doubt, to the increase of steam navigation in that part of the world. I shall let you know when operations are commenced. In the way of lights the Northern Commissioners have resolved to have a light on the Great Skerry, the extremity of a dangerous reef, extending from Fort George. It is expected that it will be the means of saving many vessels which get entangled with Spey Bay, Stotfield Head, and the Cove Sea Skerries, and they say that the light will equal in splendour that of the Eddystone or Bell Rock lights. There is a light vessel just placed in the Bristol Channel which is said to be of no service to vessels coming up to Newport, and that a trifling alteration in her position would secure that advantage without affecting that of the Bristol trade. There is a lighthouse just commenced its operations at an obscure port, called Pultney Town, somewhere in the North. It appears to have given great satisfaction, and is to be very advantageous to that port.

Fearful accounts in the Steam-boat way, Mr. Editor. No less than five instances of the bursting of boilers. I told you of the *Victoria*, nine lives lost; since then the *James Gallagan*, two lives lost; the *Vivid*, two lives lost; the *Forfarshire*, forty lives lost! and the *Tweedside*, no lives lost, by good luck. I might add particulars, but you would not perhaps find room. All this must be remedied, or John Bull will desert his Steamers, depend on it. By the way, have you heard that the grand desideratum of making the furnaces of steam engines consume their own smoke is at length achieved? It is said, that a Mr. Ivison has fairly succeeded in doing it, by which an immense saving of fuel is effected, and therefore steam-navigation much benefited. There is another invention, too, concerning steam-navigation, the propelling of Steam-vessels by means of a revolving wheel under water, placed abaft the vessel's stern-post. The plan is spoken highly of, and is the invention of a Mr. Taylor of Gracechurch Street.

So, after all that has been said of the passage to India by the Red Sea, and the Euphrates, the old route of our forefathers by the Cape of Good Hope is to be adopted with large class Steamers. This is as it should be, Mr. Editor. Those Atlantic Steamers, such as the Great Western, have at length opened people's eyes, and the route by the Cape, depend on it, will become the favorite one. Sir John Ross, I see, is at the head of a Company carrying out the plan; and a herald steamer will start, for the purpose of fixing depots, in December next. The poor Boulogne Steamer of Mr. Frewen, which I told you was set up by this gentleman between that Port and Rye, is done up. Rye, with its harbour, is to be consigned to a quiet state of obscurity. Mr. Frewen deserved better for his pains; but he ought to have known his men before he began.

Abbinett and Dean are at work in their diving dresses, one at the Boyne, and the other at the Royal George, yet pecking away at the timbers of the wrecks. There have been some more blowings up there as well as in the Thames, where it appears the remains of the Glamorgan and William were left like thorns sticking in the sides of father Thames.

The affair which occurred lately between Mr. Moore and the coast guard, that I mentioned to you in my August letter, has ended in the discharge of the officer commanding the boat from which the shots were fired; and the displeasure which has been expressed by the Treasury on this occasion, will, no doubt, prove a wholesome restraint on the distribution of these firing compliments in future: this is as it should be.

I alluded in my last to an invention of Capt. Taylor, R.N., to resist the force of waves: since then I have heard of one by Lieut. P. Green, R.N., of a boat for deepening rivers: it has been tried with success at Falmouth, and appears to be well worth the attention of the corporations who have charge of our harbours generally; a most valuable invention, Mr. Editor, in this maritime country where harbours are of the first importance and docks the next. By the way, I observe the Southampton docks are began in downright earnest; to be opened by the time the railway is completed. Lieut. Green's invention will be applicable in the Southampton water if I am not mistaken; and lo, behold the Portsmouth people are at length bestirring themselves and going to construct docks at Point. The long talked of docks at Langstone harbour, the prospectus of which I once saw in your pages, are also to be done shortly. May be, Mr. Editor, these stand a good chance of surpassing all the others.

Liverpool is up and doing, she has sent forth her steam-boats to New York, determined that Bristol shall not have things exactly her own way; and the Liverpool and Royal William steamers are competing against the Great Western with the odds of superior size against them. But something more than this must be done. In the *corps scientifiques*, or that which is known by the name of the Royal Society, the gossip at present is the resignation of the Royal President, the Duke of Sussex, a somewhat unexpected event, in which much regret and disappointed feelings are evidently mixed up. His Royal Highness says plainly, the cause of his retirement is that he is unable to do the honours of his situation as President in a manner suited to his rank and the station he occupies in the country, and that circumstances over which he had no control, have not been remedied

by those whose duty it was to have considered them. Well, the Society has lost a kind-hearted and generous president, one who saw its internal divisions with regret—did all he could to preserve unanimity, and gave them his parting advice, nay, even implored them to cultivate good will among themselves; to join heart and hand in their pursuit of science: as his Royal Highness says, the advice is friendly as well as sound. The report is that Sir John Herschel will succeed to the office of President. By the way, the astronomers are employed now in observing Encke's comet which has re-appeared, as duly foretold, according both to time and place. Sir James South was the first who discovered its return, on Friday the 21st Sept., at 3 A.M.

Your devoted,

ARGUS.

[We regret that we have been obliged by some articles running to a greater extent than we expected to reserve much of Argus's letter.—Ed. N.M.]

KILLYBEGS HARBOUR LIGHT-HOUSE.

Ballast Office, Dublin, 29th June, 1838.

The Corporation for preserving and improving the Port of Dublin, hereby give notice, that a light-house has been erected on Rotten Island, (Killybegs Harbour,) from which a light will be exhibited on the evening of the 1st of October, 1838, and thenceforth from sunset to sun-rise,

Specification given of the position of the tower, by Mr. Halpin, Inspector of light-houses.

Killybegs Harbour light-house, is built on the western part of Rotten Island, bearing from

St. John's Point	N.E. $\frac{1}{4}$ N.	distant 3 sea miles,
Bullock More Rock.....	N.E. by E. $\frac{1}{2}$ E.	„ 3 $\frac{1}{2}$ „
Southern shoulder of Drumanoo Point	E. $\frac{1}{4}$ N.	„ 1 „
Harbour Rock.....	S.W. $\frac{3}{4}$ S.	„ 1 $\frac{1}{6}$ „

The light will be a fixed bright light, illuminated to seaward from S.W. by S. to N.E. kept in line with, or open from Drumanoo Point, and bearing E. by N. it will lead clear of the Bullock More Rock, and of the Rocks between Drumanoo and Muckris Point.

The tower is circular—coloured white, having its lantern elevated 67 feet over the mean level of the sea. The bearings stated are magnetic—(var. 28° $\frac{1}{4}$ W.)

By order,

H. Vereker, Secretary.

MERCHANT SHIP'S LOGS.—We request the attention of our Merchant Captains to the following:—

MR. EDITOR.—It is much to be desired that all Commanders of Merchant ships should insert their longitudes in their log-books. The former practice was to insert their latitude only, keeping the longitude in a private book; and this custom it is supposed arose from a want of confidence in the masters themselves, (in former times), in their own observations or calculations. If this be really the reason why the longitudes are so often omitted, it must serve as a strong inducement to every master to insert both latitude and longitude hereafter.

TABLE XXXVI.

For reducing Scotch Miles to English, and English Miles to Scotch.

1 Scotch Mile = 1·127272727 English mile.

1 English Mile = 0·887096677 Scotch mile.

Scotch or English miles.	English miles and Dec. parts.	Scotch miles and Dec. parts.	Scotch or English miles.	English miles, and Dec. parts.	Scotch miles, and Dec. parts.	Scotch or English miles.	English miles and Dec. parts.	Scotch miles, and Dec. parts.
1	1·127	0·887	40	45·091	35·484	79	89·055	70·081
2	2·255	1·774	41	46·218	36·371	80	90·182	70·968
3	3·382	2·661	42	47·345	37·258	81	91·309	71·855
4	4·509	3·548	43	48·473	38·145	82	92·436	72·742
5	5·636	4·435	44	49·600	39·032	83	93·564	73·629
6	6·764	5·323	45	50·727	39·919	84	94·691	74·516
7	7·891	6·210	46	51·855	40·806	85	95·818	75·403
8	9·018	7·097	47	52·982	41·694	86	96·945	76·290
9	10·145	7·984	48	54·109	42·581	87	98·073	77·177
10	11·273	8·871	49	55·236	43·468	88	99·200	78·065
11	12·400	9·758	50	56·364	44·355	89	100·327	78·952
12	13·527	10·645	51	57·491	45·242	90	101·455	79·839
13	14·655	11·532	52	58·618	46·129	91	102·582	80·726
14	15·782	12·419	53	59·745	47·016	92	103·709	81·613
15	16·909	13·306	54	60·873	47·903	93	104·836	82·500
16	18·036	14·194	55	62·000	48·790	94	105·964	83·387
17	19·163	15·081	56	63·127	49·677	95	107·091	84·274
18	20·291	15·968	57	64·255	50·565	96	108·218	85·161
19	21·418	16·855	58	65·382	51·452	97	109·345	86·048
20	22·545	17·742	59	66·509	52·339	98	110·473	86·935
21	23·673	18·629	60	67·636	53·226	99	111·600	87·823
22	24·800	19·516	61	68·764	54·113	100	112·727	88·710
23	25·927	20·403	62	69·891	55·000	150	169·091	133·064
24	27·055	21·290	63	71·018	55·887	200	225·455	177·419
25	28·182	22·177	64	72·145	56·774	250	281·818	221·774
26	29·309	23·065	65	73·273	57·661	300	338·182	266·129
27	30·436	23·952	66	74·400	58·548	350	394·545	310·484
28	31·564	24·839	67	75·527	59·435	400	450·909	354·839
29	32·691	25·726	68	76·655	60·323	450	507·273	399·193
30	33·818	26·613	69	77·782	61·210	500	563·636	443·548
31	34·945	27·500	70	78·909	62·097	550	620·000	487·903
32	36·073	28·387	71	80·036	62·984	600	676·364	532·258
33	37·200	29·274	72	81·164	63·871	650	732·727	576·613
34	38·327	30·161	73	82·291	64·758	700	789·091	620·968
35	39·454	31·048	74	83·418	65·645	750	845·454	665·323
36	40·582	31·935	75	84·545	66·532	800	901·818	709·677
37	41·709	32·823	76	85·673	67·419	900	1014·545	798·387
38	42·836	33·710	77	86·800	68·306	1000	1127·273	887·097
39	43·964	34·597	78	87·927	69·194			

LIGHTHOUSES AND LIGHT-VESSELS.—MR. EDITOR.—I have perceived in your useful work from time to time, some remarks by “a Skipper,” on the necessity of regulations being made for the guidance of steamers, in passing each other, and in their lighting at night. I witnessed a strong proof the other night of the necessity of some proper understanding, being concluded in this latter point, especially in the instance of “the Trinity House Yacht,” with a number of the elder brothers on board. I wish to draw the attention of these gentlemen to the objection I am about to make, to the mode adopted by them of lighting during night.

I happened to be in the channel a few nights ago, and saw a very beautiful light exhibited on board that vessel, and I could not help perceiving how very likely it might be mistaken for a *channel light*, the *Owers* or *Dungeness*, for instance. It is true that the rapid change of position would soon detect it as being a ship's light, but how readily it might lead into fearful error in bad, and particularly hazy weather, is evident, as it might be got sight of only for an instant, and then seen no more, in which case it is plain, that it would inevitably deceive a vessel.

The lighting of a steamer should clearly be such, as to prevent the possibility of such mistake, and I therefore take the liberty of suggesting to the Hon. Corporation, to take the subject into their consideration. It would indeed be a curious circumstance, should the yacht of the Trinity House, employed as it is in the most useful service, that of providing for the safety of shipping, be the means of leading a ship to destruction.

I cannot help thinking, that the best plan that can be adopted, is that used on board “the Peninsular Steam Navigation Company's Ship,” and which was recommended some two years ago, by a “Skipper,” through the *Nautical Magazine*, viz., three lights, one bright one at the fore-stay, one deep red on the starboard paddle box, and a green one on the larboard paddle-box, forming a triangle, any change in which will readily show how a steamer is steering. The advantage of this mode of lighting was very conspicuous, as I saw, at the same time the Trinity yacht, and one of this company's vessels together. Trusting that the Hon. Corporation will take this hint in good part, and that it may also be the means of their taking the subject in hand, and getting established some general regulations for steamers,

I am, Sir, your obedient servant,

“SOUNDINGS.”

London, 20th September, 1838.

[Here is a remarkable instance of the want of a law to regulate the lighting of steam-vessels, which at present appears to be done according to the owners or captains fancy, not but that the plan of the Peninsular boat seems to be a very good one. But who would expect the light of the Trinity House yacht to be mistaken for a channel light—Ed. N.M.]

THE GORGON STEAM FRIGATE.

MR. EDITOR,—As several incorrect and loose statements have appeared both in the Metropolitan and West Country Journals relating to the Gorgon, my duty to the constructor, as well as to the public, is to put you in possession of a few facts relative to her, which the voy-

age I made in her from Sheerness to Portsmouth, and thence to Plymouth enable me to do.

A public journal of one of our sea ports, professing to give a correct account of this steamer, contains a tissue of misrepresentations from beginning to end, evidently written by some ignorant person who could never have seen the ship, but who, when they were pointed out, refused to meet them with the real facts of the case. The Hampshire Telegraph of the 3rd inst., contains a critique on this Ship, in which there are at least a dozen gross errors. A letter was written to the Editor on the 5th, by an officer on board, pointing out many of them, which he, the Editor, "with his usual liberality refused to publish or notice" although he afterwards came on board the "Gorgon" while in Portsmouth harbour, and received oral evidence of the misrepresentations he had published in his Journal. In the following week he reiterated his complaints, not by again making wrong assertions, but by asking a number of *innocent* questions, evidently supposing that he was to have answers cut and dried to his taste, and finishing his editorial labours by triumphantly referring to a letter in his journal of that day, from one Lieut. Sabben, as an unanswerable proof of all he, the Editor, had the week before asserted. A nigger would exclaim, "Eh massa, Sabben, he really no sabby no ting about it;" and the nigger would be right when Mr. Sabben says, in proportion as you increase the diameter of the paddle-wheel so you increase the speed, and when he argues that as the Great Western with a given wheel goes ten knots per hour, ergo, the Gorgon with her wheel ought to go fifteen, without reference to the width of the wheel, or to the stroke of the engine. In fact the discovery will stand thus—if a pound of bacon cost one shilling, what is the value of a bushel of peas, or like the play of Hamlet, with the part of the hero left out by particular desire; the letter itself needs no refutation, I only mention it to show how easily a man may write himself down. Then comes the United Service Journal*, quoting the cuckoo song of the Gorgon being a complete failure, learnt no doubt from one of the dozen aspirants to the office of Surveyor of the Navy, or some of the late Naval College Gentlemen equally covetous of that honour, who would bark down Sir. W. Symonds if they could, and who would do the same if one of their own body were elected to that office to morrow, from principle I presume.

Now Sir, as to the facts connected with this ship. The Gorgon is built of teak, a heavy durable wood, and of a large scantling, to enable her to carry heavy guns. This caused the vessel to draw somewhat more water than if built upon the plan of our slight built steamers, but there can be no doubt, that the Gorgon will be a sound ship 20 years hence, when all the present class of steam vessels will have disappeared. After several most satisfactory trials the Gorgon on the 6th

* This Journal makes the three following trifling errors. It states that there is a deficiency of what she ought to carry, of 150 tons of coals, when the fact is, that she has now on board 180 tons of coals in her boxes, more than any other vessel in the service can stow. Again in speaking of the cost of the vessel and engines, there is a little error of about £30,000. In the words of the journal this perhaps is "a mere bagatelle" and it is finally stated that the engines originally intended for the Gorgon were 260 horse power, whereas they were only 220 horse; there were no misgivings whatever of what the speed of the vessel would be with the latter power, but their Lordships very naturally availed themselves of the advantage of having improved engines of 320 horse power, when they found that could be done without any increase in either space or weight.

July last proceeded to Sheerness, and there took in her masts, yards, stores, six heavy guns, water, and provisions for 190 men for three months, 290 tons of coals in the boxes, and 120 tons of stores, provisions and ammunition for the troops at St. Sebastian, as well as 20 tons of spare machinery. These weights brought her down to 17 feet aft and 16ft. 6 forward, at which trim she started for Portsmouth on the 27th August, going by steam only 9 knots, and with canvas 10 knots, with a slight breeze going free. She performed admirably, and would have made the voyage in 16 hours, but fouled a Spanish brig in the night and towed her into Portsmouth; her sails stood beautifully, and each time the breeze freshened, the vessel walked out an extra knot, the engines going 16 strokes.

As it was intended to tow the Venerable 74 from Portsmouth to Plymouth, and as, when towing there is double resistance to the engines; the engineer advised one of the three floats to be taken off each arm of the wheels, to enable the engines to keep up a proper number of revolutions, and *not as the Editor of the Hampshire Telegraph asserts, because she was so deeply immersed.* All persons acquainted with towing, are aware that the surface of float board which is sufficient for a vessel by herself, will be too much when having another in tow.

On the 8th instant, at noon, the Gorgon left the harbour of Portsmouth with the Venerable seventy-four in tow, (the Venerable drawing nineteen feet,) against a strong flood-tide. They soon gained $7\frac{1}{2}$ knots by steam alone, with a fresh breeze from the N.N.E. At Spithead the pilot was discharged, and both made plain sail, the Venerable, jury-rigged, speed $8\frac{1}{2}$ knots, revolution of engines fourteen. On hauling round St. Helen's outside the island, wind abeam, speed $9\frac{1}{2}$ knots with a severe strain on both hawsers, one of 9 inches, and one of 11 inches. Breeze freshened, at 9 P.M., close reefed topsails of both ships, and hauled close to the wind, jibs shaking, speed 8 knots with some sea on. At 3 A.M., furled all sails, squared the yards, and stood in for Plymouth against a fresh breeze right a-head, and the Gorgon then shewed her strength by towing the Venerable at $6\frac{1}{2}$ knots full by steam only, passed the breakwater at 6h 5m. A.M. on Sunday the 9th, performing the whole distance from the harbour of Portsmouth in 18h. 5m., and from Spithead when the pilot left, in 17h. 5m. a distance of 140 miles, averaging full 8 knots the whole way. During the whole time there was a severe strain upon both hawsers. This perhaps, is the most splendid instance of towing on record, for although both vessels were assisted by canvass for ninety miles, the only advantage gained was about $\frac{2}{3}$ of a knot more than with steam only would give, as the speed without canvass, and wind fair, was $7\frac{1}{2}$ knots, and against the wind $6\frac{1}{2}$. The ship was remarkably steady the whole time, no vibration or shake from the motion of the engines whatever was felt on board, and the greatest inclination the vessel made, under close reefed top-sails, was four degrees, as indicated by the sector in the captain's cabin. The engines worked beautifully, and never had to be stopped for the most trifling thing. The steam was raised from cold water in forty-five minutes with an expenditure of $1\frac{1}{4}$ tons of coals, and the whole quantity consumed, (having to wait for the tide at starting three hours, and $1\frac{1}{2}$ hour for entering Plymouth sound,) from the

lighting the fires in Portsmouth harbour at 8 A.M., to making fast to the buoy off Plymouth dock-yard, at eight next morning, was 13 tons 16 cwt. and the engine room from the superior manner in which the the boilers were clothed with a non-conducting medium, was perfectly cool throughout.

The above, Sir, is the substance of Capt. Dacre's Official Report to the Lords of the Admiralty, and I think you will agree with me that the performance of the *Gorgon* is *pretty well for a total failure*; and I have no doubt from what I have seen of this magnificent steamship, that she will prove herself much such a failure as *Vanguard*, *Vernon*, *Pantaloon*, and *Pique*, that is, by beating every vessel that competes with her, either in rough or smooth water. She has now sailed for the North Coast of Spain, having 380 tons of coals in her boxes, a place of all others the best calculated to test a vessel's powers, and I venture to prophecy, that the next report of her Commander will be, that she beats the whole fleet.

I am, Sir, your obedient Servant,
A Passenger on board the *Gorgon*.

P. S. A ridiculous report having been extensively circulated that this vessel could not carry her lower deck guns (ten 32-pounders,) on account of the excess of draught over and above what was contemplated, I beg to observe that I find that it was never intended she should carry them on a peace establishment, but to prove that she will do so, and that well too, upon measuring the heights of the lower sill of the ports out of the water, with an average quantity of coals on board, say 250 tons, and provisions for three months, they are *five feet, six inches*, which is higher than many line of battle-ships' lower deck ports.

[We give a place to this letter for the sake of truth, and respect for the Surveyor of the Navy,—a course we shall always follow; but our limited space will always be devoted to matter of a more generally interesting and useful nature than to a controversy on that interminable of all subjects, Naval Architecture, by some of its half-learned agitators.—Ed.]

MUTINY AND MURDER AT SEA.

IN the "Shipping and Mercantile Gazette" of Tuesday last, we published a letter from Mr Diehl, giving an account of a mutiny and murder on board the American brig *Braganza*; we take the following particulars from the *Greenock Advertiser*, of the 27th. inst.

We subjoin an intelligent and very minute account of the circumstances which occurred at sea, drawn up by Mr. Diehl, and to which little addition requires to be made. The conduct of the barbarous wretches seems to have been altogether unprovoked, and quite unexpected. There had not been manifested the smallest discontent, although their enmity to the unfortunate captain and mate seems to have been most inveterate. At the time the attack was made, the passengers and captain, unsuspecting of danger, were asleep in the cabin.

The brig proceeded on her voyage without any remarkable circumstances until the 5th of August, when in lat. between 37° and 38° N. and long. between 13° and 14° W., at two o'clock A.M., an alarm

was given by the first mate, (whose watch it was on deck,) of a mutiny by the crew. The captain and second mate immediately rushed on deck to his assistance; the captain had a cutlass, the second mate had nothing whatever to defend himself with. As I afterwards learned, they found the first mate lying at the cabin companion way, weltering in his blood; he afterwards succeeded in gaining the cabin. On the captain and second mate's reaching the deck they were immediately attacked by all the crew, who being five in number, soon overpowered them; they threw the second mate over the side, but he fortunately caught a rope, and regained the deck again, and retreated to the cabin completely disabled. In the mean time the crew succeeded in overpowering the captain, and threw him overboard. During this period, which was but of short duration, the two ladies and myself were in the most anxious suspense, anticipating that it was their intention to come into the cabin and murder us all, having no means whatever of defence. But to our surprise, immediately on throwing the captain overboard, they closed the cabin companion-way and sky-light by nailing and placing canvass and heavy chains on them. The persons thus confined in the cabin were Mrs. Thurley, the first and second mates, and myself and wife; the first mate had his face dreadfully cut and his skull fractured by two strokes on the head and two on his shoulder, all apparently done with a hatchet. Every attention was paid to him while we remained in the cabin; the second mate was completely disabled in the right arm by blows inflicted with a handspike. At eight o'clock of the same morning, the crew, then in complete possession of the vessel, made preparations to close the cabin dead lights by slinging a plank over the stern, at which we remonstrated, stating that we should smother; they replied, that unless we gave up whatever they wanted, they would certainly do it. They then demanded the chronometer, sextant and charts, together with all the money and jewellery we possessed, which consisted of a gold lever watch, finger and ear rings, and a small amount of specie, which were passed up to them through the cabin windows, by means of a bucket. They also required that we should throw overboard all our fire-arms, which consisted of an old musket, broken at the breech, and an old percussion fowling-piece, which was also rendered useless from corrosion, and having neither powder, ball, nor caps: we also complied with this request; upon which they became satisfied for a time. Upon asking them where they intended to go with the vessel, and what they intended to do with us; they replied, that they were going to Genoa, and that we should find out soon enough what they intended to do with us. They at the same time stated, that they had no wish to injure Mrs. Diehl or myself, but declared their determination of sacrificing both Mrs. Turley and the first mate.

On Monday, the 6th, nothing material occurred, except that we informed them that we were aware of their having altered their course; they then stated that it was their intention to run for the English Channel, and endeavour to effect a landing. They also informed us on this day, that they had the cook confined in the fore-castle.

Tuesday, the 7th—Early on this morning, we discovered a smoke in the cabin, which proceeded from the hold, which soon became so dense as to render it difficult to breathe. Upon our demanding the

cause, they replied that they were satisfied there was more valuable property in the cabin, and, unless we gave it up, they were determined to smoke us to death. We made use of every argument to satisfy them that we had given them all, and finally succeeded; upon which they withdrew the fire from the hold, and the smoke soon passed away. Nothing further occurred on that day, nor on the 8th, 9th, or 10th, except occasional suggestions by the crew that we should leave in the jolly-boat; but stated neither time nor place. We objected to this proposition, as we were satisfied we should have no chance for our lives. During all this period, the ladies particularly, were kept in a constant state of excitement, bordering on frenzy, both night and day, from the constant bustle and confusion on deck, preparatory, as it were, for making a descent upon us for the purpose of murder. Our situation can better be imagined than described, as we all calculated on being destroyed; but of all the different modes that lay in their power, we knew not which they would choose. They hinted several times that it was necessary to destroy us to save themselves.

“On Saturday, the 11th, between 8 and 10 o'clock, they called for me over the taff-rail, and stated, that there was a vessel in sight from the mast-head, and proposed that we should take the jolly-boat, and endeavour to gain her. To this I objected,—as, in the first place, I did not believe that there was a vessel in sight, and further, I stated to them that, in the event of our not being able to reach her, I was certain we must perish. Previous to this, and also at this period, I proposed that, if they wished to save any of us, they should take the long boat, and leave us the brig, or give us the long boat, and we would run our chance. Previous to this, they would not listen to this proposition; but, after a few moments' conversation together, they requested that myself and wife should come on deck, which we consented to do, concluding that our situation could not well be worse, and that matters would then be brought to a close. Upon our reaching the deck no violence was used towards us; but they were all prepared with their knives and other edged tools for resistance. Immediately on gaining the deck, we requested that Mrs. Thurley and the second mate should be allowed to come up, to which they consented. After a promiscuous conversation of an hour or so, in which every possible argument was urged on our part, to induce them not to destroy us, they consented that we should take the long boat, and run our chance of getting to land, then distant, as near as could be ascertained, about 350 miles, on the Portuguese coast. This proposition we accepted, and they went to work immediately to get the long boat out, previously having fitted her out with mast, sail, water, &c., for their own use. Between two and three o'clock, everything being ready, they required us to leave, prior to which we made use of every possible argument to induce them to allow us to take the first mate along with us (although he was in a wretched condition from his wounds.) which they positively refused, stating, that they would take care of him themselves. Finding our solicitations of no avail, and fearing that further delay might prove dangerous, Mrs. Thurley, Mr. Moir, (second mate), the cook of the brig, and Mrs. Diehl and myself, got into the boat, and left the brig, in (what they considered themselves), lat. 42° 0' 0'' north, long. by D. R. 17° 0' 6'' west. The brig then kept away N.N.E., and we steered as

near as possible for the Portuguese coast all that afternoon and night. At day-light, on Sunday morning, the 12th, we discovered two sail in sight, one of which we judged to be the Braganza; made chase after the other, but after pursuing her until ten o'clock, gave up the chase as fruitless. At this period we made another sail to the southward, and coming towards us; after a short respite, we gave chase for her, and neared her fast. About 3 P.M., she discovered and bore up for us; and between 3 and 4 P.M., we got alongside, and were received on board the brig *Hebden*, Captain Wm. Benjamin Fowler, of Scarborough, bound from Sicily to Clyde, by whom, and all his crew, we were treated in the most kind and hospitable manner. I would further remark, that the mutineers robbed us of nearly every stitch of clothes we had, except what we had on."

How the wretches should have given the survivors even a chance for their lives seems quite unaccountable, knowing as they did, that should they be preserved, no exertions would be spared to bring them to the condign punishment they have so richly merited. They said that they intended to run for the English channel, which, should they have done, there is every probability that they will be brought to justice.

James, an English lad, belonging to Brixham, appears to have been the least guilty of the men, as he warned Diehl that the ringleaders had given him poison to put into their victuals and water. That this was the case, is confirmed by the fact, that great readiness was shown to furnish them with victuals or water; and the second day after they were shut up, one of the ringleaders was heard to say, after looking down the cabin window, and seeing them sitting without motion, that he thought they were all dead.

The size of the boat in which they embarked was as follows:—16 feet 2 inches long, 6 feet 10 inches extreme breadth, 6 feet 2 inches across the stern, 4 feet stern posts. She was in a very leaky condition, and one person had to keep constantly bailing her. It would appear that the mutineers had themselves intended to embark in this boat, as she was well supplied with provisions and water; and the only other boat on board the *Braganza* is the jolly-boat, which is very small, and in most wretched condition, so that the brig will be brought well to shore ere a landing is attempted.

THE BRAGANZA.—We understand that a judicial investigation, at the instance of the American Consul, has taken place, into the circumstances connected with the atrocious mutiny and murder committed on board of this vessel, the result of which has been to confirm, in all the material particulars, the statement which we were enabled to lay before our readers in our last publication. It may be important, however, to add, that it was ascertained in the course of the precognition, that when the mutiny occurred, the brig was in lat. 37° 30' N., and long. 13° 30' W.; and that at the time Mr. and Mrs. Diehl, Mrs. Thurley, the second mate, and cook, were sent adrift in the long boat, the brig had reached lat. 42° 0' 6'' N., and long. 17° 0' 0'' W., so that during the week, when these parties were confined to the cabin, the mutineers must have maintained a course of N.W. or thereby; and that after the long boat left the brig, the latter was observed, so long as she remained in sight, to steer a N.N.E. course, from which circumstance it would seem to have been the intention of the mutineers to make for the British Channel; and this

agrees with several expressions which they were over-heard to employ. As the only boat remaining on board the brig is a jolly-boat, it is conjectured that the mutineers will carry the brig as close to the coast as possible, and there scuttle and sink her, making their escape by the jolly-boat. The American Consul has forwarded copies of the precognition to different ports, where the information supplied may be likely to lead to the detection of the criminals; and the principal documents have been retained, so that they may be consulted, at the American consulate, either at Glasgow or Greenock, where any information likely to assist in the discovery of the culprits will be promptly attended to.

“ We have received a letter this morning from Hamburg, which furnishes some particulars of the mutineers of the Braganza, whose apprehension and detention at Embden we published yesterday. Our correspondent's statement, which was procured from H. Canning, Esq., consul-general, will be found to differ in some particulars as to names, &c., from the accounts previously given :

The prisoners are as follow :—Cornelius Williams, a native of Hamburg; John Adams, an American, (hung himself in prison); Joseph Verberggen, Belgian; Hans Schelswig, Swede; James Davey, a boy from Plymouth.

The Vice-Consul at Embden says, the boy is innocent, and he (the vice-consul) will defend him.

Davey's mother was a widow; she went to Aberavon, and married a man called Young, who keeps the Star Inn, in that town.

Saturday, September 8, 1838.

A letter received at Lloyd's from their agent at Embden, dated the 1st of September, says—“ In the night of the 24th ult., a ship was driven on shore near the Isle of Juist; the 30th ult. five men of the crew arrived here, and upon our inquiring, reported it to be the Ceres, Captain Wight, bound with a cargo of sugar from New Orleans to Hamburg, which we established through the newspapers of this city, but which afterwards has proved false. Strong suspicion of barratry and mutiny arising the said five men were arrested and put to trial, and we can now from their depositions give the following authentic account :—

“ The coppered brig Braganza, from Philadelphia, Captain Jolly or Tolly, left Philadelphia on the 8th of July last, with a cargo of sugar and logwood, bound for Genoa. About three weeks afterwards, when the vessel was in the Atlantic, a mutiny was raised by a part of the crew, being four of the sailors arrived here. The vessel has been unloaded by coasters from several quarters, part of which has been delivered to the authorities; the remainder has been stolen, together with the stores, &c. of the vessel. Both of the mates were subjects of the United States.”

HARBOURS OF REFUGE, ON A NEW PRINCIPLE.—*By William Tait
Civil Engineer.*

[From the United Service Journal for Sept. 1838.]

- AFTER the many and expensive efforts that have been made at Dover Harbour, and the science and skill exerted, with very nearly as little success, at Folkstone, to deflect the shingle past the entrances of these

harbours, it appears almost an hopeless task to make any further attempts on the principle that has directed these endeavours. At Folkstone, indeed, the principle may be deemed to have been carried by the late Mr. Jessop to its utmost limits. The result, however, has invariably been, that, whenever the angle formed by the shore and windward pier is filled up with shingle, it finds its way into the mouth of the harbour, forming a bar whenever the wind and tide co-operate in a particular manner.

I have no faith in the scouring by back-water, directed through cylinders; it is at best found to produce but a temporary advantage: a mere remedial measure, the effect of which may continue to last only perhaps during the next tide, or not even so long; for should the wind immediately shift round some points, as from S.W. to S.E., nearly all the shingle would be thrown back into the mouth of the harbour, and form a bar almost as formidable as at first. This has often happened, and may, therefore, happen again, with more or less frequency, and at times, too, when the obstruction to the entrance of vessels may be attended with the most disastrous consequences. Besides, the artificial scouring here alluded to, can only be used during spring tides. At other times there is not a sufficient head of water to have any effect on the bar; and it unfortunately so happens that it is chiefly during *neap*-tides that a bar is thrown up at the mouth of the harbour, when, if no other means of removing it be employed than by what is termed "the scouring power," it must remain obstructing egress or ingress, until the spring tides come round! This is a comfortable state of affairs to remain quietly and tamely under!

In designing a harbour, on a principle differing entirely from that hitherto followed, and applicable especially to a sand or shingle coast, I have been guided by my own personal observation, (while stationed for several years on the Kentish coast) on the mutations of the shingle, as well as by the remarks made on this subject by that intelligent engineer, Mr. H. R. Palmer, in a paper read before the Royal Society on the 10th of April, 1834.

Mr. Palmer has classified the actions of the sea and wind upon the loose pebbles into three kinds. The first heaping up, or accumulating the pebbles against the shore; the second, breaking down or disturbing the accumulations previously made; and the third, removing or carrying forward the pebbles in a horizontal direction.

It is not necessary for our present purpose to enter into any detailed account of these several actions; it will be sufficient to call attention to one important fact, as having particular reference to the plan now proposed; namely, that when the shingle, in its transition, has to pass through a narrow gorge, or rebounds against a bold rocky shore (in place of being spread over a lengthened sloping bank, suited to its deposit,) it continues to be borne along, and to travel onward; for this obvious reason, that the water, moving forward in a body, possesses ample power to force the rolling mass of pebbles away with it in its course: whereas, in the accumulative action, the waves, after striking the pebbles in an upward direction, become dispersed in receding over a gently inclined and equal surface, and are incapable, in their exhausted recoil, of returning them to the level from which they were forced; wherefore they do not move on, but are accumulated in heaps, and become the source of impediments and difficulties.

In this way, is pointed out by nature herself a principle upon which the shingles may be assisted to pass forward, and their accumulation in any particular place prevented.

Upon this principle, then, the chief object to be had in view, it is evident, will be to obviate the recoil of the waves in a dispersed form, and to conduct them onward in a confined column, so as that they may retain sufficient strength to bear away the shingle along with them in their course, in order to prevent it from accumulating at any projection traversing the line of its progress, such as the angle formed by the windward pier with the shore; and then, after that angle is completely filled, and can hold no more, passing round and depositing itself within the harbour, and at its mouth, as at present, continually happens to the more or less interruption of its commerce.

These desirable and most important objects, it is presumed, may be attained by the construction of a harbour on a principle of ISOLATION. The site of such a harbour may be chosen on almost any point of a sand or shingle coast: a salient point would, no doubt, be the most favourable for our purpose, although it might be formed in a bight, if found to be peculiarly suitable in other respects. It is impossible to be the more explicit here; indeed it would be improper to give any general plan, without first seeing the spot at which it were meant to construct a harbour on this, or in fact, on any principle.

It will be evident that, if the projected harbour be completely isolated, and a free and efficient passage left for the shingle to travel uninterruptedly between it and the shore, and aided by a revetment on the shore, it will be impossible for any accumulation to take place either to windward or to leeward, or before the entrance of the harbour, to interfere with the freedom of ingress or egress, at any time; but that it must be carried clear away by the confluence and joint action of the artificial and natural currents to leeward of the harbour. This, as must be obvious to any one at all acquainted with the nature and action of currents of water, and having any experience regarding the movements of shingle, is a matter entirely dependent on the figure we give to the harbour, combined always with a due regard the several localities and circumstances at the spot.

[To be concluded in our next.]

Law Proceedings.

UNION. Salvage.—Union Steamer from Liverpool to Maryport, on 26th October last, disabled by sea, succeeded in making Pile Harbour, towed by Windermere into safety; a tender of 20*l.* refused. For the salvors, it was urged, that services rendered were important; but Sir John Nichol considered the proceedings unnecessary, that the Union was in no danger, and the Windermere had rendered no effectual assistance. For the services rendered, 10*l.* would have been sufficient, and the tender should have been accepted. Tender pronounced sufficient, and each party to pay their own costs.—*Admiralty Court, 10th June.*

OCEAN. Salvage.—For services of Lieutenants Caswell and Franklin, and twenty of coast-guard station of Bearhide and Newhaven, rendered to Ocean, from Gambia, on 15th March. Vessel ran on rocks in foggy and boisterous weather, at 2 o'clock

in the morning. Salvors lightened the ship, so as to get her off with next tide, and she proceeded on her voyage. A tender of twenty guineas, refused. For salvors it was stated vessel (150 tons) and cargo, was valued at 4,000*l.*; their great exertions alone saved her; Lieutenant Caswell had suffered injury; tender insufficient. For owners, contended that coast-guard had no wet foot or jacket in this duty; their *duty* it was to assist vessels in danger: considered tender sufficient. Sir John Nichol considered it an important case, the vessel in a most perilous situation, it was a *secondary duty* only of coast-guard to assist vessels in danger; the Ocean's crew were two negroes, three boys, the master, and mate, their exertions could not have saved the vessel; if merchants and underwriters knew their own policy, they should be liberal in rewarding the zeal of coast-guard. He awarded fifty guineas to each of the lieutenants, and two guineas to each of their crews.—*Admiralty Court, 16th June.*

We regret to announce that the Right Honorable Sir John Nichol has closed his useful and valuable life: he died at his seat in Wales. He was the second son of John Nicol, Esq., of Llanmæs, Glamorganshire, by Elizabeth, daughter of James Havard, Esq., of Herefordshire. He was born on the 16th March, 1759. In 1765 he was placed at the free school, Cowbridge, and thence sent to Bristol school. In 1775 he was entered at Oxford, where he was immediately elected to a Founder's Kin-Fellowship at St. John's College. He was intended for holy orders, but his destination being changed, he was admitted, in 1785, as an advocate at the bar of Doctor's Commons. In 1787 he married Judy, youngest daughter of Peter Birt, Esq., of Wenvoe Castle, who died in December, 1829. By her he had issue five children,—Henry John, who died an infant; Mary Ann; Judy, married Charles Franks, Esq.; John, married Jane Harriet Talbot; and Catherine, married Charles Scott Luxmore, Dean of St. Asaph, and died November, 1830. Sir John rose rapidly into very extensive practice: in 1791 he was appointed a commissioner to inquire into the state of the law in Jersey, with the late Sir William Grant and the late Mr. Partridge, King's counsel. In 1798 he succeeded Sir William Scott (afterwards Lord Stowell,) as King's advocate. In 1802 he was elected Member of Parliament for Penryn, and sat successively till the dissolution after the Reform Bill for that borough, Hastings, Rye, and Great Bedwin. In 1809 he succeeded Sir William Wynne as Dean of the Arches and Judge of the Prerogative Court, and was made a Privy Councillor and a Lord of Trade and Plantations. On the death of Sir C. Robinson, in 1834, he was appointed Judge of the High Court of Admiralty by Lord Grey's Government, though known to be politically opposed to it. In 1835 he resigned the office of Dean of the Arches and Judge of the Prerogative Court, but he retained the Judgeship of the Admiralty to the period of his decease. The county of Glamorgan is indebted to Sir John Nicol for the introduction of the National System of Education, and the Savings' Bank at Bridgend; as also for the Glamorgan District Committee in aid of the Society for the Promotion of Christian Knowledge. Blessed with an excellent constitution, he attained a green old age, and he closed his long and useful career in his eightieth year, with his faculties unimpaired, full of religious hope, and accompanied by the respect and esteem of all who duly appreciated his public merits and private virtues.—*Cambrian.*

Records of Wrecks.

THE FORFARSHIRE Steamer.—Left Hull 5th September for Dundee, with fifty-three passengers and crew—Weather boisterous—heavy sea—could keep no water in boiler—wind increased from N.E. with rain and sleet—4 A.M. 6th, boiler gave way—pumps set on—two furnaces drawn—damages repaired—continued on voyage—off Berwick—wind more violent from N.N.E.—leak in boiler increased—deck pumps unable to clear boiling water—firemen unable to perform their duty—towards evening brought to off St. Abbs' Head to examine condition—engine reported incapable of working—midnight—destruction evident—fore and aft sails set to clear the land—gale continued—thick fog—vessel drifting towards Shields—3 A.M. 7th, light of the Farn islands seen—Captain directed anchor to be cleared—mate proceeded to haul up cable—rushed to the boat, followed by others of crew—boat drifted about with them—in four hours picked up by a Montrose sloop, and carried to Shields—passengers warned of danger—on boat leaving vessel she struck on the outer Farn—parted in two, fore-part remaining on the rock, after-part drifting to southward with many passengers, some, it is said, in their berths—scene of horror ensued too dreadful to be described—fore-part of vessel, including engines, remained on rock—great exertions

by persons on Farn islands and on mainland to rescue sufferers clinging to vessel—daughter of light-house keeper behaved heroically—was the means of inducing her father to go off in a boat amidst the heavy sea fully a mile off, she herself taking an oar—Lieut. Brenton, of coast-guard, distinguished himself also—nine persons thus saved.

The following remarks on the subject of a proper inspection of all steam-vessels, in the justness of which we quite agree, are taken from the *Edinburgh Courant*.

“It cannot fail to impress more and more the necessity of some efficient superintendence over the machinery and management of these vessels to which is now committed life and property to so great an extent. The agency of steam, surpassing as it does the power of the wind and waves, has, in its application to navigation, given a certainty to sea voyages never before known, and has in a measure converted the ocean into a common highway for all travellers, and for the conveyance of property to a vast amount. That it may be rendered subservient to these great objects, we have no doubt; but in conflicting with the terrible power of the ocean and the tempest, it seems indispensable that every thing should be in the best possible condition—that nothing should be trusted to chance—that no weak or vulnerable point should be left open to the inroads of the raging waves. How forcibly does the disastrous fate of the Dundee steamer impress the necessity of taking precautions against carelessness, where so many valuable lives are at stake! We understand that the Forfarshire set sail from Hull with her boilers in bad repair, and imperfectly mended; no doubt, if the weather had been calm and moderate, the vessel, even with crazy machinery, would have reached her destined port. But what security have we in this proverbially uncertain climate for calm weather and a smooth sea? Who, when there was so much at hazard, would trust to the faithless ocean? The leak in the boilers imperfectly mended appeared when the vessel reached Flamborough Head, and again when off Berwick; and at last the engineer reported that the engine would not work. The cause of this calamity therefore will be attributed to the defective and worn out machinery, for which a deep responsibility lies with those who have the charge of preparing these vessels. * * * When we consider the grief, the wide spread misery and ruin to families thus occasioned by these unexpected calamities, it is scarcely possible to suppress a feeling of deep indignation on reflecting that vessels with such a precious cargo of human life, should be sent out to sea so ill-appointed, with such crazy machinery—and not, indeed, sea-worthy. The engineer, in his affidavit, had no hesitation in stating, that the machinery would have wrought, and the boilers would supply steam, “if it had not been owing to the great sea rolling and pitching the vessel,”—from which it would appear that the vessel was only fitted for a calm sea; but not for any of these gales which frequently occur in this climate at this season of the year. * * * As a preventive of mischief it seems highly necessary that the machinery of steam-vessels should be superintended by a competent engineer, and that a guarantee should thus be taken for the efficiency of the engines, to which so many individuals, ignorant of the risk, daily trust their lives.

There is another circumstance which is stated in all the accounts that are given of this melancholy shipwreck, which is well calculated to excite the public indignation. We observe that the seamen, with the first and second mates, deserted the vessel before she struck, and took to the boat, leaving the helpless passengers to their fate. It is scarcely possible to conceive a proceeding more selfish and unfeeling, less characteristic of British seamen, and in every view more unwarrantable. The master and crew of the vessel are responsible for the safety of the passengers—it is to their care that they trust their lives; and to desert them in the hour of need—to leave them without mercy to perish in the ocean, as must have been their fate after the vessel was abandoned by almost every seaman, is a breach of a sacred duty, which not only calls for reprobation, but should almost bring them within the reach of the criminal law. There were, it appears, two boats in the vessel; and if the crew had been men of courage and humanity, resolved to do their duty, they would have consulted with the master, when they might perhaps have manned the two boats, and saved a considerable proportion of the passengers. But coolly to leave the whole passengers to perish—not even to consider whether it was practicable to save a portion of them along with themselves—this is conduct which can scarcely be described in terms of adequate severity, and which will stick to them as a merited reproach to the end of their lives—*Glasgow Constitutional*.

HOWARD CASTLE, *Whaler*.—Capt. T. Emmens, on Coast of California. Left Monterey, 30th December, for Cape San Lucas—7th January, 4h. 30m. A.M., wind fresh at W.N.W., high sea running—struck on a sunken rock off Coast of California, in a bight called Pescado Blanco—master and crew (thirty-one persons) took to boats. One landed on 3rd February, at Mazatlan.

STATEMENT OF THE PACKETS.

British Post- age of a Single Letter to or from		PALMOUTH STATION.		Last Packets sailed.	Next Packets due.
Lon.	Falm.				
2s 6d	1s 7d	Lisbon	} Every Saturday.	Iberia, Sept. 17	Royal Tar, Sept. 30
2 7	1 8	Madeira			
2 2	2 2	Spain			
2 6	1 11	Gibraltar	} Every 2nd Sat.	—, Sept. 17	
2 6	2 3	{ Malta, Greece, and Corfu.			
2 7	1 8	{ Egypt & India ...	Every 4th Sat.	Tagus, Sept. 3	
2 7	1 8	Madeira	1st Tuesday in	H.M.B. Alert,	H.M.B. Lyra,
3 6	2 7	Brazil	each Month.	Sept. 7	Oct. 26
2 2	1 3	America	1st Wed. ditto.	H.M.B. Skylark,	H.M.B. Delight,
				Sept. 8	Oct. 6
2 2	1 3	{ Jamaica, Lee- ward Islands }	1st Day in every	H.M.B. Pigeon,	Ranger, Oct. 26
3 1	2 1	La Guayra	Month.	Sept. 3	
3 1	2 1	Mexico & Havanna	—15th ditto.....	H.M.B. Express,	Linnet, Sept. 20
				Sept. 17	
2 2	1 3	{ Jamaica, Lee- ward Islands }	—15th ditto.....	H.M.B. Magnet,	Tyrian, Oct. 10
3 1	2 1	Carthagena		Sept. 17	

THE RETURN OF THE PACKETS IS CALCULATED THUS:—To and from Jamaica, 12 weeks; America, 2; Leward Islands, 12; Gibraltar, 20 days; Malta, 53 days; Brazil 20 weeks; Mexico, 11.

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

NEW BOOKS

AN ATTEMPT TO DEVELOPE THE LAW OF STORMS. *By means of Facts arranged according to place and time, and hence to point out a cause of the variable Winds.* By Lieut. Col. W. Reid, C.B.

This is one of the most important books which have been presented to the seaman since the days of Hadley and Maskelyne. We shall spare our own comment at present on the laudable exertions of the Colonel to make room for the following extract of the proceedings of the late meeting of the British Association which will give our readers some idea of the Colonel's book:—

“The business commenced by the reading of a short paper ‘On Storms,’ by Lieut. Col. Reid, of the Royal Engineers, with occasional comments, *vice voce*, in which he brought forward and unfolded one of those subjects which will make the meeting of the British Association memorable in the annals of science. Its importance in every point of view cannot be overrated, though the gallant Colonel, with a modesty so honourable, to really original and extraordinary efforts in a walk hitherto neglected, though bearing so much upon the interests of mankind, liberally attributed much of its merits to Mr. Redfield, an American, who had first called his attention to it, and made light of his own labours in collecting a volume of facts with an industry and zeal above all praise. The colonel observed that he broached no theory, but had brought these data together, to lay them before the able men whom he was sure to meet at this assembly.

“A Report, explaining the progress made towards developing the Law of Storms; and a statement of what seems further desirable to be done to advance our knowledge of the subject.” By Lieut.-Col. W. Reid, Royal Engineers. ‘Having been ordered, in the course of a military duty, to the West Indies in 1831, I arrived at Barbados immediately after the great hurricane of that year, which, in the short space of seven hours, killed upwards of 1400 persons on that island alone. I was or two years and a half daily employed as an engineer-officer amidst the ruined

buildings, and was thus naturally led to the consideration of the phenomena of hurricanes, and earnestly sought for every species of information which could give a clue to explain it. The first reasonable explanation met with, was in a small pamphlet extracted from the 'American Journal of Science,' written by W. C. Redfield, of New York. The gradual progress made in our acquaintance with the subject of storms is not uninteresting. The north-sea storms on the coast of the United States of America had attracted the attention of Franklin. One of these storms preventing his observing an eclipse of the moon at Philadelphia, he was much surprised to find that the eclipse had been visible at Boston, which town is north-east of Philadelphia. This was a circumstance not to be lost to such an inquiring mind as Franklin's. By examination he ascertained that the north-east storm came from the south-west: but he died before he made the next step in this investigation.

"Colonel Capper, of the East India company's service, after having studied meteorological subjects for twenty years in the Madras territory, wrote a work on the winds and monsoons in 1801. He states his belief that hurricanes will be found to be great whirlwinds; and that by placing a ship in these whirlwinds may be ascertained; for the nearer to the vortex, the faster will the wind veer, and subsequent inquiries have proved that Col. Capper was right in his opinion.

"Mr. Redfield, following up the observations of Franklin, probably without knowing those of Col. Capper, ascertained that, whilst the north-east storms were blowing on the shores of America, the wind, with equal violence, was blowing a south-west storm in the Atlantic. Tracking Franklin's storms from the southward, he found, throughout their course, that the wind in opposite sides blew in opposite directions; and that in fact, they were whirlwinds, their manner of revolving being always in the same direction. By combining observations on the barometer with the progressive movements of storms, Mr. Redfield appears to have given the first explanation of its rise and fall in stormy weather, and my inquiries confirm his views.

"The first step taken by me in furtherance of the inquiry, was to project maps on a large scale, in order to lay down Mr. Redfield's observations, and thus to be better able to form a judgment on the mode of action of the atmosphere. These maps, which have been now engraved for publication, are the Charts I. and II. of those laid before the Association. The wind is marked by arrows; on the right hand of the circles the arrows will be observed to be flying from the south; on the left hand, coming back from the north. The field of inquiry which this opens can be but simply indicated here: to proceed in a satisfactory manner with the study, it being a new one, requires that the proofs be exhibited step by step; this I have done by printing what I have collected and arranged. The inferences drawn from the facts appear very important, and the further pursuit of the inquiry well deserving the attention of abler men than myself. The manner in which I followed up the investigation has been to procure copies of the actual log-books of ships, to combine their information with all that I could obtain on land, and thus compare simultaneous observations over extended tracks. On Chart VII. are thirty-five ships, in the same storm, the tracks of several crossing the storm's path, and the wind as reported by the ships, corroborated by the report from the land. The observations of ships possess this great advantage for meteorological research, that merchants log-books report the weather every two hours, and the log-books of ships of war have hourly observations always kept up. After having a variety of storms in north latitude, I was struck with the apparent regularity with which they appear to pass to the North Pole, and therefore, led to conclude that, in accordance with the order of nature, storms in south latitude would be found to revolve in a precisely contrary direction to that which they take in the northern hemisphere. I earnestly sought for facts to ascertain if this were really the case; and I had obtained much information to confirm the truth of it, before I was at all aware that Mr. Redfield had conjectured the same thing, without, however, having himself traced any storms in south latitude. Chart VIII. represents the course of a very severe hurricane, encountered by the East India fleet under convoy in 1809, and it is strikingly illustrative of the truth of this important fact. If storms obey fixed laws, and we can ascertain what those laws are, the knowledge must be useful to navigation; but to apply the principles practically, requires that seamen should study and understand them.

"The problem so long desired to be solved, viz., on which side to lay-to a ship in a storm, I trust is now explained. By watching the veering of the wind, the direction in which a storm is falling may be ascertained. The object required is, that the wind, in veering, should veer aft instead of a-head, that a vessel may come up instead

of having to break off. To accomplish this, the ship must be laid on opposite tacks, on opposite sides of a storm; but the limits of this paper render it impossible to attempt an explanation in detail. The researches which have been carried into the southern hemisphere, afford a very interesting explanation to the observations of Captain King in his sailing directions for the southern extremity of America, viz., that the rise and fall of the barometer in southern gales corresponds with the rise and fall in high northern latitudes; east and west remaining the same, but north and south changing places. This is a strong corroboration of what I trust I have now proved, Five connected storms, which occurred in 1837, and followed each other in close succession, possess an interest altogether new, for they afford us a clue towards explaining the variable winds. Since these whirlwinds revolve by an invariable law, and always in the same direction, every new storm changes the wind. Thus, the hurricane of the middle of August, 1837, traced on Chart VIII., had hardly passed towards the Azores with the wind in the southern portion of it, blowing violently at the west, when another storm, coming from the south, and bringing up the ship *Castries* with it, at the rate of seven or eight knots an hour, reversed the wind to east. The storms, expanding in size and diminishing in force, as they proceed towards the poles, and the meridians at the same time approaching each other, gales become huddled together, and hence, apparently, the true cause of the very complicated nature of the winds in the latitude of our own country. Since great storms in high latitudes, often extending over a circular space of 1,000 miles, the length and breadth of the British islands afford far too limited a sphere for their study; and this is the chief reason which induces me to address this society.

" Nations should unite to study the atmospheric laws. By exchanging the observations made at the light-houses of different countries, reports would be obtained along the whole coast of the civilized world. If the merchant log-books, instead of being destroyed, as they frequently are at present, were preserved in dépôts, each great commercial port keeping its own, they would greatly assist in giving observations upon the sea, and along the coasts. After the same manner, the meteorological reports within the interior of different nations should be exchanged, and we should then soon be able to trace the tracks of storms over almost the entire globe.

" When I had obtained satisfactory proofs that storms in the southern hemisphere revolve in opposite directions to that which they take in the northern, and saw the magnet, when in conjunction with the Voltaic battery, exhibit a similar phenomenon, making contrary revolutions on the two poles, it gave again a novel and increased interest to the inquiry. I have since, with the assistance of Mr. Clarke, of the *Lowther Arcade* (with whom I placed an 84lb. hollow shot for the purpose of experiment,) found that rotations may also be exhibited off the poles; but I have not yet had time to try further experiments with this shot, fitted up after the manner of Barlow's magnetic globes. During this investigation I have also endeavoured to ascertain the law by which water-spouts move; for they, doubtless, follow some fixed law. After many fruitless researches, I have obtained two instances: one of which is from Captain Beechey; where there appears no reason to doubt that the explanations given are correct.

" It is remarkable that, in these two examples, which occur in opposite hemispheres, the revolutions are in opposite directions, but both in the contrary direction to great storms. The double cones in a water-spout, one pointing upwards from the sea, the other downwards from the clouds, mark it as a phenomenon of another kind; and we ought to observe whether the cloud above and the sea below revolve in the same directions with each other. To ascertain their electrical states would be also highly interesting; and this may not be impracticable, since the great hydrographer Horsburgh actually put his ship through a small phenomena of this description (when navigating the Indian Ocean); and this step he hazarded for the purpose of examining their nature. The apparent accordance of the force of storms with the law of magnetic intensity, as exhibited by Major Sabine's report to this society, is also very remarkable; and I had looked forward to its being printed with great interest, in order to make the comparison. It is frequently remarked with wonder, that no storms occur at St. Helena. I felt, therefore, much curiosity to know the degree of magnetic intensity there, and was not a little struck at finding it the lowest yet ascertained on the globe. Major Sabine's isodynamic lines, to express less than unity, are only there, and they appear, as it were, to mark the true Pacific ocean of the world. The lines of greatest intensity, on the contrary, seem to correspond with the latitudes of typhoons and hurricanes; for we find the meridian of the American magnetic pole passing not far from the Caribbean sea, and that of the Siberian pole

through the China sea. To the charts I have annexed an engraving of a meteorological table, as registered at Birmingham, by Mr. Osler's anemometer, and endeavoured to make better known the successful efforts of Mr. Whewell and Mr. Osler, to measure the wind's force. It is very desirable that these beautiful instruments should be placed beyond the limits of our own islands, particularly in the West Indies and at the Cape of Good Hope, where they may measure the force of such a storm as no canvas can withstand—that which reduces a ship to bare poles. It is not only to measure the wind's greatest force that it is desirable to multiply these anemometers, and place them in various localities, but that we may endeavour, by their means, to learn something more definitive regarding the gusts and squalls of wind which always occur in great storms."

"The paper was heard throughout with much applause, and at its close the same sentiment was loudly expressed. Our readers may form a very familiar idea of the subject by causing the water to circulate in a basin, which will represent the violent circular motion of the storm-wind, with a calm in the centre of the vortex. Suppose this to be also moving onward, at no greater rate than about seven miles an hour, and you have the correct notion of the result of Col. Reid's observation. Near the equator the law is more constant; but when a succession of storms reach northern or southern latitudes beyond the tropics, (as where we are placed,) their mixture and interference is the cause of our more variable winds.

"It is remarkable, that water-spouts, in both hemispheres, obey altogether opposite laws, and that their gyrations proceed in opposite directions to the gyrations of the storm.

"Professor Bache addressed the meeting; and (after complimenting Col. Reid on the handsome manner in which he had attributed so much praise to his countryman, Mr. Redfield, while he might have so justly appropriated it to himself,) stated that Mr. Redfield's opinions had been controverted by Mr. Epsy of Philadelphia, whose papers were published in the American "Philosophical Transactions," and those of the Franklin Institute. Mr. Epsy held that storms were created by winds blowing into a centre made by condensation of the atmosphere; and he, Mr. Bache, had himself surveyed the course of a land tornado, in which all trees, buildings, &c., had fallen inwards, as if this were the true exposition of the phenomenon. From the centre he presumed that the air rushed upwards; and thus the tempest continued.

"Professor Stevelly explained his views, and compared the motion of the aerial phenomenon to that of water running out of a tub, in the bottom of which a small hole was made.

"Sir John Herschel spoke highly in commendation of Col. Reid's paper, and of the important consequences to which the further investigation of the subject and the accumulation of data must lead. He illustrated it by an amusing allusion to Franklin, who, when contemptuously asked by a sailor, 'What has any landsman ever done in inquiries of this kind?' replied, 'Why, they have done one thing; for landsmen invented navigation!' A knowledge of the present subject would teach seamen how to steer their ships, and save thousands of lives. Sir John suggested that the Gulf Stream might be connected with the theory involved in this investigation; and also that the trade winds might throw a light upon the phenomena which it presented. He also alluded to the spots observed on the sun, which, by analogy, might bear upon it, as he considered them, without doubt, to be the upper apertures of great hurricanes passing over the disc of that luminary, the atmosphere moving analogously to our trade winds, and being disturbed by certain causes, precisely as the earth's atmosphere might be.

We shall conclude this extract with a cordial recommendation to every seaman to study "Col. Reid's Facts on the Law of Storms."

LAND SHARKS AND SEA GULLS. *By Capt. Glascock, R.N.* London, Bentley.

It is easy to foresee that the author of the *Naval Sketch Book* will be no less welcome with his new yarn under the foregoing quaint title, than he was long ago with his excellent sketches of naval character. There are some capital portraits shown up, under the name of "Land Sharks and Sea Gulls," with admirable truth and spirit, of the bar, the senate and the church, and albeit of Jack himself, both

in and out of his own darling element. We promise the reader who will take up the book a treat for his pains, and when we say it abounds with fun, free from overstrained improbabilities, it is no small recommendation. George Cruickshank has also had his share of it to perform.

DICTIONARY OF ARTS, MANUFACTURES, AND MINES; containing a clear exposition of their principles and practice. By Andrew Ure, M.D.

The present day abounds with matters of real utility as well as others, light and flimsy in the literary way, but among the former, the very name of the work before us claims for itself a prominent place. A Dictionary of such matters as are stated in the title, how truly valuable from the able master-hand of Dr. Ure. The present we perceive is the first number of this work, to be completed in ten monthly parts. We give it our hearty recommendation and shall watch its progress with satisfaction.

PROPOSED PLAN FOR IMPROVING DOVER HARBOUR BY AN EXTENSION OF THE SOUTH PIER HEAD, &c., &c. By Lieut. Worthington, R.N.

Assuredly Lieut. Worthington deserves well of the people of Dover, for the pains with which he has devoted himself to the subject of improving their harbour, an achievement we may say, which the numerous attempts hitherto made, have all failed to accomplish—although it is our own opinion that Lieut. Worthington's plan, if executed, would assuredly follow in the train of its predecessors, even if the sea were merciful to his proposed "extensions," and, which there is too much reason for supposing it would not be,—although this may be our opinion, we do not consider ourselves authorized to sit in judgment on it. But anticipating failure in any shape, and therefore desirous to see both the credit of a work as well its expense saved; we trust that the authorities of Dover will pause before they undertake to perform that proposed by Lieut. Worthington. Dover Harbour has long been filling up, and there is no reason for doubting it will continue to do so, and if it be desirable to preserve that harbour it must be done by some other plan than that here proposed. It ought to be preserved, there can be no doubt, and we hope by some means or other that it will be.

**I. THE MARINER'S LATITUDE AND LONGITUDE READY COMPUTER.
II. THE BOOK OF FORMULÆ, FOR FINDING THE LATITUDE AT SEA, &c.
T. Hurst, St. Paul's Church Yard.**

We venture to say that those who once begin the use of formulæ in working their observations, will not forsake them but by necessity. The above are by Mr. Thomas Beverly, lately in the merchant trade, and therefore, being beside, an astronomer and mathematician, well calculated to supply the wants, in his own way, of his brother mariners.—The idea is exceedingly good, and if carried out to all kinds of celestial observation, would do much towards the safe navigating of our merchant shipping. With this opinion we need scarcely say, that, formulæ ought to be generally adopted both in the Royal and Mercantile Navy.

DEEPENING THE BEDS OF NAVIGABLE RIVERS.—We have been much gratified by the perusal of a very simple and we have no doubt efficacious plan, by Mr. Tait, Civil Engineer, for deepening the Beds of Estuaries and Navigable Rivers. It has, we are informed, been submitted to that public spirited body the Mayor and Corporation of Liverpool. We are anxious to hear of the success of its practical application, as we have very little doubt that, if adopted, it will be the salvation of that most important river, the Mersey.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

LIEUTENANTS,—A. Kennedy, H.G., Hawkins, G. Ogle.

MASTERS,—L. C. Bailey, S. Haynes, W. Every, C. Tozer, T. R. Lord, W. T. Wheeler, C. H. Dillon, D. Duncan, R. W. W. Miller, J. Cater, R. Frampton, W. Barrett, R. Salmund, A. B. Usborn, W. Langdon, D. S. Edwards, W. Parsons, J. C. Hutchings, D. Craigie, S. Lark, G. Grant, H. Mapleton, T. B. Codnor, G. H. Skead.

SURGEONS,—J. Munro, C. R. Airy, J. Chegwyn, E. P. Cole, A. L. Panchen.

PURSERS,—G. Wallis, J. Gregory, S. Brookesley, J. T. Hemer, R. M. Jeffrey, P. O. Connor, J. Westwood, J. C. Heathman, T. R. Hallett, W. Wilkins.

APPOINTMENTS.

ACTEON, 26,—*Lieutenant*, E. Pierce; *Second-Master*, H. Webb; *Vol.*, E. Lambert, H. V. A. Powlett; *Clerk*, J. Hutchings. ASCENSION ISLAND,—*Surgeon*, W. T. Ballantine. ASTRÆA, 6.—*Surgeon*, J. M'Ternan. ATHOL,—*Lieut.*, A. M. Fairman; *Master-Assist.*, C. Maitland. BONETTA,—*Mate*, G. S. Boys, BRITANNIA, 120,—*Mate*, C. Hawkey; *Vol.*, W. Drummond. BUZZARD,—*Mate*, R. D. Aldrich. COAST-GUARD,—*Commanders*, H. R. Stutt, C. Parker; *Lieutenants*, H. Blair, D. Leary. CORNWALLIS, 74,—*Lieuts.*, F. Lowe, J. A. Gordon. DEVONPORT, Harbour-Master, W. Walker; *Assistant-Master*, J. Henderson. EDINBURGH, 74,—*Mate*, G. D. Keane, H. S. Micklethwaite. EXCELLENT,—*Lieutenant*, B. J. Wilson; *Mate*, A. P. Greene; *Midshipman*, W. Cudwoll. GRECIAN, 16,—*Commander*, W. Smith. HARLEQUIN, 16,—*Commander*, Lord F. Russell. HASTINGS, 74,—*Purser*, J. D. Jones; *Mate*, F. Rose; *Second-Master*, W. Woodyear; *Mates*, F. T. Cheetham, J. Fisher, C. F. Chmno; *Clerk*, E. A. Smith. HERALD, 18,—*Lieutenant*, D. B. Bedford. HERCULES, 74,—*Mates*, W. L. Rees, J. E. Risk, J. Gordon. HERMES, St. V.—W. B. Ballard. HORNET, 6,—*Assistant-Surgeon*, W. Hobbs. INCONSTANT, 36, *Lieutenant*, J. W. Noble. MAGNIFICENT, 74,—*Clerk*, J. C. Aldridge. MELVILLE, 74, *Clerk*, C. F. Niblet. NIAGARA, on Lake Ontario,—*Surgeon*, A. C. McLeroy. NORTHSTAR, 28,—*Lt.* J. C. Robinson. OCEAN, 80,—*Lt.* G. Williamson. ORESTES, 18, *Lieutenant*, J. Rawstorne; *Mates*, J. Franklin, W. Parsons; *Vol.*, T. T. Hamby; *Assist.-Master*, J. Studwell. PEMBROKE, 74, *Lt.*, T. Stewart; *Mates*, G. R. Snow, R. Smith. PENGUIN, Packet, *Act.-Master*, J. Ryan. PETRAL, Packet,—*Lieutenant*, W. Cooke; *Act.-Master*, R. Thomas. PIQUE, 86, *Clerk*, W. J. Whitefield. PILOT, 16,—*Mid.*, N. K. Wacey. POICTIERS, 74, *Lieuts.*, N. Williamson, P. Bisson. PRINCESS CHARLOTTE, 104,—*Mate*, B. Le Mesurier. ROYAL ADELAIDE, 104,—*Assistant-Surgeon*, J. Dunse, H. Edmunds; *Mate*, E. K. Barnard. ROYAL GEORGE Yacht,—*Second-Master*,—H. B. Harris. SAN JOSEF, 110,—*Assistant-Master*, H. B. Cummings. RACER, 16, *Commander*, G. Byng; *Purser*, J. N. Nicolas. RODNEY, 92,—*Lieutenants*, W. F. Burnett, Hon. C. Elliott. ROLLA, 10,—*Lieutenant*, C. Hall. ROVER, 18,—*Commander*, T. M. Symonds; *Lieutenant*, H. Bunce; *Master*, E. P. Cole; *Purser*, R. T. Keep; *Assistant-Surgeon*, J. Maclean; *Clerk*, T. E. Keep. SEAFLOWER, *Assistant-Master*, J. Hughes. SKYLARK, Packet,—*Assistant-Master*, G. Johns. SERINGAPATAM, 46, *Assistant-Surgeon*, W. Roberts. TALAVERA, 74,—*Clerk*, W. H. Harris. VICTORY, 104,—*Chaplain*, E. Winder. VOLCANO, St. V., *Clerk* in Ch., R. Parker.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ACHERON, St. V., 23rd August, launched at Sheerness. AFRICAN, St. V., Capt. Beechey, 13th August, arrived at the Isle of Man. APOLLO, 46, 16th September, arrived at Portsmouth from Dublin, with troops. ATHOL, 28, Mr. Bellamy, 8th

August, sailed from Plymouth for Cork. BUZZARD, 3, 15th August, commissioned at Plymouth. COLUMBINE, 16, Commander Henderson, 24th August, sailed from Portsmouth for the Cape of Good Hope. CURLEW, 10, Commander Norcott, 1st September, arrived at Portsmouth from Africa. GORGON, St. V., Commander Dacres, 31st August, arrived at Portsmouth from the Nore. HERALD, 18, Captain Nias, 30th August, left Plymouth for East Indies. HERCULES, 74, Captain T. Nicholas, 11th September, sailed from Plymouth for Cork and Gibraltar. MAGICIENNE, 24, 15th September, arrived at Portsmouth from Lisbon. METEOR, St. V., Commander D. Pritchard, 5th September, sailed from Plymouth for Scilly Isles. PETTRAL, 28th August, commissioned at Plymouth by Lieutenant W. Cooke. PILOT, 16, Commander G. Ramsay, at Plymouth, fitting. PIQUE, 36, Captain E. Boxer, 6th September, at Sheerness from Portsmouth. ROVER, 18, commissioned at Plymouth, by Commander T. C. Symonds. ROYALIST, 10, 3rd September, paid off into ordinary. SPITFIRE, 6, St. V., Lieutenant Commander H. Kennedy, 24th August, arrived at Plymouth from Gibraltar; 31st, sailed for Woolwich to be paid off. TRIBUNE, 24, Captain Tomkinson, 24th August, sailed from Portsmouth for Lisbon. VERNON, 50, commissioned by Lord John Churchill, fitting at Sheerness.

ABROAD.

ANDROMACHE, 28, Captain L. Baynes, 3rd August, arrived at Quebec. ARROW, 10, 25th July arrived at Teneriffe, and sailed for Falkland Islands. ASIA, 84, Capt. W. Fisher, sailed from Malta to the westward. BARHAM, 50, Captain A. L. Corry, 29th, sailed from Malta for the westward. BEAGLE, 10, St. V., Commander T. C. Wickham, 17th April, King George's Sound. BLAZER, St. V., 23rd August, sailed from Malta for Gibraltar. CALEDONIA, 120, Admiral Sir B. Stopford, 29th July, sailed from Malta for westward. CALLIOPE, 28, 30th June, at Rio from Valparaiso, 9th July sailed. CASTOR, 36, Captain E. Collier, 27th July, sailed for Barcelona. CHARYBDIS, 3, Hon. Lt. Gore, 8th August, Prince Edward's Island. CONFIANCE, 2, Lt. Stopford, 6th August, at Malta from Naples, 26th sailed for Palermo. CONWAY, 28, Captain C. B. Drinkwater, 21st April, Hobart Town. CORNWALLIS, 74, Capt. Sir R. Grant, 9th August, sailed from Quebec for England, 21st, Halifax. FIRE-FLY, St. V., Lieutenant T. Pearce, 1st August, at Alexandria from Beront, 14th sailed from Malta. FLY, 18, Commander R. Elliott, 28th April, Valparaiso. HARLEQUIN, 16, Commander T. E. Erskine, 31st August, Gibraltar. HERMES, St. V., Lieutenant W. Blount, 16th August, arrived at Gibraltar; 24th, arrived at Malta. IMOGENE, 28, Captain H. W. Bruce, 12th April, Callao. INCONSTANT, 36, Captain D. Pring, 7th August at Quebec. JASEUR, 16, Commander F. M. Boulton, 21st August, sailed from Malta for Barcelona. LARK, 4, 4th July, sailed from Jamaica on a cruise. LIGHTNING, St. V., 20th August, arrived at Ostend from Woolwich. MADAGASCAR, 46, Captain Sir J. S. Peyton, 21st July, at Quebec from Halifax; 2nd August sailed from Quebec. MAGICIENNE, 24, Captain Mildmay, 21st August sailed for the Levant; 4th September, Lisbon. MALABAR, 74, Captain Sir W. A. Montague, 4th August, arrived at Quebec from Halifax. MEDEA, 4, St. V., 11th August, sailed from Halifax for Prince Edward's Island; 12th, arrived and sailed again for Halifax; 16th at Quebec. MEGERA, St. V., Lieutenant Goldsmith, 24th August, sailed for Malta from Ionian Islands. NAUTILUS, 10, 11th July, at Ascension. NIMROD, 20, Commander T. Frazer, 21st June, arrived at Vera Cruz. PEARL, 20, Capt. Lord Clarence Paget, 11th August, sailed for Halifax. PEMBROKE, 74, Captain F. Moresby, 29th July, sailed from Malta for the westward. PRESIDENT, 52, Flag of Rear Admiral Ross, 29th May, sailed from Valparaiso for Callao. RACEHORSE, 18, Commander M. H. Crawford, 3rd August, arrived at Prince Edward's Island from Gaspé; 8th sailed for Quebec. RALEIGH, 18, Commander M. Quin, 21st May, arrived at Madras from Trincomalee. RHADAMANTHUS, St. V., Commander A. Wakefield, 29th July, sailed from Malta for the westward; 6th August returned to Malta. RODNEY, 92, Captain H. Parker, 29th July, sailed from Malta for the westward. RUSSELL, 74, Captain Sir W. H. Dillon, K.C.H., 4th September, Tagus. SAMARANG, 25, Capt. W. Broughton, 3rd July, arrived at Rio from Buenos Ayres. SCORPION, 10, Lieutenant Commander C. Gayton, 24th August, arrived at Valencia from Barcelona. SCYLLA, 16, Commander Hon. J. Denman, 4th September, Tagus. SERINGAPATAM, 46, Captain J. Leith, 10th July, sailed from Barbadoes for St. Lucia; 16th returned. SKIPJACK, 5, Lieutenant J. Robinson, 21st July, left Shelborne for St. John's, New Brunswick. SPARROWHAWK, 16, Commander J. Sheppard, 13th July, arrived at Rio from Bahia. STAG, 46, Commodore T. B. Sullivan, 30th June, at Rio from Valparaiso. TALavera, 74, Captain W. B. Mends, 3rd August, at Malta from Gibraltar. TALBOT, 28, 27th July, arrived at Malta;

8th August, sailed for Smyrna. **TRIBUNE**, 24, Capt. Tomkinson, 4th September, at Lisbon. **TRINCULO**, 16, Commander H. E. Coffin, 31st July, at Cadiz. **TYNE**, 28, Captain T. Townsend, 21st August, sailed from Constantinople with dispatches. **VANGUARD**, 80, Captain Sir T. Fellowes, 29th July, sailed from Malta for the westward. **VESTAL**, 26, 18th August, arrived at Quebec from Bermuda. **VICTOR**, 16, 19th May, arrived at Madras from Kedgeree. **VOLAGE**, 28, 17th June, arrived at the Cape of Good Hope from Rio and Plymouth; 30th, sailed for India. **VOLCANO**, St. V., 16th August, arrived at Gibraltar from Malta. **WASP**, 16, Lieutenant Crozier, 29th, sailed from Malta for the westward. **WEAZLE**, 10, Commander John Simpson, 9th August, arrived at Malta; 18th, sailed for Barcelona. **WIZARD**, 10, Lieutenant Commander E. L. Harvey, 10th July, arrived at Bahia; 17th, sailed for Pernambuco. **WOLVERINE**, 16, Commander Hon. E. Howard, 16th August, arrived at Gibraltar from Malta; 21st, sailed for the eastward. **ZEBRA**, 16, Commander R. McCrea, 21st, sailed from Madras for England.

Births.

On the 3rd. Sept. at Southsea, the wife of Mr. Gulliver, Purser R.N. of a son.

At Shroton, Dorset, the Lady of Capt. Ryves, R.N. C.B. of a daughter.

On the 7th, Sept. at Boulogne-sur-Mer, the Lady of Capt. G. Tupman, R.N. of a son and heir.

At Titchfield, on the 3rd. Sept. the Lady of Capt. Anderson, R.N. of a son.

Marriages.

On the 13th, Sept. at Mansel Gamaege, in the county of Hereford, the Rev. Edwin Hotham, second son of Adml. Sir William Hotham, K.C.B. to Harriet, youngest daughter of Sir John Geers Cotterell, Bart. of Garnons.

At Kingston, on the 1st. Sept. by the Rev. Dr. Morgan, Chaplain of her Majesty's Dock-yard, John Powney, Esq. Captain R.N. K.H. of Orizava, near Chudleigh, Devon, to Isabella Carleton, eldest daughter of the late Wm. Willie, Esq. of North End Cottage, near Portsmouth, Purser, R.N.

At Bishop's Hull, on the 30th, August, by the Rev. Proctor Thomas, Lieut. Wm. Maclean, R.N. ninth son of A. Maclean, Esq. of Ardgour, and of Lady Margaret Hope, to Fanny, daughter of the late J. Charter, Esq. of Lynchfield House, Somerset.

At St. Pancras Church, on the 1st. Sept. John Thomson, Esq. of Devonshire Street, Portland Place, to Anna Maria, only daughter of the late Capt. John Hudson, R.N.

At Wrenbury, Cheshire, J. W. C. Starkey, Esq., of the Madras Army, to Sophia, daughter of the late Capt. R. Campbell, R.N.

At Charles Church, Plymouth, on the 22nd of August, by the Rev. Septimus Courtney, John Garrett Russell, Esq., of Bussellton, Western Australia, son of the late Rev. W. M. Bussell, of Portsea,

to Charlotte, relict of the late John Cookworthy, Esq., and daughter of the late Captain Peter Spicer, R.N.

On the 8th Sept., at All Saints' Church, Maidstone, Edward Frederick Leeks, Esq. Solicitor, of James street, Buckingham-place, to Ann, only daughter of James Lowry, Esq., M.D. R.N., of Maidstone.

At Sidney, New South Wales, on the 10th April, John Roach, Esq., Commander of her Majesty's colonial cruiser Prince George, to Eliza, eldest daughter of J. Nicholson, Esq., R.N. Sydney, N.S.W.

On the 1st Sept., Commander Powney, R.N., K.H., of Chudleigh, Devon, son of the late P. P. Powney, Esq., M.P. for Windsor, to Isabella, youngest daughter of the late W. Willie, Esq.

Deaths.

At Portsea, on the 26th, July, Retired Commander John Good, aged, 69.

At Portland-place, Morrice-Town, suddenly. Mr. R. Burstall, Master, R.N. (1797.)

At Weedville, North Britain, Henry, Best, Esq. Purser, R.N. 1802, aged, 62.

At Jubbulpoor, in the East Indies, on the 14th, November, 1837, Thomas Mounstevan Bremer, son of the late Commander James Bremer, and grandson of the late Capt. James Bremer, R.N.

At Southsea, on the 28th, August, Capt. W. Simpson, R.N. aged, 49.

At Bovisand, on the 26th, August, Mr. Richard Turner, Master, R.N., Queen's Harbour Master at the Port of Plymouth.

At Douglas Castle, North Britain, on the 30th, July, the Hon. Capt. George Douglas, R.N., brother of the Right. Hon. Lord Douglas.

At Cowes, Frederick, third son of Capt. E. Ratsey, R.N.

At Brighton, at his residence on the Grand Parade, Thomas Pearson Crossdaile, Esq., Commander, R.N.

Lately on the Coast of Africa, Mr. Cole, Assistant Surgeon, and Mr. Barrow, Mate, both of the Scout sloop-of-war.

Near Chichester, on the 18th August, sincerely and deservedly beloved and regretted, Anna Maria, wife of Lieut. Macnamara, R.N.

On the 7th Sept., at Terrington, in Norfolk, in the 89th year of her age, Lady Anne Hamond, widow of the late Sir

Andrew Snape Hamond, Bart., many years Comptroller of the Royal Navy.

At Torquay, on the 14th August, Mr. Edward Spencer, Master R.N., aged 63.

Lately, Mrs. Bunce, relict of Joseph Bunce, Esq., Commander, R.N., Union-street, Stonehouse.

In Cobourg-street, Plymouth, on the 7th Sept., suddenly, Commander Henry Payne, R.N., 1814.

METEOROLOGICAL REGISTER,

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

AUGUST, 1838.

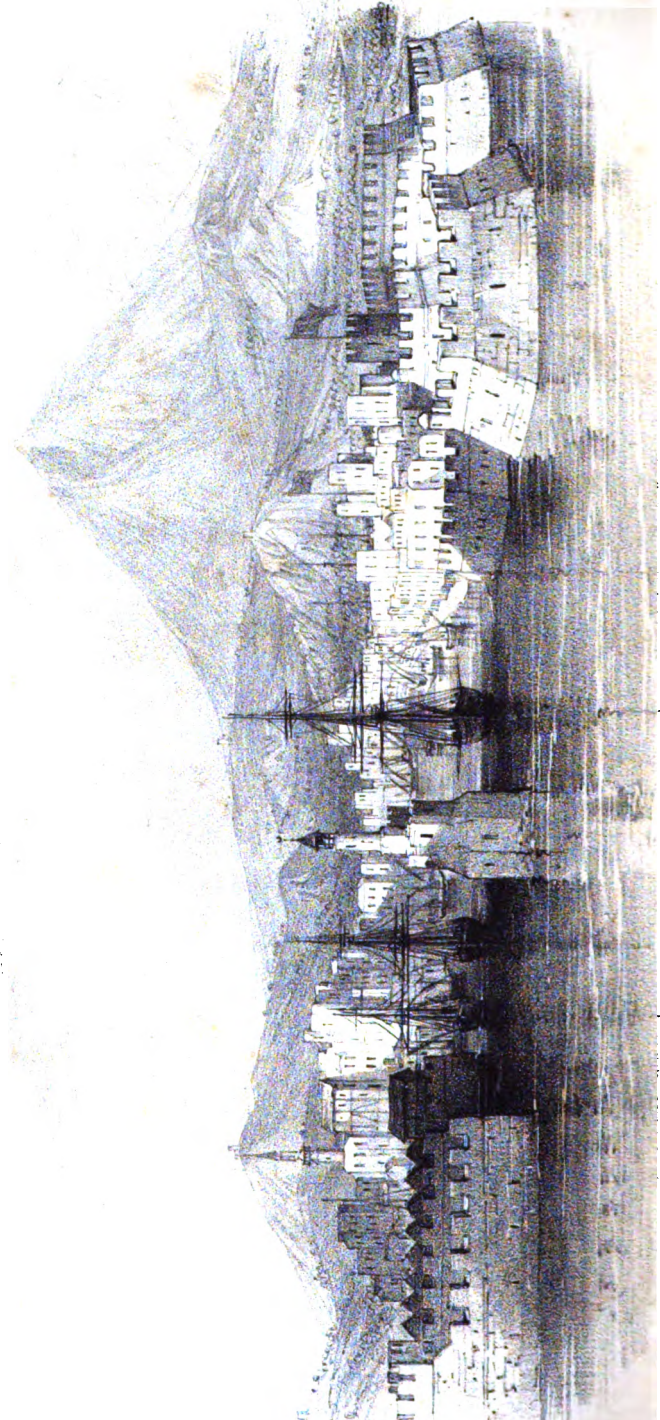
Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	Tu.	29.35	29.39	63	65	56	70	S.W.	S.W.	7	8	Qbc.	Qp. (3)
22	W.	29.26	29.25	60	64	52	65	S.	S.W.	9	7	Qbcp. (2)	Qbcp. (3)
23	Th.	29.46	29.56	58	62	49	64	N.W.	N.W.	6	6	Qprtl. (2)	Qbcp. (3)
24	F.	29.96	30.01	58	61	48	64	N.W.	N.W.	3	3	O.	O.
25	S.	30.08	30.06	57	62	45	67	S.W.	S.W.	3	3	Bcm	Or. (3)
26	Su.	30.11	30.11	59	68	52	68	N.W.	W.	3	3	Bc.	Bc.
27	M.	30.14	30.15	67	74	58	75	W	N.W.	2	2	B.	B.
28	Tu.	30.10	30.00	66	78	62	79	S.W.	S.	1	2	Bc.	Bcl.
29	W.	29.82	29.98	59	57	57	59	N.W.	N.	7	8	Go.	Go.
30	Th.	30.16	30.16	53	63	42	64	N.W.	N.W.	3	4	Bc.	B.
31	F.	30.16	30.16	59	66	45	67	W.	W.	2	2	B.	B.

August—Mean height of the Barometer = 29.939 inches; Mean temperature = 61.4 degrees
Depth of Rain fallen = 0.95 inches.

SEPTEMBER 1838.

1	S.	30.10	30.09	61	66	49	67	W.	S.W.	2	2	Bc.	B.
2	Su.	30.14	30.16	60	68	56	69	W.	W.	1	2	Bcm.	Bcm.
3	M.	30.19	30.15	58	67	50	69	W.	S.W.	2	2	Bcm.	Bc.
4	Tu.	29.97	29.87	56	72	45	72	S.W.	S.W.	3	3	B.	Bc.
5	W.	29.62	29.54	67	72	55	73	S.	S.	6	7	Qbc.	Qbc.
6	Th.	29.30	29.29	57	64	57	65	S.	S.W.	3	4	Or. (2)	Bcp. (3)
7	F.	29.36	29.36	61	67	55	68	S.	S.	4	3	Bc.	Bcl.
8	S.	29.63	29.75	49	53	48	55	N.	N.	6	7	Od. (2)	O.
9	Su.	30.20	30.24	48	58	39	59	W.	N.W.	2	3	Bcm.	Bcm.
10	M.	30.39	30.43	47	57	42	58	W.	N.	1	1	Bfm.	Bm.
11	Tu.	30.53	30.53	48	58	38	58	N.	S.W.	1	1	Bfm.	Bm.
12	W.	30.49	30.45	54	64	43	65	S.W.	S.W.	1	2	Bm.	Bm.
13	Th.	30.31	30.25	61	64	49	65	S.W.	S.W.	1	2	O.	O.
14	F.	30.13	30.11	58	66	49	68	S.W.	S.W.	2	2	B.	Og.
15	S.	30.10	30.06	59	64	57	66	N.E.	N.E.	1	2	Om.	Bcm.
16	Su.	30.06	30.04	54	66	48	70	S.W.	N.	1	1	Fbm.	B.
17	M.	30.06	30.08	59	65	53	68	N.E.	N.E.	2	2	Bc.	Bc.
18	Tu.	30.04	30.00	58	62	50	64	N.E.	N.E.	4	4	Bc.	O.
19	W.	29.94	29.88	55	57	54	58	N.E.	E.	3	2	Or. (2)	Od. (3)
20	Th.	29.85	29.85	56	61	53	65	W.	W.	3	3	Bc.	Bcp. (3)

NOTE.—The Aurora Borealis appeared conspicuously on the evenings of August 22nd, Sept. 13th, 15th, and 16th. Sept. 11th, the grass in Greenwich Park was white with hoar frost this morning at sun-rise.



1840. Valparaiso, Chile. From the sea.

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ORIGINAL PAPERS.

NOVEMBER, 1838.

NEW SHOALS IN THE CHINA SEA, *Coast of Palawan.* By Capt.
J. H. Brown.

IN several former numbers of the *Nautical Magazine* we have given the positions of dangerous shoals in the China sea;* and we are now enabled, by the zealous attention of the Commander of the ship *Arabian*, for the safety of his brother seamen, to lay before them the positions of some new and important dangers, which we recommend them at once to transfer to their charts. Such communications as these will do much for the security of the difficult navigation of the part of the China sea in question; and we may briefly assure Capt. Brown that the information to which he alludes, respecting Palawan, will be no less welcome to the pages of the *Nautical*.

Caston, February 1st, 1838.

Sir,—Well knowing your laudable wish and endeavours to make public the position of any new dangers, I hasten to give you the earliest information of the situation of some Coral Banks or Shoals in the China sea hitherto unknown.

By insertion in your very highly esteemed publication, you will oblige a constant reader,

And, Sir,

Your very obedient Servant,

J. H. BROWN,

Commander of ship *Arabian*.

On the 8th January, 1838, on our passage to China by the *Palawan*, standing to the northward, wind N.E., at 10h. 30m. A.M. passed close to windward of a coral patch, with apparently five or six fathoms over it, blowing fresh and a good deal of sea: could not lower a boat to determine. It lies in $10^{\circ} 30' N.$, $116^{\circ} 39' E.$

Same day, laying up east on the larboard tack, at 3h. 30m. P.M. came suddenly into shoal water. Saw the coral rocks very distinctly under the ship's bottom. Hove the lead over, first cast had five fathoms, and mark five above water for a few casts. Put the helm up, and ran to the southward a few minutes, until we gradually deepened to thirty fathoms, and no bottom.

* See p. 224, vol. 1837, and p. 601, vol. 1836.

We appeared to be on the southern edge of an extensive coral flat, extending N.E. and N.W. of us, some miles by sight, for chronometer taken immediately we came off the shoal; this part of it lies in long. $116^{\circ} 58' E.$, or $4'$ east of the Bombay reef, which we left yesterday, and lat. $10^{\circ} 35' N.$, in which we observed at noon, having made a due east course.

The following day, 9th, at 9 A.M., standing to the northward, with a fresh wind from N.E., and a heavy head sea; came again into shoal water: coral rocks seen very close to our keel, but before we had the lead forward passed over the ridge into twenty-eight fathoms. I must here observe that the look-out at the mast-head was, in both cases, very bad, neither shoals being announced; although from experience I know coral shoals can be seen from the mast-head at a good distance when the sun is behind, which was the case in these instances. From 9 to 11h. 30m. A.M., ran eight miles on a N.N.W. course in irregular coral soundings: least water, by the lead, eleven fathoms, but at times we apparently had much less from the proximity of the coral rocks.

We entered upon this flat in lat. $10^{\circ} 39' N.$, long. $117^{\circ} 22' E.$; came off in lat. $10^{\circ} 46'$, long. $117^{\circ} 17'$. The longitude computed from a series of sights, before and after noon; the latitude by a good meridian altitude, four observers, and clear weather. In passing over this bank the water appeared very shoal east and west of us: lying in ridges in that direction.

January 11th, at 6 P.M., standing to the eastward, came again into shoal water: saw the black rocks under the bottom. We were at this time in long. $118^{\circ} 50' E.$, by sights taken an hour and half before; lat. $11^{\circ} 7' N.$, (the bearings taken a short time previous). The Table land on Palawan, S.E. by E. $\frac{1}{2}$ E.: northermost land E. by N. $\frac{1}{2}$ N., and not less than thirty miles off the nearest land. Tacked and stood off, least water by the lead thirteen fathoms, deepening suddenly to 50 and 100 fathoms: no bottom. This lies further out than any of the patches found by Capt. Ross. I am confident as to the above position being correct, corroborating the latitude by stars on both sides, north and south.

By reference to the chart a line through the centre of the Sea-horse bank, W. by S. $\frac{1}{2}$ S., and E. by N. $\frac{1}{2}$ N., cuts the centre of each of the above shoals or banks.

I must also observe, that I made all the principal reefs on the western side of the channel, as regular as mile-stones, and as far as my abilities and good watches can determine, they are correctly laid down.

But the Viper shoals do not exist as *breakers* in the position assigned them on the charts, as we were on the site of each at clear noon-day.

Neither does the Pennsylvania, as *breakers*, laid down N. by W.,

twenty miles from the Bombay reef, as I crossed its position very close, and directly from the above reef. It is to be regretted that those numerous Pensylvanias are not specified as shoals or *breakers*, as it is not unlikely that the first coral patch seen by us was one of the said shoals; but they had always been represented to me as breakers, and as such I kept looking for them. I could say much about the Palawan, but I am intruding on your patience.

J. H. B.

To the foregoing information we are enabled, by the attention of Capt. Washington, R.N., the invaluable secretary of the Geographical Society, to add the following important extract from a Log-book:—

Extract from the Log-book of the ship Argyll, Thomas Sandys, Commander, dated Palawan Passage, November 12th, 1837.

“At half-past eight, A.M., saw coral rocks close under the ship's bottom, with not more than four or four and half fathoms water on them. Hove in stays, and while going about, the ship's heel appeared close down upon the rocks. Having no lead in the chains, did not sound at the time; but after running east three miles, (the water still continuing discoloured,) luffed up and got a cast of the deep-sea lead. Had twenty-seven fathoms, coral: lat. brought back from noon by observation 11° N., long., by chronometer, by two sets of good sights, $117^{\circ} 32'$ E., having steered due east from the time of being on the shoal.”

R. G. LAICY.

CAY ARENAS, *Gulf of Mexico.*

CAY Arenas is composed of a mass of coral heads usually termed brain stones. The windward side is formed entirely of this coral, but the others are intermixed with fine and coarse sand. The deposit from the boobies, and other birds, has raised this mass to a height of eleven feet above the ocean; and on the southern extreme, a beacon of stones has been erected, the top of which is twenty feet above the sea. Equal altitudes, two days from Alacran, gave meridian distance $6^{\circ} 51' 5''$ west, and stars, north and south, $22^{\circ} 7' 10''$ north. Instead of a spacious bay, as in the Admiralty chart, we found the anchorage a miserable cove, in which there is scarcely room for three small vessels, and by no means a pleasant place to be caught with a westerly wind. A vessel should anchor under the windward reef in six or seven fathoms, in preference to this cove, and she will have sufficient room to get under way should the wind come from that quarter. Light variable southerly winds and calms generally precede them. We had a regular norther here on the 18th of April; a sure indication of which is the rising of the barometer. In this instance it amounted to 0 in. 40, a great rise

for this climate. The gale lasted two days, but we rode it out very well, in comparatively smooth water under the windward reef.

The channels between the reefs are distinctly seen from aloft. Should the weather be dark, however it is not so: then run with the extreme west end of Cay Arenas, bearing N.N.W. $\frac{1}{2}$ W., until it subtends an angle of 85° with the easternmost or Stoney Cay; or when this bears N.E. by E., then haul up and choose your anchorage in ten, seven, or five fathoms; observing, close under the reef, there is more shelter from S.E. winds, which at times throw in a heavy swell. Should the wind be at N. or N.E., run with west end of the Cay Arenas, S.W. by S., until Stoney Cay subtends an angle of 95° ; or when it bears S.E. by E. $\frac{1}{2}$ E., then proceed as before.

The tides here are precisely the same as at Alacran. It was full moon on the 9th April, about eight in the evening. The same careful man at the tide pole, on the 10th observed it to fall from 8 A.M. to 6 P.M., seven inches, and on the following day, from six to six, twelve inches. Wind from E.N.E. to S.E. by E. If this is not caused by the wind, it is a regular twelve hours tide. High water at full and change, about 5 A.M., the fall being about one inch per hour. Fish and birds are much the same as at Alacran. Seals are also found here of the smooth-haired kind of North America,—a distinct species from the fur seals of the South Seas. We killed several, and got about twelve gallons of good oil from each. This Cay, the Serranilla, and the Baxo Nuevo, to the southward of Pedro Bank, are scarcely ever visited by fishermen; and are the only ones we found seals on. One boat made her appearance, but on seeing us put back for the main. I very much doubt if the seals are plentiful enough to make it worth following up solely; but, combined with fishing and turtling, it may be so. It is worthy of worthy of remark, we had but one shower of rain in the two months March and April.

The north coast of Yucatan is the most devoid of change of feature that I have ever seen; it is composed of white sand and shells. The ridge just above high-water mark is the highest, being about twenty-five feet; but much is covered with bushes and shrubs, and the beach can be seen five or six miles from a height of eight feet. The small elevations are clumps of black mangrove trees, growing in swamps from 50 to 100 feet. The great mass are of the cabbage palm, which is seen on the peninsula of Largatos particularly. Here the bushes, exposed to the wash of the sea, are white from the quantity of dried salt on them, giving them the appearance of sandy cliffs at a short distance. The ill-defined rounding point named Colorado, I consider is in lat. $21^\circ 36' 20''$ N., long. $88^\circ 0' 0''$ W. Here the Santa Martha is said to have been wrecked, 840 fathoms off shore. She would have grounded at a greater distance on any other part of the shore, between this and Sisal; but there cannot be a more safe coast to approach by the lead.

A RAMBLE AMIDST THE ROCKY MOUNTAINS OF SOCOTRA.

By Lieut. J. R. Welsted, F.R.S., F.R.A.S., &c. Author of
 "Travels in Arabia."

Read at a late Evening Meeting of the United Service Museum; and extracted
 from the United Service Journal.*

(Continued from page 610.)

I SHALL now give some account of the general configuration and productions of the range. The Jebel Hadjar, or rocky mountains, cover a tract of country about ten miles in length and seven in breadth; they expose a number of sharp parallel ridges, crossed by steep valleys. On the northern, the side we ascended, they are more precipitous than on the southern. Above the crest or saddle crossed by these valleys the range rises into rugged and pointed peaks of very unequal elevation. They are sometimes connected by *plateaux* of limestone, and not unfrequently a considerable portion of the same formation may be perceived borne up between two peaks, or wrapped in folds around their shoulders. With the exception of some solitary dragon's-blood trees, the roots of which find sufficient nourishment in the clefts and hollows of the rock, the granite spires are wholly destitute of trees or vegetation, but are covered with a yellow and red moss, much used for dying by the natives. From the plains below, on a clear day, this variety of colouring, when the sun is shining on them, produces a very peculiar and striking effect.

The four largest valleys, commencing at their eastern, and taking them in succession towards the western extremity of the range, are Wadis Jumal, Kishin, Alletu, and el Zeray. Near the saddle or crest I have before alluded to, they are very shallow and straight, but in their progress downwards they are joined by several transverse valleys, and their course is very tortuous; again, however, becoming more direct as they approach the plains. In their centre a stream of greater or less magnitude, according to the season, winds its way. The power these mountain torrents must acquire after heavy rains is manifested by the rounded form as well as romantic confusion of the huge boulders which every where line their bed, evincing that many of these fragments, thirty or forty feet in diameter, must have been twirled about like pebbles in a brook. All these valleys are in other respects very similar in their general features; they are very thickly wooded with the trees common to the plains below. One, Wadi Aïuf four miles to the E.S.E. of Tamarida, is worthy however of sepa-

* Our excellent contemporary complains of our want of courtesy in not acknowledging the source from whence we derived this article; we assure him the omission was unintentional, as we always feel great pleasure in stating to whom we are indebted for valuable information.—Ed. N.M.

rate notice. It has the most fertile soil, and affords the finest pasture-
age for cattle, in the island; in its centre there is a copious stream of
water bordered by a broad and beautiful turf or sward, in which, at
the period of my visit, many sleek cows were feeding.

The lower ranges of this group of mountains are composed of
limestone and felspar: the latter passing, without any line of distinc-
tion, as it advances upwards, into a reddish-coloured granite; below,
the texture of the rock is exceedingly coarse. Quartz crystallizations
of an uncommon size, occur, sometimes nearly as large as a hazel nut.
The peaks or spires are of the same colour, but the granite is of a
finer and closer texture. From below they appear sharp-pointed as a
needle, but at this view they assume the form of truncated cones, and
are composed of large blocks, arranged perpendicularly, and resting
against each other. These are again intersected by vertical fractures,
and are crossed at various heights by horizontal ledges. The same
arrangement may be observed whenever the naked rock appears at the
base of the spires, where the largest fractures take the direction of the
valleys and are crossed by others extending in a direction perpendicular
to them. In the valleys mica slate is found in large blocks, and also
associated with the common grey granite. The common mountain
limestone, as well as a bluish crystalline primitive limestone, is also
found, together with fragments of gneiss and serpentine; but I did
not observe these formations as of the limestone capping the sum-
mits or on the shoulders of the granite spires, nor indeed in any other
situation than as I have described them. In one of the hollows on
the east side of the island (a kind of natural amphitheatre, about three
miles in circumference), in a naked precipice about 3000 feet in per-
pendicular height, the line of junction between the limestone and
granite formation is beautifully exposed to view. In some places the
upheaving force has been insufficient to protrude the peaks through
the tabular mass above, in others they have done so and carried a very
considerable portion, as I have already noticed, with them.

Beautiful and fertile valleys occur in every part of the range; they
possess the richest soil, and the quantity of ground which is elsewhere
susceptible of cultivation is very great. The table-land connecting
the peaks, and also the sides of the mountains, might, as in India, be
very soon cleared of their wood by fire during the S.W. monsoon,
and the ashes would add to the capabilities of a soil already rich and
of a great depth. What a change might not the industry of a few
seasons make in the country! The fruits of intertropical climates,
and the vegetables of more temperate regions, would, I have little
doubt, be found to thrive equally well. Grain might be cultivated in
Wadi Aiuf, and amidst the well-irrigated grounds at the skirts of
the mountains, as well as on their summits and sides. For the lat-
ter it may be as well to observe, that in some parts of India, but more

generally in Java, there is grown a description of rice called mountain-rice, which, unlike the common grain, requiring to be two-thirds of its growth under water, is planted on the sides of hills in situations where it can receive no other supply than that which it gathers from the rain. Or it might be planted at the commencement, and reaped at the termination of the N.E. or rainy monsoon.

Yet with all these advantages, excepting in times of drought, when they form a refuge as pasturage-grounds for the greater portion of the stock on the island; is the country wholly neglected by the natives. The long grass, which is equal in luxuriance of growth to that of an English meadow, is, owing to the ignorance of the natives as to the process of making hay, trodden under foot and spoiled. The shores of both Africa and Arabia are almost wholly destitute in these parallels of vegetation or trees; and at a first view it appears strange that an island but a short distance removed from them, and in fact on a level with their more parched and arid plains, should possess such an exuberance of vegetation; but the causes on examination are evident.

Both monsoons, as they approach it, become considerably cooled by their passage across a great expanse of water: in the north-east monsoon the sky is usually overcast, and, while in the countries I have mentioned some months were to elapse before the termination of the dry weather, Socotra enjoyed frequent and copious rains due to her granite mountains, the lofty peaks of which obstruct the clouds, causing them to deposit their aqueous particles, to feed the mountain stream, or precipitate themselves in plentiful showers over the surrounding country. During the south-west monsoon, in place of the dark, cloudy weather and rain which marks this season in India, we had clear and cloudless skies, and the stars shine forth with uncommon brilliancy; at a period in the south-west monsoon, when the wind was blowing nearly a hurricane, and when the gusts swept down from the mountains with a force almost irresistible, throwing up the water in sheets, and keeping our masts to the height of the tops continually wet with the spray, we had, with the exception of a dense white canopy of clouds, formed like the "table cloth" over the table mountain at the Cape, the same clear cloudless weather. With respect to their natural productions, a large collection of flowers and plants was made during my stay; but as I know little of them at present beyond their mere local names, I shall, as a means of further illustrating the nature of the soil and climate, merely enumerate the most useful and common.

The first rank is due to the orange-tree, called, in the Socotran language, Tenashur; they are found in every part of the granite mountains, but rarely at a less elevation than 2000 feet above the level of the sea. The Bedouins assert, that they continue to bear fruit throughout the year; the fruit clusters on them very thickly, but

although equally large and fine looking with the cultivated orange, it never appears to attain a perfect state, being both acid and bitter. The tamarind-trees are of a noble size, and, as their branches spread a good deal, the space underneath affords good shelter for the Bedouin and his flocks: they are very numerous at the lower portion, but are seldom found at the summits of the mountains.

The tuk-tree, a species of wild fig, is found here; its branches possess that same remarkable quality which attracted so much attention in the *Ficus Indica*: they grow pendant until they obtain fresh root, and thus extend their foliage over an enormous extent of ground. The *Ukshara*, producing a fruit in form and in its clustering appearance resembling the wild grape, but too acid for useful purposes, and the *Zeeruf*, merit, also, attention; the latter bears a small red berry, in taste and appearance resembling the cranberry. But the tree which appears to flourish with the utmost luxuriance of growth is the dragon's-blood tree, (*Dracæna Draco*,) which appears to increase in magnitude the higher we ascend. Those which are met with near the summit of the granite spires are more than double the size of those at the skirts of the mountain; when young they have usually but one stem, and no branches, the leaves being disposed in the form of a star round the upper part; but as they get older they may be seen with three, four, and even five stems. These branches consist of a number of elongated tubes united together, but much contracted in size at their point of junction, which is so irregular that they usually appear awry. From the extremity of each branch a cluster of leaves rises perpendicularly, which are disposed in a circular form radiating from the centre; they are sword-like, and of a corceaceous nature, the outer being from ten to fourteen inches in length, and measuring about two inches and a half at the base, where their breadth is somewhat extended. These are larger than the inner circles, and have also less curvature. The branches are thickly interwoven in the most fantastic and tortuous shapes, but the foliage, assuming a more regular and better defined outline, rises in a semi-circular shape over the summit. Their appearance at a distance is, therefore, that of an inverted cone supported by a thin cylinder. The bark of the tree is of a lead colour; the wood soft and spongy, having their longitudinal fibres extending along it: the roots spread very much, partially intersecting each other near the surface. Few of them extend to any depth, and, like those of the wild fig-tree, they may frequently be observed seeking sufficient nourishment from the soil lodged in the cavities of the rocks. The Bedouins consider the tree to be of different sexes; the male, they say, produces no gum, which exudes so spontaneously from the female tree, that it does not appear necessary, on any occasion, to make incisions. There are two kinds of gum, but that called *Moselle*, of a dark crimson colour, is esteemed the best. Soon after the setting in of the south-west monsoon is consi-

dered to be the period most favourable for collecting it. Trees growing in the most elevated position produce the greatest quantity, which does not agree with the received opinion of naturalists, viz. that a greater quantity of gum exudes in a hot than a cold temperature.

The only esculent vegetables which are found on this range are a species of wild yam, called toifut, which serves the natives with respect to their other food the same as bread does to us. The supply lasts through the year, and both the Arab and Bedouin are equally fond of them, and the former bring them from the hill and exchange them with the latter for iowarae, or dates. They are cooked by being placed on sticks over boiling water. We tried this and several other methods, but found them in all cases much less farinaceous than the yam. In addition to these the natives use the roots of several kinds of fern and other edibles of the same description. We have subhare bhaire, or wild rhubarb, the stalk of which is very palatable; several kinds of sorrel, and a description of water-cress found on the sea-shore, which boil well as vegetables.

I have noticed these several productions, because they may prove of service to some vessel hereafter touching here. Whalers sometimes do so, and their crews are not unfrequently suffering from scurvy, for which lime-juice is strongly recommended. The oranges found on these hills form an admirable substitute; but a few days before my arrival on this occasion, one of these vessels, not, in all probability, knowing of the existence of these, had recourse to a method of cure noticed by Dampier, and some of the old Buccaneers. The patient, after being stripped, was buried in the bed of a fresh-water stream near the sea shore, his head alone being left above the surface. In this position he was kept for two hours, and is said to have greatly benefited by the operation.

The whole of the middle and the lower portions of these mountains are covered with trees and bushes. As we advance upwards these become severally more stunted, the grassy spots occur more frequently, which are wholly clear of them; at the height of 2,000 feet a fine clover first makes its appearance, intermingled with which the rosemary, lavender, liburnums, and several varieties of balsams, with many other odoriferous herbs and flowers. These continue to the utmost altitude of the granite spires; a considerable quantity of verdure is also nourished in those spots, which are sheltered by the trees from the heat of the sun's rays; but, as we ascend more rapidly, not a crevice of the rock but affords some tree or flowers. The fissures in the granite spires, which from below have the appearance of narrow streaks and lines, are now perceived to be ledges, containing a quantity of soil, and nourishing dragon's blood trees, and large bushes.

After I had passed some days on the delightful spot where I had first taken up my residence, I moved to an adjoining mountain, Jebel

Raggud, which forms one of the chain nearly encircling Tamarida. On my first ascent from the plain, over the roots of the mountain, the road continued over a gravelly soil, on which was deposited a thin layer of limestone broken into small fragments: bushes and trees continue the whole distance. The surface of the upper part of the mountain forms an irregular plain about three miles at its widest and two at its more contracted limits. The whole of the plateau is crossed by narrow ridges of limestone rock, which rise up into sharp and rugged peaks, presenting a singular difference to the usual tabular appearance of that formation; in other parts the disposition of the rock differs but little from what is elsewhere observed; they ascend in a gentle slope in the direction of the greatest length of the masses, terminating in mural precipices from 400 to 700 feet in depth, as on the granite mountains narrow horizontal ledges extend along the face of these, nourishing numerous trees and bushes, their verdant hue contrasting in a singular manner with the grey and weather-beaten appearance of the rock, and giving it, what in real reality it does not possess, an appearance of stratification. The rock, in common with all other mountain limestone, is very cavernous; and I observed in some of these hollows, very splendid stalactitical formation, formed by the constant dripping of water from above. The surface of the rock within exhibits a succession of rounded masses perforated by numerous cavities: these caverns are used both as places of residence for the living and the dead: one of them, the most magnificent and extensive I had found on the Island, was 250 yards in length, in breadth 175, and height 87 yards. Within the interior, masses hung, as it were, suspended in the act of falling from the roof at the entrance: at the very centre the arch drooped, and rested on a rude sort of a pillar: the dimensions and form of this vast cavern were in accordance with the solitary magnificence of the whole scene: the entrance was in a measure blocked up by a huge overhanging rock, which excluded the rain, while it preserved the interior from the heat of the sun's rays: circular stone walls, with low narrow doors, divided the interior into different apartments, each of which appeared to be occupied by the same family; the number in one was eight, and allowing an average of four in others, it gives forty inhabitants in this lonely retreat amidst the mountain wilds. A place in each, as with other oriental dwellings, is set apart for the females, and called the haram. It has been observed, with some show of justice, that orientals are less sensible of the charms of natural scenery than Europeans; but some of these dwellings are most picturesquely situated in wild and solitary glens: their entrance is not unfrequently wholly concealed from view by the hardy and umbrageous foliage of the wild fig, the roots of which possess the instinctive quality of traversing the rock and following its irregularities until they find a sufficiency of soil to nourish them. The darker hue of the herbage around, produced

by the odure of their cattle, was frequently the only clue to the existence of these habitations. But the most singular purpose to which these caverns are applied is as places of interment: a portion near the inner extremity was selected, and divided from the rest by a wall; the body was then placed therein, and partially covered with earth, but no coffin was used. Those who were added were deposited in alternate layers, the head of one occupying the position of the feet of the other. The custom of burying the dead in caves is of great antiquity; we find mention made of it at the commencement of the records of Holy Writ. The natives tell me they have long since abandoned the custom, and their dead are now buried in the same manner as with other Mahommedans.

They have, however, on such events, retained a custom now peculiar to themselves; when a near relative is about to die they send out and collect as many bullocks as their means will admit of their purchasing, which, when the event takes place, are slaughtered and sent round the neighbourhood. I was acquainted with an old man in Tamarida, who had made these preparations under an impression that his wife would not survive many days, and he told me in confidence that he had already fixed his eyes on a younger and more comely maiden to supply her place; but an unexpected change took place which escaped his mind in all his calculations—he died himself, just as his disconsolate widow recovered, to pay, by the distribution of his cattle, due honour to his memory.

Jebel Raggud is destitute of other water than that left by the rains in the hollows and cavities of the rocks. The natives have preserved a curious tradition respecting the disappearance of one of the swamps which are formed on the loose soil: some cows, with their tenders, had gone to a spot they had for years been in the habit of visiting; the ground suddenly sank beneath and overwhelmed them. The hollow is at present about 200 feet in depth; it was, I have little doubt, one of those numerous caverns which everywhere abound in the formation, partially covered by a thin layer of earth.

I kept a register of the climate during the time I remained in these mountains. The transitions from heat to cold are sudden in the mornings and the evenings, but during the day the thermometric range is very limited: in the morning the air continues very cool, until the sun rises over the summit of the eastern mountains; at noon, provided there was no wind, which was rarely the case, the heat of the sun was very considerable, but the instant it sinks behind the western mountains the air again becomes cool. In a house the transitions would not, of course, be so observable; and I may remark, moreover, that the station which I occupied received but for a short period the sun's rays. I found here, and on several other visits I made to the mountains, that a superior current of air frequently sweeps down from the higher points in a direction quite contrary to the wind pre-

vailing below, which would sink the thermometer several degrees. It must be observed that the climate, besides being subjected to these sudden variations, was not wholly free from the usual disagreeable accompaniment of highland regions; the summits of the lofty peaks obstruct the clouds in their progress, so that from sunshine and clear weather a few minutes brings dense fogs and drizzling rain; yet is this more than compensated for by the clear, pure, and unclouded atmosphere we enjoy at others. If possible, the nights are more pure than the days; and the moon's rays reflected from the smooth and grey surface of the granite mountains produce an effect I have rarely seen equalled.

The degree of humidity which was also exhibited after sunset and before sunrise, (rarely a few degrees above the point of saturation,) was also very great; our tent in the morning was usually found wet through, and the grass and bushes were everywhere dripping with moisture; it was impossible to move for some hours without getting completely drenched.

I may here, in the hope they will prove of service to future travellers, give insertion to a few remarks which suggest themselves to me.

There are several methods of ascertaining the mean temperature of mountain regions, of which the most common are—

1. By supposing the heat to decrease at certain rates as we advance above the level of the sea.
2. By the temperature of copious springs.
3. By long continued observations of the thermometer.

Mine was observed at 9 h. 13 m. A.M. which, by vol. x. of the Edinburgh Philosophical Transactions, is the hour in the morning when the mean annual temperature takes place; the mean daily minimum is a little below 5 h. A.M., and maximum 2 h. 40 m.

I had Leslie's hygrometer, which Daniel recommends to be used at 2h. 40 m. This instrument was invented by Professor Leslie, and is by some called the Thermometric Hygrometer; its use is to mark the difference of temperature produced by evaporation, and is fully described in the Encyclopædia Britannica.

I am surprised, considering their extensive utility, that we have no well-constructed portable mountain barometer. I had one on this occasion constructed by Gilbert; it differed from others in the mode of fixing the zero of the scale; a screw attached to the lower part of the bag raises the surface of the mercury to do this. To prevent, however, the frequent accidents which have occurred by its weight breaking the tube, the instrument was filled at the station where it was required to be used. A glass cistern was affixed to the tube by four steel screws: but the plan does not answer—the screws rusted, the glass cylinders snapped, or the mercury could not be prevented from escaping. I managed, however, to use it for ascertaining the

daily variations in the height of the column. These were once supposed to be confined to the vicinity of the Equator, but they are now known to extend to every part of the globe, and, according to Humboldt, not only at the level of the sea, but 12,800 feet above it. I wished, as more observations were much required, to compare their range with that of those carefully noted on board the vessel.

As was my usual custom on such journeys, I mixed much with the natives, living in their huts with them. Desirous of remaining close to their herds on those occasions, when they bring them from the plains below to browse here, they erect huts of loose stones, neither side of which exceeds seven or eight feet; more filthy habitations can scarcely be conceived, and they swarm with vermin. Those which are not thatched are usually covered with earth, and goats and sheep may frequently be observed feeding there. The mountaineers inhabiting this range are usually of a hardy race, yet, from being so lightly clad, and from exposing themselves at all hours to the wind and rain, intermitting fevers are by no means uncommon among them. Most of the cases I saw had assumed the tertian type, and this was the form it took whenever those who accompanied me were attacked.

The result of my enquiries and observations on this range induced me to strongly recommend that it should be selected as a station for the troops. How bitterly it is to be regretted that my suggestion was not adopted! the whole of the first detachment, including their officers, with the exception of one, died two months after they landed; but the second, with better judgment, were at once marched to the summit of the mountains, where, until they were recalled, they enjoyed a climate equal to that of England, and not a fatal case occurred amidst them.

Socotra enjoys so many advantages of position, that, now steam-navigation between the east and west is occupying so much discussion, attention has been constantly drawn to it. It lies directly in the route of ships coming from the Red Sea, the entrance to which it may be said to command—and also in the track of vessels proceeding from Europe to India—advantages which will, in all human probability, at no very distant period, compel us again to occupy it.

ON THE QUALIFICATION OF THE OFFICERS OF MERCHANT SHIPPING.

MR. EDITOR,—When I forwarded you the paper on this subject which appeared in the number of the *Nautical* for the month of March last, I did so with the view of directing public attention to a grievance that few will deny exists to an extent perfectly unparalleled in any other nation on the face of the globe, and of suggesting a course to pursue that was, in my opinion, the only one in the mean-

time likely to tend to its removal. I need scarcely observe, therefore, that in doing so I anticipated that my suggestions would meet with the support which a measure of so much importance so imperatively called for. Greatly, however, to my surprise, a paragraph from "Britannicus" appears in your June number, cutting at the whole of my propositions as aggregately erroneous and objectionable, because in one particular they tended to oppose the views entertained by him upon a matter which I directly announced my intention not to enter upon, and that to the most casual observer must be seen not in any serious degree to affect the same, even supposing them to be well founded. I refer to the alleged safety which "Britannicus" pretends to show would exist as well to property as lives, but particularly the former, if vessels were constructed with solid bottoms. Because I happened to state that he was in error in assuming that three out of four of the vessels were lost through insufficiency, he thinks proper to attack the separate question which this can merely be said to touch at, and by carping at a specialty, important only to such question itself, and innocent in its effect on all others, he would shake its expediency if possible, in a general point of view, and as a measure that, freed of this particular, he must admit is fraught with so much that is to be desired by every individual who possesses the slightest sprinkling of humanity. Now, although I am averse to everything in the shape of controversy, I feel myself constrained to show that if the views which I then advanced, and the grounds on which I rested my case, were considered to be such as that no particular objection could be made to them, that they must still be considered so, and be held to remain perfectly unaffected by the paragraph in question; more particularly when in doing so I have the chance of still keeping public attention alive upon the subject.

Without entering into minute details, the whole objections of "Britannicus" may be said to be based upon an alleged necessity for an improvement in the construction of ships as already noticed, instead of the qualification or skill of their officers. "If vessels," says 'Britannicus,' "were built with solid bottoms, there would not be one loss for four there are at the present, for on getting on shore they would, instead of going to pieces as they do now, keep together and be got off with comparatively little damage." That instances of this have occurred within his own knowledge in cases which he quotes upon the point; and that numerous cases can be got of a similar nature by making certain references: at least, what he has advanced amounts to this or is to this effect; and certainly, without anything being said on the opposite side, sounds very well, and to the superficial reader may appear very plausible. But it is hoped, however, that it is only to such that in the present question (whatever weight it might be shown to have in that to which it bears more proper reference) it will be received as at all worthy of consideration. Even admitting that solid

bottoms are more safe, and which I have no inclination to dispute, there exist two answers to it that I apprehend will not be easily overcome.

The first is, that however expedient it may be to have measures resorted to for the improvement of the construction and build of our ships, those measures can only be available in a partial and prospective point of view, and for regulating the prosperity of our commerce and the safety of the lives of those alone who may be fortunate enough to come directly under their influence. They cannot better the present state of matters, which, whatever may be done towards furthering the views of "Britannicus," must still remain replete with all its grievances. Improve as they may for the future, whether in virtue of legislative enactments or not, the vessels of the present day must remain unaffected by such improvements; the masters and officers of them must also remain, with a very few exceptions; and as losses necessarily have all along occurred, and which in the ordinary course of events must still be anticipated, the evils of course must therefore remain, if not completely, still in so far as these are concerned, and in a great measure, unabated; at least they must remain until one by one they drop off and become extinct. If "Britannicus" could show what was to be done with all the shipping that exist in their present alleged imperfect state, or rather could devise a plan for getting them all disposed of and exchanged without loss and inconvenience, I frankly admit that he might then urge his positions (supposing them otherwise tenable) with some degree of feasibility. But unless this can be done, it is all in vain for him to say that in any other way, in the present state of matters, than by a system of qualification of the officers, the evils in the commercial navy so long and loudly complained of, can have any fair chance of an effectual, and at the same time, a general and immediate removal. It is certainly at least, never by building vessels for the future of a particular construction, that will serve the many thousand vessels that are at present afloat of a different construction, and the many thousand valuable lives that from time to time must necessarily be entrusted in them.

The second and separate answer again, is that, although the solid bottoms, as I said before, and am willing to admit, may be a great improvement, that still I do not see that they are entitled to be looked upon as warranting that perfect degree of safety that "Britannicus" seems to suppose at any rate. Keeping in view that he admits that I am correct in the conclusion I came to in my former paper, that six out of seven of the losses that occur are upon the rocks, or at least are not in the open sea, or by foundering, I fear he would have some difficulty in showing that unless in some particular cases they would serve as a guarantee against their going to pieces, or getting into the many situations from which, although little injured, it is so impossible to extricate them. I would say, rather use means for keeping them

off the rocks altogether, if such can in any way be devised. By that alone, unless it can be shown that the solid bottoms are sufficient to set the rocks and elements at defiance, safety has in six cases out of seven any likelihood of being attained with any degree of surety; and I apprehend that, as already proved by me, the most likely way by which the same is to be attained is by the legislative enactment of measures to enforce the proper qualification of the officers. To say, in short, that vessels could be built so strong that rocks could not have effect upon them, and that by that means safety could be ensured, is a position too desperate to ever be seriously responded to. Even the very chance that the hull of the strongest ship may part in places where the proposed improvement in construction can have little influence; and that also in many instances the crews may perish and the cargoes be destroyed by the sea making a breach over her without her going to pieces at all, of itself speaks against it.

As to the insinuation of "Britannicus," that I have gone the length of maintaining that all the wrecks that have taken place arose from want of skill in the persons in charge, it is sufficient to observe, that there is nothing that I have urged either admits, or ever was intended to admit, of any such construction. I stated that the greater portion of losses could not well be accounted for in any other way; and certainly, in the absence of any direct or specially assigned cause, or at least, (which is much the same,) a true and satisfactory cause; I think to this I may with safety adhere.

I must, however, before concluding, notwithstanding our other differences, take the benefit of, and go with "Britannicus," in a very judicious remark made by him respecting the constitution of the Board of Examiners. He states, that it would not be proper to have it wholly composed of officers of the royal navy; and in this one consideration I am inclined to concur with him. Instead, therefore, of having two lieutenants to sit as examiners, it might be as well that there should be only one, and that a respectable and well educated master of a merchantman should be substituted in place of the other one. By this means the board would have an opportunity, by information from him, and facts which he would be enabled to communicate from personal experience, of investigating many points that would not otherwise occur to them, and of ultimately putting an end both to errors and ignorance in the every day work of the profession, that although seriously detrimental to the well-being of the parties interested in shipping, and in many cases the cause of the loss of life, is totally unknown in the movements of the experienced and well disciplined officers and seamen of the royal navy.

In a future number I will notice the remarks of "Britannicus" and some others, on the effect of insurance. Meanwhile,

I remain, Sir, yours very respectfully,

July, 1830.

PHILO-NAUTICUS.

VOYAGE OF H.M.S. IMOGENE, CAPT. H. W. BRUCE.—*Sandwich, Tahiti, and Pitcairn Islands.*

(Concluded from page 659.)

The trade wind failing us on Sunday morning the twenty-second, we tacked to a southerly breeze with heavy showers, which cleared off with daylight: southerly and S.S.E. winds continued light and variable, but with dry weather until 4 P.M. of 25th, when calm ensued with heavy rain, this lasted till about 8 P.M., when a fresh breeze sprung up at S. by E. which proved to be the trade. For four days from the 21st, we had an easterly current setting thirty to thirty-five miles a day, and after taking up the S.E. trade, though it hung much to the southward from the 25th, there was a westerly current setting from sixteen to forty miles in the twenty-four hours. We lost no opportunity of endeavouring to make easting, and to get to windward of the meridian of Tahiti, but could not accomplish it, and crossed the equator a little before 2 P.M., Saturday, October 28th in longitude $154^{\circ} 40'$ W., wind E. by S., having been on a bow-line ever since leaving Owhyhee. The indications of the glasses as on our voyage northward were useless, their range is very little, and they regularly fall in company, a trifle between 10 A.M. and sunset, and regain their pitch by 8 P.M.

On Tuesday October 31st, we fell in with the English whaler Brixton, of London, twenty-four days from the island of Mowee (Sandwich group,) and prescribed for a sick man on board her. The wind hanging to the southward of east, but falling light, we tacked this afternoon, and in the morning of November 1st, it springing up again from east, we put about, going six to eight knots S.S.E. We still found a westerly current about fourteen miles per day. To the 4th, we had fresh trade winds east to E.S.E., and on that day sharp squalls with rain morning and night, as is usual on approaching the islands, latitude $14^{\circ} 28'$ south, longitude $154^{\circ} 24'$ W. Sunday, November 5th, moderate and fine, 4 P.M. saw the island of Belinghausen, (which is not laid down in any chart that we had,) bearing S.E. It is a long, low, treacherous looking island of coral formation, three or four miles from N.N.W. to S.S.E., and richly covered with trees and foliage, there is a lagoon in its centre, and for half a mile at either extremity, the rollers break heavily; we passed Belinghausen at about five miles distance, were led by the wind half way between Scilly and Mopelia, islands of Norie, and as we drew to the southward, the wind gradually came to east, E.N.E. and N.E. always bringing our port directly in the wind's-eye, though on the 6th, we had fresh gales and heavy rain, wind E.S.E., and the wind continuing on the 7th, with every appearance of its coming to the S.E., we tacked, when it immediately settled at E.N.E. After

five or six hours, we tacked to the southward; the ship only lying north on the starboard tack, a heavy head sea, but current little, if any, to the westward.

The Position of Belinghausen by Nories' book, is latitude $15^{\circ} 48'$ S., longitude $154^{\circ} 30' W.$

By Imogene, it is latitude $15^{\circ} 47' S.$, longitude $154^{\circ} 34' 25'' W.$

The latitude is by the moon, centre of the island bearing east. The longitude, the mean of three chronometers, at 4h 31m P.M., when the island bore S. by E. : all the observations and calculations taken by Mr. Richard Thompson, master.

The difficulty of accomplishing the voyage from the Sandwich to the Society group, is obvious, from the above and subsequent remarks, and any other ship destined to make it, should keep to the northward, until she gets a slant of wind. We had no variables near the line coming south, and could never make easting on either tack, though we endeavoured by every means in our power to do so. The captains of Whalers all speak with great doubt of fetching Tahiti from the Sandwich isles, and the Brixton, which we spoke on October 31st, was ten or twelve miles dead to leeward.

November 8th, wind E.N.E. and N.E., fresh with head sea; 9th, squally, with continued rain; 5 P.M., thick and rainy, saw the island of Rimitara being N.E. $10'$. This island is erroneously laid down in Arrowsmith's chart, its correct position being latitude $22^{\circ} 40' S.$, longitude $152^{\circ} 59' 49'' W.$ Passing Rimitara at nine or ten miles distance, it appears low at the extremes, gradually rising in the centre to a height of 300 feet at least, and is two or three miles from point to point, with a coral foundation, but a dark appearance over it. The night was squally, with most terrific rain until towards day-break of the 10th, when the island bearing W. $\frac{1}{2}$ S., we stood back to ascertain its position, and getting a set of good sights for the chronometers at 7h 8m put the ships head, E. by S., until noon.

The wind which had for the last ten days always shifted gradually, so as to keep our port in the wind's-eye, now veered to north-west, and finally S.S.W., at day-break 11th, when we were surprised to see the island of Rurutu, bearing E.S.E. $12'$; and to find that it also is incorrectly placed, its true position being latitude $22^{\circ} 29' S.$ longitude $151^{\circ} 20' 25'' W.$ Rurutu is about 1300 feet high, and volcanic in appearance, having two small peaks, and higher in the centre, with uneven outline, and is three or four miles from extremes east and west, with a bold appearance. The wind now favoured us, and for the first time since leaving the island of Owhyhee the ship lay her course, and continued to do so, wind from S.E. to E. by S., steady trade, and smooth water, with occasional showers.

Monday, November 13th at daylight, saw Otaheite, in the exact position we looked for it, bearing W.N.W. seven or eight leagues, with a mass of clouds resting on its summit, which is evidently very

high, (7000 feet, by Beechey). The land has a bold appearance, but the N.E. and S.E. extremes, both have low points, with cocoa-nut trees. We passed the N.E. point at four miles distance, and rounded the island from that to six miles, observing many cottages and hamlets close to the water; coral reefs and rocks, nearly without intermission; and a general rich, picturesque, and beautiful appearance, which surpasses all accurate description. At 2h 30m P.M. being off Point Venus, the pilot, who happened accidentally to be there, came off in a whale-boat; and three miles off the harbour of Papiété, we ran out of the strong S.E. trade and met a light S.W. breeze—the periodical wind. Beating against this, six tacks brought us to the harbour's mouth, up which the pilot took us with cleverness and skill, anchoring the ship in eleven fathoms, sand, half a mile distant from the shore. This is a safe and excellent harbour, though the passage at its entrance, between two coral reefs, present a rugged appearance, and heavy rolling surf, with only 370 feet space of deep water: two rocks in that space, and no anchorage but inside of the reefs, make it by no means to be trifled with. We found here an English whaler, the *Lady Amherst*, of London, a year out; and two Americans.

Mr. Pritchard came on board, received his commission and the despatches; he was then honoured with the usual salute, being installed as "Consul," by our captain. The Queen, "Poméré," being absent in another part of the island, a messenger was sent to inform her majesty, of the arrival of the *Imogene*.

Having to purchase sugar here for the use of the squadron, we found on inquiry, that all on the island, as well as on the adjoining one of Eimeo, was already disposed of, except about a ton and a quarter which I purchased; the cultivation of this useful article is pursued with great success here, but if it be wanted for H. M. Ships, the Consul should be authorized to procure, and have it in readiness, otherwise it is all bespoke by speculating merchants, who are on the look out, to make their market.

Tahiti affords abundant supplies of beef, pork, poultry, fruit, water, &c. but is deficient in common vegetables, yielding neither potatoes, (except the sweet,) onions nor greens. There is no sort of liquor to be purchased, as it is forbidden by the government. Washing is a dollar the dozen and tolerably done, but a person must send his own soap; beef is 4*d.* per lb. and fowls four for a dollar. Money is here preferred to barter; the latter having almost got into disuse. Young pigs are a dollar each, and (beef excepted) everything is dear.

The population of Tahiti is 9000, and that of Papiété 1500; the foreign population being 25 or 30. There are seven missionary stations, having churches and schools under English missionaries of the Independent profession of Faith. An orderly, and very interesting native people, who taking the Gospel for their guide,

with the instructions afforded by these valuable and estimable missionaries, shew forth throughout this group the prevalence of an exalted tone of christian feeling. At the native church of Papiété we saw divine service attended by 1200 to 1500 people; 1400 is the average. Among them were Queen Poméré and her husband who are both sincere christians, and setting an example becoming their exalted stations. The queen is very pleasing in her appearance; she is twenty-six years of age, and has had three children all of whom died young. Her husband is king-consort, but without any authority, a youth of eighteen or twenty, and her cousin. The Queen on the above occasion held a child to be baptized, a female infant, adopted by her, and failing issue on her part, heiress presumptive to the crown. Tahiti, and Eimeo form the dominions of Poméré, properly speaking; and are termed the Georgian islands: there are three leeward islands, Huahine, Uleiataea, and Bora Bora, the chiefs of which, though not subject to, look up to Poméré as a head, and give her a sort of allegiance. Each of these islands has a resident missionary, and those out-lying; namely, Rurutu, Toubonai, and, High-island, have resident native teachers, besides being visited by a missionary occasionally. Mr. Rogerson had left the Marquesas with his family, and is now resident at Papiété; two are to be sent to England to take up the duties at St. Christina with Mr. Stolworthy.

The bad season commences here with December and lasts till May; we experienced a good deal of rain, but very little wind is felt in the harbour. The rain gathers over the high hills, and in the afternoon comes off with thunder and heavy showers to the ships, continuing for some hours. Capt. Bruce visited Point Venus, and the missionary settlement there, with Captain Drinkwater Bethune of H. M. ship Conway, which arrived from Sidney on the 16th. It is a very thriving state; but commerce and science at these islands are not so advanced as at the Sandwich isles. Matavai Bay is a wild exposed anchorage full of coral patches, and of lost anchors. A Russian surveying ship of 1100 tons anchoring there about five years ago, in the month of December was caught in a N.W. gale, and only saved by having the best of ground-tackling; she had two anchors a head, and the sea broke completely over her. A ship going into Matavai Bay, must beware of the Dolphin Rock, which lies 100 yards clear of the reef, with a passage between them. There is a good bridle road for ten miles in this direction, and for twenty in the other. The horses here are very wretched, the roads very beautiful. The men here, are a fine looking race, and the natives of the Sandwich and these islands, are very similar. Population is on the increase; the number of births being to deaths as five to three. At Eimeo the population was in 1832, 1500; it is now 1700; it has its missionary, and native teachers

besides, and a seminary for young ladies! under the care of Mrs. Simpson, wife of the missionary. The most considerable quantity of sugar is raised here. It is expected to reach in a very few years to fifty tons, the price of which is, 100 dollars for 2000 lbs. Eimeo is about forty-five miles in circumference; Tahiti about 120, the latter has twenty-four harbours around its coasts, the former three. The rise and fall of tide at Papiété is from fifteen to eighteen inches, high water being at noon (or from eleven to one,) and midnight; low water at six, morning and evening. Papiété is in lat. $17^{\circ} 32'$ S. long. $149^{\circ} 37' 45''$ W. $24^{\circ} 1' 30''$ east of Kowrawa, Owhyhee.

Her Majesty having returned to Papiété on the 15th November, received Captain Bruce the next day, but the chiefs not being assembled, an earlier day, for the delivery of the letter with which he was charged, could not be fixed than Monday the 20th. On that day, accordingly, the queen and island chiefs and authorities having met in the church, the Captain repaired thither in due form, accompanied by Captain D. Bethune, and presented Lord Palmerston's letter, to which Her Majesty made reply in terms of friendship and satisfaction, on the moment, and more fully, by letter afterwards, when she charged him with an official despatch for the king of England: Several complaints of English residents, were then submitted to the captain, by the queen's desire, and many by British subjects against the native government, to all of which Captains Bethune and Bruce, and H.M. Consul, acting in concert, gave their best attention. The queen honoured Captain Bruce with her company at dinner on board, as she also did Capt. Bethune on board the Conway. She is much attached to the English nation, as are the natives of these islands,* who seem to deserve the active protection of Great Britain.

The object of our visit being thus at rest, at daylight on Thursday, November 23rd, weighed and towed out with the boats of the Conway and two American whalers, and at 6h. 30m. got into calm outside the reef. We had on board five additional supernumeraries, distressed British subjects received on board, at the request of the consul, for passage to Valparaiso. At 6 P.M. a strong easterly trade sprung up,

* The following extract of a letter from an officer in the navy, to a friend at the Sandwich Islands may throw some further light on the character of the islands to which he respectfully alludes.

I was greatly disappointed on our visit to Tahiti, to find such a miserable race of beings, as I had made up my mind to see, (from what I read and heard) a fine town, with the inhabitants perfectly moral, fashionably dressed, and in fact a town of eminence, with trade flourishing, and everything nearly in the English style. But what a falling off was there from my expectations, I had thought it outvied Oahu at one hundred per cent, but I assure you after a miserable landing, you are compensated in walking round a hot beach and very dirty, lined with low huts without furniture, by losing the skin off your nose and cheeks, and an eager desire to get on board.

The scenery is pretty enough in approaching Tahiti, and until you land you almost

with which we stretched northward, and had heavy lightning and very threatening weather all night. We were desirous of passing to the eastward of Tahiti, the arrival of two or three ships off that part of the island being reported, but at day-light, being close to the to the low island of Tethorea, and the winds strong against us and baffling, we edged away for the passage between Tahiti and Eimeo. Tethorea is very low and dangerous, covered with cocoa-nut trees and a heavy surf, and extended four or five miles from east to west, while bearing from us north three miles distant. At noon, we were nearly through the passage, and clear of Eimeo, and it is very unpleasant, if not dangerous, as you run out of the breeze to find yourself with a heavy sea from the southward in a calm, and the swell setting direct for the reefs where the rollers are terrific. The passage is about twenty miles across, and the scenery of both islands strikingly remarkable and beautiful. At 5 P.M., we got a breeze from the S.S.E. which at eight shifted to fine N.E. trade, and continued.

For six days we kept the trade steady in force, from N. by E. to E.N.E. with fine weather, and had a southerly current twenty miles a day, on the 26th, 27th, 28th, 29th, and 30th of November. On December 1st, we met with showers and unsettled weather, with variable baffling winds, and on the succeeding days to the 7th, had similar weather, showers at protracted intervals, and nightly, very heavy rain for four or five hours, lightning and sometimes very heavy thunder, winds in general light, and round the compass during the twenty-four hours. In the course of the 1st we passed close to the spot occupied on Arrowsmith's chart by the island of San Juan Baptista, which does not exist in that position, viz. latitude $25^{\circ} 50'$ S., longitude 138° W., though it lay according to Norie in latitude 24° S., longitude 139° W. The weather being cloudy and rainy, we could not see further than twelve miles from us. From the 7th, strong S.E. winds blew with squalls and showers, beating against which we made thirty-six miles, dead to windward in twenty-four hours.

At 2h. 30m. P.M., of Dec. 7th, we made Pitcairn's island in the

suppose it is fairy land, but sad indeed is the falling off on putting your feet on shore. So much for this eminent island.

The island where you have fixed your tent, is the place if I were disposed to abide in the Pacific that would engage my attention preferable to any other I have seen.

More than equal to my disappointment just described, was my delight at the manners and customs of the Islanders of Pitcairn. They speak the English language with almost grammatical precision, they are quite modest, and excessively civil in their deportment, the men are good husbands and kind fathers, and the women are most affectionately attached to their offspring and their husbands, in fact it is a happy little community in every sense of the word.

wind's eye, bearing E. by S. $\frac{1}{2}$ S. eight leagues, and carrying on through the night, passed to the eastward of the island, and hove to in Bounty Bay, at 7 A. M. of the 8th. Its appearance exactly corresponds with the sketch of Captain Beechey on his small chart. The water in the bay, and off it, is beautifully clear; and the sandy and rocky bottom visible at twenty fathoms depth. Most of the native men immediately came on board in their canoes, though blowing fresh, with a tumbling swell, being rejoiced at the sight of an English ship of war from home, as they term England. They are a very kindly, hospitable, and amiable race, and strikingly virtuous and correct, though among the natives it is to be regretted that two cases of deviation from the course of strict morality have not long since occurred; and it is much to be regretted, that among the three English settlers there have been cases perpetrated of deep, base, and disgraceful profligacy. George Nobbs, John Buffet, and John Evans, the people of the island are most desirous should be removed from it. Nobbs is the teacher and tailor, Buffet is a joiner, Evans, who seems to have preserved his integrity, and as far as we could learn, to be without reproach, is a sailor by profession; and with respect to the community, a mere vegetating animal. Mr. Hill, a fourth Englishman, who had established his residence here, we brought away at his own request. He had made himself very obnoxious to the natives, having assumed a power and control over them which he had neither authority to do, nor ability to execute effectually; and some being led away to side with him, the seeds of dissension among the people were thus sown. It is probable, however, that he produced more good than evil amongst them, as, with the exception of some arbitrary proceedings, his conduct was marked by the strictest moral integrity. His removal being accomplished, harmony will be restored in the community of the islanders, who, nevertheless, are most desirous to be relieved of the presence of the three above-named persons, instead of whom they would gladly receive a competent religious instructor. It would be a great boon to this most amiable and deserving people, were our government to send them a duly authorized person of character, intelligence, and ability, to preside over them and their interests. Their own youthful community could now furnish a person competent to instruct the children, under the direction of the clergyman, in the usual branches of general knowledge, reading, writing, arithmetic, geography, and history; and without these aids, the approaches of depravity and wickedness will scarcely be effectively repelled from a state of society which affords so many temptations. The houses of these islanders are much superior to those of the Sandwich or Society groups, both in building, accommodation, appearance, and cleanly comfort. The food of the people is simple, consisting principally of sweet potatoes, yams, plantains, and bananas,

either baked or made into cakes; and sometimes pig or goat, both of which abound; with fowls, as well as fish and vegetables. The island also yields bread-fruit and sugar-cane, and wild tobacco in great profusion; there are two cows and a bull, the increase of which the people do not seem to desire to any great degree, as they have not fences sufficient to keep them out of their yam and potatoe patches; there are also two donkeys for burthen. The soil of Pitcairn Island is a rich mould: the land of the whole island would maintain about 300 people;* water is now in abundance, as they have two large reservoirs, but they depend greatly upon the rain to fill them. There is a great deal of wood on the island, in clearing which for cultivation, human skeletons have been dug up, always having a pearl shell under the head,—a shell foreign to the island; a proof, with others, of the island having been inhabited and deserted before the arrival of our countrymen there. The whole island is

* Population of Pitcairn's, 9th December, 1837.

NAMES.	ADULTS.		CHILDREN.				Total.
	Male.	Female.	Male.	Female.	Eldest.	Youngest.	
* George Adams.....	1	1	3		10 yrs.	7 yrs.	5
Charles Christian	1						1
Charles Christian, jun. ... }	1	1					2
† Fletcher Christian	1	1	2	2	7 yrs.	1 yrs.	6
Sarah McCoy		1					1
Her son's family.....	1	1	3	3	10 yrs.	9 mths.	3
Thursday Christian.....	1		1	1	9 yrs.	6 yrs.	3
His mother and family .. }		1					1
Arthur Quintal	1	1	3	3	14 yrs.	1 mths.	8
Edward Quintal	1	1	5	2	15 yrs.	3 mths.	9
His mother		1					1
Arthur Quintal	1	1					2
Hannah Young		1	2	3	13 yrs.	8 yrs.	6
Her daughter & husband... }	1	1					2
John Quintal, sen.	1	1	1	4	8 yrs.	6 mths	7
John Quintal, jun.	1	1					2
John Quintal, third..... }	1						1
William Young	1	1	1	4	13 yrs.	6 yrs.	7
George Nobbs.....	1	1	3	2	7 yrs.	9 mths.	7
John Evans	1	1	3	2	9 yrs.	6 mths.	7
John Buffet, { mother-in-law { sister-in-law	1	3	5		12 yrs.	2 yrs.	9
Total.....	17	20	32	26			95

3 English settlers.

Births, Deaths, and Marriages, for 1837.

Births	6	Only one instance of twins on the island.
Marriages	2	
Death	1	Only one death in four years.

• George Adams is the only son of Adams.

† Fletcher Christian is the eldest surviving son of Christian, the leader.

‡ Thursday October Christian, eldest son of the Chief, died at Tahiti.

strikingly beautiful and picturesque, both on shore, and when seen from the sea, and is very healthy; the only diseases known being asthma, dysentery, and rheumatism. All the articles of food, both animal and vegetable, are very superior in quality. Two females of the original settlers yet survive, and are strong and healthy-looking; they are Isabella, or (mainmast,) Christian's wife, and Susan, wife of Young: both Tahitian women, who accompanied the mutineers on their first settling at Pitcairns.

The landing at Bounty Bay has not improved since Beechey's visit, and the islanders congratulate themselves on the security afforded them by it; they however pilot the boats in successfully through the surf, watching the smooth always, and are most active and expert assistants. To get off stock, a large boat should be anchored outside the surf, and everything brought to her in the canoes. A white flag will be hoisted at the village, on the approach of any English ship, when landing is practicable in Bounty Bay, and the ship can heave to, close inside of Adam's rock. We had so strong a westerly current during the two days we remained, as, with easterly winds, to find a difficulty in keeping our place. The other landing place as indicated on Beechey's Admiralty Chart, on the west end, is a very good one with east, S.E. or N.E. winds, but the walk over the hill is a trying one. The only vessels that had touched here since H.M. ship *Actæon*, were the *Colocolo*, a chilian; and the *Habomak*, an American whaler. The things most valued by the islanders for barter, (money being unknown) are—printed cottons, blue dungereee cloth; soap, thread, tape and buttons; carpenter's tools; slates and crockery; shoes; and letter paper, pens, pencils, and slates. Books of history and of general information would also be very useful, as they already possess a sufficiency of religious ones. They are very expert at making the tappa which they use both for cloathing, and for sheets. These primitive people do not now like the thoughts of leaving their island, unless to see England, (home as they call it,) which all of them would like to do; yet in time some of them will find it necessary to emigrate, when perhaps the younger families will go. The island of *Toubonai*, would be an advantageous place for the Pitcairn's population to be removed to; it has good landing and a harbour for small vessels; wood and water in abundance; a fertile soil, with only seventy-four inhabitants, two-thirds of whom are males; and, we were informed by Mr. Consul Charlton, it might be purchased for 100*l*. *Oeno*, a small island lying eighty-five miles W.N.W. from Pitcairn, is, as the islanders state, not habitable being a low coral formation, with a large lagoon in its interior. Mr. Richard Thompson (master) places Pitcairn island in lat. 25° 4' 9" S. long. 130° 8' 15" W. and 1° 17' 58" east of "Papiété," fourteen-days passage. Variation by Azimuth 7° 0' 0" east. The longitude is by chronometers, two of which were going

very regularly, and give the same result ; the third, had not been so steady. The indications of the glasses had been very sluggish until nearing this island, when both rose more than usual, and a strong breeze with squally weather ensued. At the island they still rose a little, fresh breezes continuing with frequent squalls. We have not seen a sail between the Society islands and this.

Having done all that was in our power for the advantage of these primitive and amiable, and most interesting islanders, and having witnessed undoubted proofs of their great attachment to the countrymen and land of their fathers, we had only to return to Valparaiso ; therefore at 7 P.M. on Saturday, Dec. 9th, we stood away to the southward with the wind at east, and had moderate winds from E. to N.N.E. for the six following days. The night of 15th, was calm, followed by a breeze at E.S.E. at 7 A.M. of the 16th, when having reached long. $122^{\circ} 4' W.$ lat. $34^{\circ} 39' S.$ we still stood to the southward. The winds proving baffling, and a long swell from the S.W. indicated that the wind would be from that quarter, at noon we tacked to the N.E., wind being settled at E.S.E. from which point to east it continued to blow fresh and squally throughout the 17th, 18th, and part of the 19th, when in the afternoon it gradually came to N.N.E. enabling the ship to make a good course. The 15th and 16th, we experienced a current east and S.E. twenty-three miles per day ; the 18th, 19th, and 20th, west and S.W. eighteen miles a day. On the night of the 20th, the wind drew to north and blew a fresh gale with heavy sea, for twenty-four hours ; the glasses falling considerably, and nearly in the same in proportions ; lat. $16^{\circ} S.$ long. $110^{\circ} 39' W.$ At noon of the 21st. of Dec. wind N. by W. which continued to the night of 24th, the wind then shifting, after four hours of rain to S. by E. which was succeeded on Christmas-day by calm and fine, lat. $35^{\circ} 40' S.$ long. $95^{\circ} 20' W.$ The 26th, brought a breeze again from N.N.W. to W.N.W. which with heavy rain at midnight, veered to S.W. and after four hours cleared away, and at daylight of 27th, again came to W.N.W. in fresh breezes and flying clouds, with swell from S.W. and strong breezes in the afternoon and night. This continued through the 28th, at night fell light, and continued light and very fine all the 29th, and 30th, the wind only varying from W.S.W. to S.S.W. and west on the 31st. with the breeze moderate and very fine. At midnight Dec. 31st, lat. $34^{\circ} 27' S.$ long. $76^{\circ} 10' W.$ wind W.S.W. moderate. On the 1st, of January 1838, the wind came to S.S.E. and S.E. and carrying sail through the night, we made Coroumilla point at 3 A.M. of the 2nd, and anchored at 6 35 A.M. in the bay of Valparaiso, where we found H.M. Ships Stag, Commodore Sullivan, Harrier, and Basilisk.

H. W. B.

ILLUSTRATIONS OF DAMAGE BY LIGHTNING, IN THE BRITISH NAVY.

By Mr. W. Snow Harris, F.R.S. &c.

No. II.

THE possibility of defending ships against damage by lightning, being for the most part, a question of observation and experiment; it is essential to obtain a history of the effects of lightning on shipboard within some given period, so as to arrive by a good induction of facts, at a sound philosophical view of so important a subject. Nothing of this kind however has yet appeared; which is to be regretted; for beside the practical results to be derived from it, others of a statistical nature may also arise, of no small consequence to the general interest of our naval and commercial Marine.

With a view of commencing such a history, I have in this paper briefly enumerated, and discussed the facts of such cases of damage by lightning in the British Navy, as have come to my knowledge, and which have occurred within the last fifty years or thereabout; that being a period sufficiently extensive for arriving at fair average result. Although the instances given, can only be considered as a minor portion of the number which must have occurred within this time, and which might possibly be obtained by a mere extended and influential inquiry, they are still sufficiently numerous for an approximation, and present results of considerable interest.

I have perfect confidence in the general authenticity of the statements, inasmuch as they have been obtained, either by an immediate reference to the official log books, or from Naval officers who were either present when the damage occurred, or who had knowledge of the circumstances. With some few slight exceptions therefore, as to the perfect accuracy of the dates; I have not any doubt of the whole being truly and fairly detailed.

Cases in which the circumstances have not been ascertained, are merely mentioned with the dates as nearly as possible, hence little information can be derived from these, except the fact of the ship having been struck by lightning.

The whole number of cases amounts to 174; these comprise 74 line of battle ships; 55 frigates, 39 small class frigates, and brigs, 1 cutter, 3 sheer hulks, 2 ships in the ordinary, 1 sheers at Halifax.

In 55 of these cases the full particulars as regards the damage done to the masts, have not been ascertained. If we abstract therefore these 55 cases, together with the sheers and ships in ordinary; we shall have 114 cases of sea going ships to reason from.

In the 114 cases will be found, 47 line of battle ships; 37 frigates, 12 small class frigates, 17 brigs, 1 revenue cutter, hence we have

96 Vessels having three masts
16 Vessels having two masts
1 Vessel having one mast

Of the 96 vessels having three masts we have

Struck by lightning	}	on the main-mast	55
		on the fore-mast	24
		on the mizen-mast	5
		on the bow-sprit	1
		on the fore and main	6
		on the main and mizen	5

Of the 17 vessels having two masts we find

Struck by lightning	}	on the main-mast	13
		on the fore-mast	4

So far therefore as our induction from these cases extends, about half the *ships* struck by lightning, are struck on the main-mast; about one quarter on the fore-mast, about one-twentieth on the mizen-mast, and not above one in a hundred on the bowsprit or jib-boom.

No instance is observable, in which the fore and mizen-masts are struck, exclusive of the main-mast; and only about five or six in a hundred in which either the fore and main or main and mizen-masts are struck together.

In cases of vessels having two masts, about three-fourths appear to have been struck on the main-mast, and about one-fourth on the fore-mast. The number of cases however in the last instances taken separately, is much too small for the purposes of calculation.

By including a few cases, of which some particulars have been given; we find 17 in 104 instances, or about one in six in which the ships have taken fire, in some part of the sails, mast, or rigging,* and 52 cases, that is one-half in which some of the crew have been either killed, or wounded, or both.

In about 100 cases we find two, or about one in fifty, in which damage has occurred to the hull,† and in the whole 175 cases, one in which the ship was totally destroyed and nearly all the crew perished;‡ an occurrence, probably more frequent, than generally imagined.

Of the facts which present themselves in a statistical point of view; it may be observed—that in about 100 cases of damage, we find:

Number of Seamen	}	Killed	62
		Wounded	114

These are exclusive of one instance in which the number killed is denoted as several, and of the instance of a frigate of 44 guns

* See Nos. 11, 13, 38, 58, 69, 70, 84, 88, 89, 105, 108, 131, 138, 152, 157, 160, 173.

† See Nos. 18, 144. ‡ See No. 128.

in which nearly the whole of the crew perished; they are also exclusive of 12 instances in which the numbers wounded or hurt, are set down as many or several.

Of Masts damaged or destroyed, we find :—

Line of Battle Ships.	}	Lower-masts	43
		Top-masts	36
		Top-gallant & royal	23
		Bow-sprit, &c.	1
Frigates.	}	Lower-masts	29
		Top-masts	26
		Top-gallant & royal	18
Vessels of less than 30 guns.	}	Lower-masts	21
		Top-masts	21
		Top-gallant & royal	19

The cases in which damage has occurred at a time when the service of the ships were urgently demanded amount to 10, many of these are particularly important, as affecting the service of the whole fleet, and fairly demand an attentive consideration.

If such a mass of damage by lightning in our Navy has occurred in only 100 instances; the loss in men, in money, and in services of ships, upon all the cases which have occurred within the period above-mentioned, must be very considerable.*

It has been already observed, in my former communication, that in estimating the loss in money, we have not only to consider the workmanship and materials in making good defects, but also the wages, provisions &c. and other expenses incidental to the detention of the ship. The three cases therein given, two of which are frigates only, appear to have been attended by a loss in money of not less than 16,000*l.* When therefore we take into the account the fact, that the present damage applies in great part to forty-seven ships of the line, many of them first-rates, and to thirty-seven frigates, obliged in a great variety of instances to return into port and shift their masts; the item of expense must necessarily have been of a ruinous character. It will be found on examination, that the loss, in the mere expenditure of spars, a very minor consideration on the whole amount, is still of no small importance. It is certainly somewhat difficult to estimate this with perfect accuracy; their value having varied from time to time, whilst the expense of lower-masts depends much on the kind of wood of which they are constructed, as well as on many casualties tending to increase their cost; their exportation to foreign stations for the service of the Navy may be classed amongst these. I have been informed from unquestionable authority, that at the time many of the cases of damage above-mentioned occurred; the masts of first and second rates have cost 1000*l.* and upwards, whilst the cou-

* See Cases, 19, 36, 38, 57, 60, 69, 137, 143, 161, 166.

tracts for top-masts have been so high as 200*l.* each. Taking all these circumstances into the account, and considering that some of the masts damaged by lightning may have been again repaired, we may suppose without any chance of exaggeration; that the loss upon each lower-mast of line of battle ships may have been about 600*l.* including the workmanship, &c., for repairs and refitting, together with the damage done to the rigging: on the top-masts 100*l.*; upon the lower-masts of frigates, 350*l.*; top-masts 80*l.*; upon the lower-masts of the smaller frigates and brigs, taking one with the other, 150*l.*; top-masts, 40*l.* This estimate shews an expenditure of 46,000*l.* and upwards; without considering the top-gallant and royal-masts, and the occasional damage in yards. This for the given period of fifty years is not far short of 1000*l.* per annum. upon 100 cases only,

Now it may be observed by the official report, made by order of the Admiralty, in July, 1834,* that the insurance of ships against damage by lightning, by an efficient protection, would, at the utmost, not exceed 6½*d.* per cent. upon their value, and would ultimately become very much less, probably, under 3 per cent. The expense, therefore, on account of a first-rate, would not at least exceed 13*l.* per annum; a second-rate, 11*l.*; a third-rate, about 9*l.*; a fourth-rate, 7*l.*: hence it may fairly be inferred, that more money has been expended upon an average, annually, in spars alone, on account of damage by lightning, than it would have cost to have defended the whole navy. Now, when we reflect on the little importance which attaches to any consideration of expenditure, viewed in relation to the *loss of life*, and the *services of ships*, we have certainly to regret that some good and efficient protection on ship-board from lightning is not more generally resorted to in Her Majesty's service, as well as in shipping generally.

The following is a brief history of 174 cases of damage by lightning in the British Navy, from January 4, 1786, to January, 1836.

(The cases taken from the Official Log Books are marked thus *.)

No.	Ship's Name.	Guns.	Remarks.
1	AJAX	74	In 1813, main-mast disabled.
2	ARETHUSA	36	In 1816, main-mast shivered.
3	ARROW	10	In 1810, main-mast disabled.
4	ACTIVE	36	In Gibraltar Bay, 1802, one man killed—main-mast damaged—main-top-mast and top-gallant-mast destroyed.
5	APOLLO	44	In 1811, particulars not correctly ascertained.
6	ARETHUSA	44	Sierra Leone, 1811, one man wounded—main-mast damaged—main-top-mast shivered.
7	AID	10	On survey, Mediterranean, August, 1819, shivered main-top-mast.
8	ACHATES	18	In 1812, damaged main-mast.

* Nautical Magazine, No. 34.

No.	Ship's Name.	Guns.	Remarks.
9	ASSISTANCE	10	1790, two men wounded; further particulars unknown.
10	AGINCOURT	74	1798, Mediterranean, many men wounded severely.
11	ARMADA	74	1811, Basque Roads, fore-mast set on fire—men struck down on the decks.
12	ALBION	74	Sheer Hulk, Portsmouth, 1821.
13	ALBION	74	Jamaica, 1799, shivered main-mast—destroyed main top-mast & top-gallant-mast—set mainsail on fire.
14	ATHOL	28	Coast of Africa, 1831, shivered fore-top-gallant mast, top-mast, &c.; saved by chain topsail tye and sheets.
15	ARIADNE	28	June, 1805, Bermuda, split fore-top-mast and top-gallant-mast—several men severely hurt
16	ALBACORE	20	August, 1798, Jamaica. Shivered main-mast—destroyed main-top and top-gallant-masts—damaged the main-yard.*
17	ALEXANDER	74	Port Mahon, 1801, lost main-top-mast.
18	BELLEROPHON	74	August, 1807, one of the Hon. M. D. Couray's Squadron, off Rochfort, lost main-top-gallant-mast—main-top-mast shivered in pieces—main-mast damaged—mizen-top-mast shivered in pieces—mizen-mast damaged severely—perforated quarter-deck—started a butt end in the ship's side—a rider underneath the deck split—one man killed—eight men wounded.*
19	BELLE POULE	38	January, 1809, in the Adriatic, on the blockade of Corfu.
20	BARFLEUR	98	1812, off Toulon, fore-top-mast shivered—fore-mast damaged—light-room windows of fore magazine shattered.
21	BADOER	18	August, 1822, at Chatham, mast damaged, in ordinary.
22	BLOODHOUND	10	Coast of Newfoundland, August, 1812, main-mast shivered, sails rent.*
23	BARHAM	50	Mediterranean, 1836, damage not ascertained.
24	BÜZZARD	14	At Minorca, 1812, lost main-top-mast and top-gallant-mast, &c.*
25	BUZZARD	10	Fore-top-mast and top-gallant mast shivered, fore-mast wounded.
26	CONQUESTADOR	74	1813, particulars not ascertained.
27	CRESSY	74	1812, off Cherbourg, lost main-mast.
28	CHANTICLEER	18	1822, October, at Corfu, shivered main-mast from the truck to the deck.
29	CLINKER	14	1829, January, Coast of Africa, lost her main-mast.
30	CHICKEN	14	Fernando Po, 1828, masts damaged—lost main-mast.
31	CAMBRIAN	44	February, 22, 1799, off Plymouth, fore-mast struck—two men killed—twenty wounded—main-top-sail split—fore-top-mast damaged slightly.*
32	CAMBRIAN	44	January, 1798, main-mast-head slightly damaged.
33	CLORINDE	44	March, 1813, off Ceylon, main-mast shivered from mast-head to deck—main-top-mast destroyed—two men killed—five wounded seriously—many hurt.*
34	CALEDONIA	120	In Basque Roads, in 1810, fore-mast damaged—fore-top-mast and top-gallant-mast shivered—several men wounded—ship on her return obliged to shift her fore-mast at Spithead.

No.	Ship's Name.	Guns.	Remarks.
35	DRAGON	74	Mediterranean, Nov. 1810, main-mast and main-top-mast disabled and sprung—top-gallant-mast carried away—main-top-sail split.
36	DUKE	90	West Indies, 1793, main-top-gallant-mast and yard disappeared—main-mast and top-mast severely damaged—obliged to be cut away. It appears by a communication from Admiral Bedford, that the ship was at the time in action under a battery at Martinique.
37	DRUID.....	32	August, 1829, West Indies, damage unknown.
38	DICTATOR	64	October, 1794, at the time of sailing with convoy from Martinique, main-top-mast and main-mast disabled—ship detained a week—figure-head set on fire.
39	DRYAD	36	Mediterranean, March, 1828, damage not ascertained.
40	DRUID.....	36	1790, lost fore-top-mast—several men killed.
41	DORIS	36	1808, particulars not ascertained.
42	DESIREE	36	1803, Jamaica, main-mast shivered—main-top-mast destroyed.
43	DRAGON	74	1801, Summer, one man killed—several wounded—all the men in main-top injured—some severely.
44	ELEPHANT	74	November, 1790, Portsmouth, main-mast shivered, and main-top-mast.
45	EOLUS	32	West Indies, 1809, fore-mast damaged severely—top-gallant-mast destroyed.
46	EDEN	28	In 1822, particulars not ascertained.
47	ELK	18	In 1816, fore-mast shivered.
48	FIGGARD	36	In Gibraltar Mole, particulars not ascertained.
49	FOUDROYANT	80	July, 1799, Mediterranean, three men killed; further damage not ascertained.
50	FOX	10	Revenue Cutter, mast damaged from cap downward, <i>except</i> where it was <i>coppered</i> .
51	GLATTON	54	May, 1794, Mediterranean, considerable damage—lost mizen-mast, top and top-gallant-masts, beside other damage—(Log of the Lion). *
52	GLOUCESTER	74	Malta, August, 1830, main-mast and main-top-mast crippled and shivered—ship obliged to refit.
53	GOLIAH	74	August, 1802, fore-mast splintered—top-mast and top-gallant-mast shivered—two men killed—thirteen wounded—all the gear aloft on the fore-mast went overboard.
54	GIBRALTAR.....	80	September, 1802, at Gibraltar, lost fore-mast—also fore and main-top-mast—three men wounded.
55	GRIFFIN	18	July, 1808, lost main-mast.
56	GABATEA	44	June, 1805, West Indies, lost fore-top-mast and fore-top-gallant-mast—several men wounded.
57	GLORY.....	98	Cape Finisterre, main-top-gallant-mast destroyed—main-top-mast shivered—main-mast damaged—several men in the tops severely hurt. <i>This ship formed one of Sir R. Calder's fleet, and the damage occurred just before meeting the combined fleets of the enemy, so that the ship was already crippled in her main-mast.</i>
58	GIBRALTAR.....	80	In 1801, off Cadiz, main-sail set on fire.

No.	Ship's Name.	Guns.	Remarks.
59	GLOUCESTER	74	At Cephalonia, in 1830, lost main-top-mast.
60	GENEREUX	80	Port Mehon, February, 1801, lost fore and main-top-masts—main-mast damaged severely. * * * —This ship formed one of the fleet under Sir J. B. Warren, which having refitted at Port Mahon, had just proceeded to sea in pursuit of the French squadron under Gauthaume. It is a remarkable and very important fact, that the whole of the British squadron were more or less disabled by lightning: it appears by a letter from Admiral White, then Captain of the flag-ship, that the fleet sustained as much damage in spars as would probably have occurred in a general action. The Genereux was so disabled that she did not again sail until the peace. The fleet consisted of the Renown, Dragon, Gibraltar, Hector, Genereux, Haerlem, line of battle-ships; the Mercury and Phœnix, frigates.
61	GUERRIERE	36	It appears by <i>James's Naval History</i> , vol. vi. p. 132, that this ship engaged the large American frigate Constitution, with her main-mast in a tottering state from lightning. (<i>James's Naval History</i>).
62	HYACINTH	18	Indian Ocean, fore and main-top-mast and top-gallant-masts shivered—head of fore-mast rent—struck first on fore-mast. * * * —The lower masts appear to have been saved by the chain top-sail sheets, and by one of Earle's patent pumps, which conducted the electric fluid through the ship's side into the sea.
63	HAERLEM	64	Mediterranean, 1800, disabled in main-mast.
64	HECTOR	64	February, 1801, one of Sir J. B. Warren's squadron; amount of damage not ascertained.
65	HYDRA	36	May, 1808, Off Sicily, main-mast shivered from the truck to the deck—ship returned to Malta for refit.*
66	HIBERNIA	120	Off Toulon, 1813, amount of damage not ascertained
67	HELDER	32	1811, Summer, off Copenhagen—main-mast shook from the truck to the deck, and in great part destroyed—other damage—ship sent home in consequence.
68	HELICON	18	February, 1812, Plymouth, main-mast struck—one man wounded.*
69	HERON	20	March, 1828, South America, fore-top-sail-yard shivered in the slings—fore-mast damaged through centre—part of fore-royal and top-gallant-studding-sail burned—top-mast-back-stay and shrouds cut through. • * * —It appears by communication from the Hon. Capt. Grey, then commanding the Heron—that out of five ships composing the Brazilian squadron, for the protection of our trade during the war between Buenos Ayres, and the Brazils; the Heron and Thetis frigates, were about the same time disabled and under refit, the latter having been struck, and the fore-mast and top-mast shivered, whilst the Heron was lying at Rio without her fore-mast—all this it seems happened at a period when the services of the ships were required for convoys, &c.

No.	Ship's Name.	Guns.	Remarks.
70	IMPLACABLE	74	Spring, 1811, Off the Isle of Wight, main-mast damaged severely—fore and main-top-mast and top-gallant-masts shivered in splinters—fore-top sail-yard carried away in the slings—eyes of main-rigging set on fire—several men hurt.
71	INDEFATIGABLE ...	44	In 1806, Bay of Biscay, two men wounded severely—further damage not ascertained.
72	IMPERIEUSE	44	East Indies, 1800, particulars not ascertained.
73	JASON	36	In Gibraltar Mole, damage not ascertained.
74	KENT	74	July, 1811, Mediterranean ship disabled in her main-mast, main-top-mast and top-sail-yard; also mizen-mast, top-mast, and top-gallant-mast; one man killed, two wounded—went to Port Mahon to refit*
75	KENT	74	Off Toulon, 1813, } particulars not ascertained. 1802, }
76	KENT	74	
77	LA LOIRE	38	1809, Cadiz, main-mast, top-mast, and top-gallant-mast shivered, two men killed.
78	LARNE	20	February,—1820, two men killed.*
79	LIVELY	36	Bay of Naples, 1805, particulars unknown.
80	LYNX	20	1835, masts damaged.
81	LYNX	20	1836, Princes Island, slight damage to masts.
82	LONDON	74	Lost fore-mast.
83	ST. LAWRENCE ...	112	October, 1814, Lake Ontario, main-mast and main-top-gallant-mast destroyed—one man killed—ten wounded.
84	LOWESTOFF	36	Mediterranean, one of Admiral Hotham's squadron, ship made a wreck—masts and rigging on fire—main-mast cut away—fore-top-mast shivered—main-mast and top-mast shivered—two men killed, several wounded and hurt.*
85	LAVINIA	44	Particulars not ascertained.
86	MELVILLE	74	Malta, September, 1830, split main-top-mast and top-gallant-mast, and damaged main-mast—ship detained to refit and get a new mast.*
87	MAGNIFICENT	74	April, 1814, off Ushant, lost main-top-mast and top-gallant-mast, and damaged main-mast.*
88	MOSQUITO	10	January, 1830, off Corfu, ship struck in several places, two sails set on fire and cut away.*
89	MADAGASCAR	50	January, 1830, Corfu, main-mast-head set on fire; main-mast and mizen-top-masts severely damaged—ship detained under refit.*
90	MILFORD	74	January, 1814, Plymouth Ordinary, jury-mast damaged.
91	MEDINA	20	1830, at Wydah, particulars not ascertained.
92	MONMOUTH	74	At Naples, in 1802, particulars not ascertained.
93	MINERVA	36	Coast of Malabar, 1791, one man killed—further damage not ascertained.
94	MINERVA	36	In 1812, fore-mast disabled.
95	MERCURY	32	One of the look-out frigates of Sir J. Warren's squadron, Feb. 1801, Mediterranean—main-mast damaged—two men killed.

No.	Ship's Name.	Guns.	Remarks.
96	NEREUS	36	March, 1814, Rio de la Plata—main-mast disabled—main-top-mast shivered in splinters.
97	NIEMEN	36	Spring of 1814, Halifax, lost main-mast.
98	NORGE	44	June, 1815, Port Royal, splintered main-top-mast and top-gallant-mast—damaged mizen-top-mast and top-gallant-mast which fell down on deck—four men hurt.
99	OCEAN	98	February, 1829, at Smyrna, main-top-mast damaged.
100	OCEAN	98	Summer of 1813, in the Rhone, main-top-mast split in pieces, main-mast damaged—ship obliged to go to Port Mahon to have a new mast.
101	ORLANDO	36	In 1815, at Smyrna, main-mast disabled—main-top-mast and top-gallant-masts destroyed—several men hurt—ship obliged to go to Malta to refit.
102	PIQUE	38	In 1804, Jamaica, damaged considerably—particulars not ascertained.
103	PALMA	48	Oct, 1814, Carthagena, fore-top-mast and top-gallant-masts shivered—grazed the fore-mast—one of the main-deck beams splintered, one man killed—six men hurt severely—many slightly hurt.*
104	PEGASUS	32	1787, particulars not ascertained.
105	PHÆTON	36	In autumn of 1824, Gibraltar, fore-mast shivered from the truck to the deck, and set on fire together with the small sails in the top, also the top-mast studding sail in the larboard rigging—main-top-gallant-mast also struck—signal halliards burned in cinders—several men struck down, but not seriously hurt. Extract of letter from Capt. Stuart, commanding the Phæton.*
106	PRIMROSE	18	Sierre Leone, March 1828, lost main-top-mast.
107	PRIMROSE	18	At sea.
108	POMONE	44	January, 1796, at Plymouth, lost fore-mast—main-top-mast-stay-sail set on fire—ship just refitted.
109	POMONE	44	In 1806, off Ushant.
110	PERSEVERANCE ...	36	In 1790, Bay of Bengal, lost fore-mast.
111	PELICAN	18	December, 1837, coast of Africa.
112	PIEDMONTESE	36	North sea.
113	POMPEY	74	West Indies.
114	PRESTON		Sheer-hulk at Woolwich, summer of 1822.
115	PRINCE GEORGE...		Sheer-hulk, Portsmouth, September, 1826, top-mast totally destroyed.
116	PRINCE WILLIAM..	74	Sheer-hulk, Portsmouth, November, 1790.—one of the sheers destroyed.
117	PRINCESS ROYAL ..	20	June, West Indies, much damaged.
118	PORT MAHON	36	Jamaica, 1805, main-mast—main-top-mast and top-gallant-mast shivered—one man hurt.
119	PHŒNIX	90	February, 1801, one of Sir J. B. Warren's fleet, particulars not ascertained.
120	QUEEN	90	At Messina, 1815, damaged main-mast—ship obliged to go to Malta.
121	RHADAMANTHUS ..		Steam frigate, March, 1837, at Santander, main-top-mast shivered.*

No.	Ship's Name.	Guns.	Remarks.
122	REVOLUTIONAIRE	44	In 1816, disabled in main-mast.
123	ROYAL SOVEREIGN	120	November, 1813, Hamoaze, Plymouth, damaged fore-mast.
124	ROYAL SOVREEIGN	120	November, 1809, off Barcelona, main-top-gallant-mast shivered—two men killed.*
125	RUSSEL	74	October, 1795, coast of France, shattered main-mast and main-top-mast—mizen-mast, top-mast, and top-gallant-mast, severely damaged—first lieutenant killed—two men killed—several hurt.*
126	REPULSE	74	April, 1810, coast of Catalonia, shivered main-top-gallant mast and main-top-mast—rendered main-mast unseviceable— <i>seven seamen and a boy killed</i> —three badly wounded, died soon after—ten men more or less hurt—some severely.
127	RUBY	64	July, 1810, in the great Belt, main-top-mast and top-gallant-mast demolished—main-mast slightly damaged.
128	RESISTANCE	44	1791, Bay of Bengal, fore-mast disabled. * * * —This ship was eventually blown up by lightning in the Straits of Malacca, and nearly all on board perished. Authorities, <i>Naval Chronicles, James and Brenton's Naval History.</i>
129	ROYAL GEORGE ...	100	In 1813, off Toulon, particulars not ascertained.
130	ROYAL OAK	74	Autumn of 1811, Basque Roads, particulars not ascertained.
131	ROYAL OAK.....	74	Bermuda, 1829, receiving ship, main-mast was set on fire—ship had nearly been burned.
132	RENOWN	74	February, 1801, damaged mizen-mast. * * * —This ship was the flag-ship of Sir. J. B. Warren's fleet.
133	RACER.....	18	October, 1834, off Carthagena, fore-top-mast destroyed and main-top-gallant mast.
134	SPARTIATE	74	In 1827, slight damage.
135	SPARTIATE	74	In 1828, slight case.
136	SAPPHO	18	November, 1820, in bringing home Lord C. Somerset, just after crossing the line, fore-top-mast and top-gallant-mast shivered—fore-mast disabled— <i>seven men killed, three wounded and died—fourteen wounded or hurt.</i>
137	SAN JOSEF	120	In Autumn, of 1813, in the Rhone, one of the fleet off Toulon, under Sir E. Pellew, main-top-mast and top-gallant-mast shivered. * * * —Of thirteen sail on the blockade of Toulon, nearly one-half were severely damaged by lightning at the same time.
138	SWIFTSURE	74	In 1806, had her fore-top-sail set on fire.
139	SCORPION	18	In 1806, main-mast unseviceable.
140	SABRINA	18	In 1811, damaged main-mast.
141	SULTAN	74	Off Mahon, February, 1808, jib-boom shivered—bowsprit damaged—seven men killed—three severely injured.*
142	SULTAN	74	September, 1812, Island of Tavoraro, main-mast, main-top-mast, and top-gallant masts split—top-gallant yard and sail shivered in pieces—detained at Malta under refit.*
143	SOUTHAMPTON ...	64	November, 1832, in the Downs, one of a fleet waiting to sail on an important service—damaged mizen-mast—ten beams injured—the electric fluid penetrated to the after magazine.*

No.	Ship's Name.	Guns.	Remarks.
144	SQUIRREL	28	August, 1805, struck twice on the Coast of Africa; the lightning broke to pieces two main-top-masts, two royal masts, and two top-gallant-masts. The main-mast was so splintered that no sail could be carried on it—all the caulking from the fore to the main chains loosened, and one plank stove; the ship made in consequence, eight inches of water an hour.
145	SURINAM.....	18	October, 1806, main-mast went in three pieces—compasses rendered useless—two men killed—much other damage. * * * —This vessel was employed in reconnoitring the enemy off Belleisle.
146	SUPERB	74	September, 1802, in Gibraltar Bay, slight case.
147	STATELY	64	1801, one of J. B. Warren's squadron.
148	SCIPION	74	Off Toulon, in 1813, one of Sir E. Pellew's squadron, main-top-mast shivered in pieces—main-mast damaged—obliged to go to Port Mahon to refit and get a new mast.
149	SUCCESS	36	In 1820, at Malta, main-top-gallant-mast and main-top-masts shivered—main-mast damaged.
150	STAUNCH.....	16	Rio de le Plata, in 1807, fore-top-mast and top-gallant-mast shivered—bunt of top-sail set on fire
151	SHEERS		In Halifax Dock Yard, 1812, much damaged.
152	TONNANT	80	Winter of 1804, Bay of Biscay, main-mast damaged—one man killed, ten wounded.
153	TONNANT	80	February, 1812, Cawsand Bay, Plymouth, fore and main-mast, also main-top-mast and fore-royal-mast*—obliged to go into Hamoaze and shift her masts.
154	TRUSTY	50	October, 1801, Malta, lost main-mast and other damage.
155	THAMES	32	In 1808, particulars not ascertained.
156	LE TIGRE	80	November, 1809, lost main-mast and main-top-gallant mast.
157	THISBE	32	In January, 1786, masts shivered—sails and rigging on fire—obliged to cut away the main-mast—ship nearly dismantled—ship's cutter stove.*
158	TAMAR.....	36	July, 1825, River Hooghly, East Indies, main-mast shivered from truck to deck, and rendered useless.
159	TOPAZE	36	West Indies, July, 1802, mizen-mast shivered from the truck downward—one man killed—one wounded, who died soon after—three hurt.
160	TRIUMPH.....	74	In 1803, Mediterranean, mat on the main-yard set on fire—two men knocked overboard.
161	THETIS	44	April, 1828, Rio de la Plata, one of the Brazilian squadron employed in the protection of our trade, fore-mast shivered and fore-top-mast.
162	TRINCOMALE	20	East Indies, 1797, particulars not ascertained.
163	TALAVERA	74	Archipelago, December, 1834, particulars not ascertained.
164	TAMAR	36	In 1822, Jamaica, main-top-mast destroyed—main-mast-head shivered.
165	TALBOT	28	January, 1834, at sea, lost main-top-mast.
166	THESEUS.....	74	Autumn of 1803, St. Domingo, fore-royal-mast, top-gallant-mast, top-mast shivered—fore-mast damaged—one man killed close by the fore magazine.

No.	Ship's Name.	Guns.	Remarks.
166	THESEUS (<i>cont.</i>)...	74	* * * —This ship was employed in blockading the port of Cape Francois; she was obliged to leave her station, and proceed to Port Royal to refit—the panic in the ship on this occasion was frightful, the people rushing up the hatchways under an impression the ship was sinking and the magazine on fire, were with difficulty prevented from jumping overboard or taking to the boats.
167	UNION.....	98	Off Toulon, in 1813, one of the squadron under Sir E. Pellew.
168	VILLE DE PARIS...	120	Off Toulon, in 1813.
169	LA VIRGINIE	144	In September, 1799, Madras Roads, main-top-mast and top-gallant-mast shattered in pieces—main-mast sprung—main-top-sail yard damaged, and the topsail split.*
170	VALIANT.....	74	Off Boston, in 1813, main-top-mast shivered in pieces—main-mast head damaged—ship obliged to proceed to Halifax in order to refit, and get a new mast.
171	VANGUARD	74	Mediterranean.
172	WARRIOR	74	Autumn of 1810, Messina.
173	WINDSOR CASTLE	98	Autumn of 1794, fore-yard on fire—two men wounded severely.
174	WASP	28	January, 1814, main-top-mast shivered and lost overboard—main-mast so much damaged as to be unserviceable; two men killed.*

REMARKS ON CANEA AND THE NORTH COAST OF CANDIA.—*By Mr. W. H. Hall, R.N., late Master of H.M.S. Alfred, Capt. R. Maunsell.*

CANEA BAY is formed by Capes Spada and Malka; the distance across is twenty miles. We entered it in the forenoon, with a fine westerly breeze, but as soon as we drew up the bay the wind became light, and hauled in after us light, a regular sea breeze.

The scenery around the Bay of Canea is very beautiful. In a S.E. direction is a high row of mountains, at the foot of which is situated the town of Canea, tolerably well fortified, and containing about 7,000 inhabitants. Small ships can enter the harbour, but large ones are obliged to lie outside, and are much exposed to northerly winds. There is a good anchorage for a few vessels inside the Island of Theodore, which is about five miles W.N.W. from Canea, and which must be entered from the eastward, as there is a ridge of rocks extending from the main to the west end of it.

The rugged land of Cape Malaka, which forms the eastern extreme of this Bay and Mount Ida, with its snowy top beyond it, are very conspicuous.

After communicating with the British Consul we rounded Cape Malaka, keeping about two miles off shore; and while passing had light and variable winds, but when clear of it the wind became steady from the westward.

To the eastward of the Cape we opened the Gulf of Suda, which is, I understand, one of the best anchorages in Candia, and a good harbour for refitting and procuring supplies.

The water is very good, and easily obtained from rivulets on the eastern shore. We saw the small island just within the entrance on which stands a fort. On entering the harbour you pass to the southward of it, and anchor about four miles above it in seven fathoms water. Abreast of it there is good anchorage in from sixteen to seventeen fathoms, muddy bottom, with Cape Drapano S.E. $\frac{1}{2}$ E., and the Mosque N.W. three-quarters of a mile.

From Cape Malaka we shaped our course along shore E. by S. $\frac{1}{2}$ S.; at sunset we were abreast of the town of Pretimo, and at midnight off Mount Ida, which we could distinctly see, it being a clear moonlight night. We also observed several lights or small fires along the coast.

At daylight the town of Candia was a little abaft the beam. It appeared a large city, with a wall round it, and is said to contain about 12,000 inhabitants. Small vessels only can enter the port, the large ones generally anchor inside the Island of Standia, (which is about five miles off,) and discharge their cargoes into large boats, which convey them to the city. The Island of Standia is about four miles long, and there is deep water between it and the shore. We passed close outside of it, and soon after made the small islet Ono, which is a barren rock of a moderate height. Having passed between it and Cape St. John, at noon, the latter bore S.W.

About three leagues to the southward of the Cape is the Bay of Masabello, in which there is shelter for small vessels with a southerly and westerly wind. In running along the north side of Candia we had moderate breezes from the westward, without any easterly current, but found ourselves drawn in-shore, more particularly as we drew near the eastern end of the Island. In the afternoon we passed the three islands called the "Janissaries," which are of a moderate height, and about eighteen miles to the N.W. of Sidera; at sunset we took our departure from this Cape, (which, like all the eastern end of Candia, is not very high,) bearing W. by S. $\frac{1}{2}$ S., about six miles, and shaped a course for Alexandria, S.S.E., distant about 300 miles; at the same time Cape Solomon, and the small Islands of Lassa, were in one bearing S.S.W. $\frac{1}{2}$ W., and the Island of Caxo and Mount Ida were still in sight from the deck; the latter must have been distant from us upwards of 100 miles.

Of the ports of Candia that of Canea is the most frequented. The mole by which it is formed is about 1,200 feet in length: it has

lately undergone great repair, and a light-house has been erected at its extremity, but the lamps have not been fitted.

The Port of Suda is three miles distant, by land, from Canea, and is perfectly safe in all weathers. There are no villages close to the shore on either side, as the ground is too steep. There are several small islands at its mouth, on one of which there is a fortress, which commands the entrance.

The Ports of Candia and Retimo are also formed by a mole, but are so small and so filled with sand, that a vessel drawing more than eight feet water cannot enter. They have been cleared out a little, and attempts are yet making to render them deeper.

The Ports of Spinalonga, St. Nicola, and Sutro, are not much frequented. The public works which have been undertaken in Candia within the last four years are, the repairing and cleansing the above-mentioned three ports; the repairing, in a slight degree, the fortress of Carabusa and Surda; the repairing a few roads in the immediate neighbourhood of Candia and Canea. The expences of these works have amounted to 3,700,000 piastres, or about 37,000*l.*

An aqueduct for supplying Candia with water is now being laid down, which will cost, at least, 5,000*l.* sterling. The fortifications of the cities of Candia, Canea, and Ritimo, are in good repair, but those of Carabusa and Suda are in a very bad condition.

The number of cannon and troops in the different fortresses are as follows:—

	Men.	Cannon.
Canea	800	104
Suda	200	36
Carabusa	200	16
Sfakia	100	00
Retimo	700	80
Kisamo	000	6
Candia, } Spinalonga.. }	4,200	226
	<hr/>	<hr/>
	3,200	463

Each fortress has also a few gunners; the greater part of the guns are unfit for service, and about one-half are of brass.

Besides the regiment of Arab regular troops, there are in the island six companies of irregulars, principally Albanians; these should amount to 400 each company, but the actual number in the island does not exceed 1,300. They are distributed through the different districts, and form the police; their pay being sixty piastres, twelve shillings per month, and the ration of a half an oke, (1½*lb.*.) of wheat per day. About 100, who are mounted, receive 120 piastres, twenty-four shillings per month, and seven measures or bushels of barley for their horses.

B.

THE PILOTAGE BILL.

London, August, 1838.

SIR,—I observe, that the "Pilotage Bill" is not to be pressed this Session of Parliament; Mr. P. Thompson having put it off for the present; observing, "that he would consent to delay its further progress till next Session, in consequence of the many more pressing matters before the house."

We really have a right to expect from a reformed House of Commons, some little more attention to the business of the country—what could possibly prevent such a bill, for instance, as that in question being got through this session? a bill, which not three members in the house would give themselves the trouble of thinking one moment about, except the two members of the Board of Trade, and the Lord of the Admiralty, who brought it in; indeed, it is pretty well known, I suppose, by every body, that when three members of the government, take in hand to effect a regulation of this sort, the House gives them credit for a due consideration of the measure, and takes for granted that it is correct, and the bill passes as a matter of course. This is the case 99 times out of 100, and the bill in question would form no exception, indeed its evident usefulness would ensure its passing in the usual manner of such bills. The public interested in shipping, may well consider the postponement of this bill injurious to their interests, and this will appear the more evident, by looking at the enormous amount that is now paying for this most unnecessary charge of pilotage, for, however unpopular it may be, to deprecate the services of those very able, and in many respects, useful people—"the pilots of our coasts and harbours." I mean to shew that your correspondent, "a Skipper," is not only perfectly right in his views of their mischief, but also to notice what he has omitted, in not alluding to the enormous tax this charge has become, since the extension of steam-navigation to *foreign voyages*, it was bad enough before upon sailing vessels. I myself recollect paying for a ship of about 400 tons, for the ordinary pilotage, boarding money, boats and kedges, then considered necessary, about 40*l.*, from Dungeness to the docks in London; but now, when almost any body, with the commonest attention, can conduct a steamer through any of the channels and entrances to our harbours, and when from the rapid voyages of these vessels, a man in charge of them, may, in a year's practice, have as much experience as ever a regular pilot attained to enable him to become such; it seems perfectly ridiculous to say to such a man, you shall not have charge of your own ship, but that that the owners shall pay another, not one jot more capable than you are, from 300*l.* to perhaps 500*l.* a year for such service; and this even, though the master professes his readiness to undergo all the necessary examination, to *prove* his qualification.

The whole thing is monstrously inconsistent, and must be put an end to, and this, I think, with "a Skipper," the provisions of the bill in question, are entirely calculated to effect, without doing any injury to the existing pilots. At the same time it will relieve the shipping interest, especially that increasing portion navigated by steam, and be also a check on the too common practice of entrusting property and lives to unskilful hands, in charge of that immense proportion of the ships of this country, (coasters,) which are now by law entirely without control.

What a monstrous absurdity it is, to see, for instance, a ship that may be worth 10 or 15,000*l.*, built at an outport, and brought round to London, in charge of any body whom the caprice of an owner may appoint, free of all pilotage, and the same man, if put into a craft value 500*l.*, cannot be allowed to take her out of the port of London to sea, if going upon a foreign voyage !

Again, a man may be twenty years in charge of a coaster, no matter what the extent of his practice may have been : if his vessel is chartered to go "foreign," he must have a pilot to take him to sea ! whereas, to take charge of a coaster, no check at present exists, no hindrance to the appointment of a gentleman's servant, or porter, to be skippers of any ship whatever so employed, he is at once *an authorized pilot* for such ship, all round the coast of Great Britain !

Now the new pilot act will give a very proper check to this wanton hazarding of lives and property. It will make *every ship* subject to pilotage ; coasters will be subject to it, unless the master has had two years practice in command of a collier, or three years in a coaster, and it will make all other ships subject to it, unless, when a master, mate, or seaman, shall have sufficient local knowledge *of the port he trades from*, and has undergone a proper examination to that effect. It is to be hoped that this provision will be re-considered ; no person should be entrusted with this charge, but *the master himself*, and a master of every ship whatever, should have a right to pilot his ship into, and out of, all ports whatever, if he offers himself for examination, and gets the proper certificate of his fitness for so doing. It will not work well, to devolve this matter to a mate, much less to a foremast man, it is quite inconsistent with all experience, to suppose such a charge taken by any one, but the master ; and to restrict the pilotage of the ship in such charge, to the port to which the ship belongs, or trades from, would be hampering the bill, and placing a useless limit to the good which it is calculated to effect, that good being evidently to make every master a very superior sailor to what he is at present, and which must increase wonderfully, the competence of the whole body in command (or rising to it,) of the merchant service.

The bill is intended to exempt altogether from pilotage, ships employed in carrying the mails,—a very proper regulation. It throws

upon the owners the responsibility of appointing proper persons to their command, who are at once to be presumed competent. The necessity of taking pilots in these vessels, is a very frequent cause of delay, whereby the public service is injured. The complete inconsistency of the present regulations respecting pilots, could not be better shown, and at the same time the propriety of the intended alteration, than by stating a case.

A regular licensed pilot, a Cinque Port pilot, has an offer of the command of a fine ship; he gives up his warrant, goes on a foreign voyage, and, is by law obliged to take a pilot from London to the Downs, and from Dungeness back to London! If this be not absurd, what is? It is no less so to see a man in command of a vessel who has, from attention and experience, made himself so well acquainted with certain channels, as to be able and willing to undergo all the examination necessary to constitute him a pilot, should be still refused the charge of his own ship! All this sort of common sense, will be attempted to be opposed by such statements as the following:—Sands shift, buoys are removed, or new ones laid down; new lights are erected, or old ones altered, &c., &c., to which I will reply, that when sands shift, it may happen that the first knowledge of such alteration, is gained by a pilot bumping a ship thereon, and that if such happened first to the master in charge, it would be no worse probably in its consequences; but this pilotage of his own ship, would lead the master in charge, to such constant attention, and consideration of the channels, that I repeat, it is incalculable what a different man it would make of him; and should there ever be a little imaginary drawback attendant upon the proposed alteration, it should be submitted to, in consideration of its producing an infinitely greater amount of good.

Pilot establishments will still remain; and there is no ground to apprehend, that such a large proportion of clever fellows, will at once make their appearance, as capable of piloting their own ships, to cause any diminution in the employment of licensed pilots. The very fear expressed by the pilots themselves on this subject, is a tolerably convincing proof of the weakness of their cause. It is an admission of the little there is to be learned in their business; but I, who have not the fear before my eyes, of a "warrant" becoming of no value, can see more clearly, and assure them, that they need be in no fear whatever; but that on the contrary, I see by the check, which the bill will introduce upon coasters and colliers, that the demand for pilots for some years, will be increased. No living pilot will see the day that his services will cease to be required. The present establishment must, however, be gradually reduced, that is quite certain.

One point connected with this subject, is the manifest defect, which we are under at present, owing to our not giving early attention to navigating the harbours, of our own coast, occasioning a serious

difficulty to masters of ships, when, owing to bad weather, they cannot obtain a pilot, and are thrown into situations where they must at all risks, pilot their own vessels. How very often does this happen, how repeatedly in bad weather, and night time, does a ship miss getting a pilot at Dungeness; and I will put it to any master in the foreign trade, when these cases do occur, whether he does not find himself in situations of very considerable anxiety, and no small degree of risk.

I cannot conclude these remarks without expressing my entire concurrence with a "Skipper," in the worse than uselessness of the pilot's cutters, appointed to cruise at Dungeness: they should be abolished altogether; it is really too bad, to be called on to pay for the support of these cutters, which not once in ten times are to be fallen in with during nights, and not once in a hundred during night and bad weather combined, the only circumstances under which they are of any use whatever. If a master cannot take his ship up to Dover or the Downs, during day-light, and fine weather, the sooner he is sent to learn, the better. The same may be said of many other pilot stations, where the cutters cruise at such a distance, (I have often fallen in with them before making the land,) that the extra charge, under the name of "distance money," is a serious addition to the pilotage, and yet such is our habit, or our ignorance, to call it by its proper name, that the practice is not only tolerated, but really is a relief to the greater portion of merchant masters, and often a very valuable aid, which nothing in fact will alter, but allowing all masters, when capable, to pilot their own ships.

Keep up a high rate of pilotage, and, however loath a man may be to increase his responsibility, by becoming his own pilot, he *must* learn to do so, for owners will naturally soon make it a point of employing such masters as are capable of releasing them from the charge of pilotage.

I am, Sir, your obedient servant,

"SOUNDINGS."

ACCOUNT OF A SELF-REGISTERING APPARATUS FOR SHEWING THE STABILITY AND VARIOUS MOTIONS OF A SHIP AT SEA.—By Mr. J. C. Mitchell, Mate of H.M.S. *Excellent*; communicated by Commander Washington, R.N.

THE recent improvements in the construction of ships in the British Navy have induced me to consider whether some simple and portable machine might not be constructed, at a trifling expense, so as to register the degrees of inclination, the pitching and scending, as well as the various movements of a ship, in such a manner as to afford accurate and certain *data* of the behaviour of a ship at sea; whereby

the trials of our ships might be attended with useful results,—their stability might be exactly compared, and naval architects thus supplied with requisite elements still further to improve their construction.

With this view I venture to offer the readers of the *Nautical* the following brief notice of a machine, the plan and drawing of which have been submitted to the inspection of the Port Admiral, the Admiral-superintendent of Portsmouth Dock-yard, and several captains and officers of the Navy, who have expressed themselves satisfied with its capability for fulfilling the desired object.

The principle of the apparatus consists in the combination of two pendulums working at right angles to each other, and moving pencils parallel to the axes of two cylinders, (on which skeleton forms on paper are wound,) made to revolve by a time piece, one pendulum moving in the line of the keel of the vessel, and thus indicating the pitching and scending motion; the other moving at right angles, or parallel to the beam, and thereby shewing the degree of inclination and consequent stability of the ship.

These pendulums are made to work in a fluid, and are so adjusted in a close vessel as only to oscillate with the movement of the ship.

The whole apparatus is enclosed in a mahogany case, with a glass door or front, and occupies the place of a writing desk, about twenty inches long, by thirteen wide, and may be conveniently placed upon a table against the foremost bulk-head of the captain's cabin in a ship of war, or in a yacht; the only condition required being to fix it in the line of the keel.

It is unnecessary to enter into the details respecting wheels, racks, pinions, &c., by which the movements are communicated accurately, and traced on the paper; but a short description of the diagrams may serve to give some notion of the results.

The skeleton forms. As before mentioned, a skeleton form on paper is placed round each cylinder. No. 1 to shew the inclination of the ship has seven divisions lengthways, corresponding with the days of the week; half of each division is sub-divided into fifteen degrees, shewing what she heels to starboard or to port: the divisional or centre line indicating that she is on an even keel. The days are divided into twenty-four hours by vertical lines, and these hours into minutes: thus, on the scale which I have followed in my construction, the space of each hour of the day will extend over half an inch, or one-eighth of an inch is allotted to each quarter of an hour. By the same scale the 15°* on each side of the "even keel line" will extend over three-quarters of an inch, or one-twentieth of an inch to

*As ships are all supposed to come to their bearings at 15° of inclination, it has not been thought requisite to give a greater scale; but the machine will register the heeling of the vessel as far as 22½ degrees.

each degree, which appears sufficient to measure the inclination with accuracy : but the scale may be increased at pleasure.

It is hardly necessary to state that the various degrees of heeling will thus be represented by a diagram, shewing, on inspection, when a ship heels over either to a great or less degree, as acted upon by a strong, steady breeze, a squall, or a calm. The changes, also, incidental to a shift of wind, being taken aback, bearing up, shortening sail, being struck by a sea, &c., will all be indicated at the instant of time, in a manner which the most correct log-book could not pretend to ; and the effect produced by the same cause, on two or more ships in company, may be compared on inspection without trouble and without calculation.

Form No. 2. The paper on which the pitching and scending is to be traced, is divided longitudinally into six divisions, of four hours each, being one for each watch in the twenty-four hours, and every hour is again divided by vertical lines into minutes : thus the diagram of each hour will extend over two inches of space, or one-tenth of an inch to every five minutes of time.

The scale for measuring the degree of pitching or scending is divided into twelve feet on each side of the centre or "even keel line," and extends over six-tenths of an inch, or one-tenth for every two feet of dip by the head or stern. But as the trim of ships is generally somewhat more or less by the head or stern, this centre line of the diagram may be set either to even keel, or to sailing trim. Besides shewing the depths to which a ship pitches, the angle made by the tracing pencil will also indicate, by its acuteness, or the contrary, the sharpness or ease with which the movement is made.

As at present arranged, the form No. 2 will contain the register for one day only, in order to take advantage of the whole scale ; but the apparatus is also constructed to receive a weekly form to correspond with that for heeling. By means of these two a record might be easily preserved of the movements of a ship for a whole voyage, and might be bound up with the ship's log-book, or transmitted to the Admiralty in company with it.

Besides registering the various movements of a ship, this machine will also register the direction of the wind, and the course the ship is sailing ; but as this would, of course, render it rather less simple in construction, and increase its bulk, I prefer leaving it in its present state, provision being made for these additions, if required, or called for hereafter.

J. C. M.

Portsmouth, September 20th, 1838.

MANNING THE NAVY.

MR. EDITOR,—I have seen some observations in the *Shipping Gazette* on my plan in your last July number, for "Manning the

Navy," followed by letters from a correspondent at Limehouse signing himself "Observer;" animadverting, not only on my plan, but also on the remarks made on it by the Editor of the *Shipping Gazette*. At the foot of "Observer's" first letter, this editor says, that "he could not discover to what it tends;" and he repeats this flattering observation, also, on publishing "Observer's" second letter.

I will not follow the want of courtesy of the correspondent of the *Shipping Gazette*, who plainly affirms "that I know nothing of the matter I attempt to treat upon," an ignorance which he at the same time coolly attributes to "most of those who discuss naval questions;" meaning, of course, that nobody knows anything of the matter but himself.

And I do not intend this as any challenge to enter into controversy with him, his style is better adapted for those of his own class. Nor, in point of fact, should I consider anything he has said worth the replying to, being quite of the opinion of the Editor of that most respectable newspaper, the *Shipping Gazette*, that it is difficult to know at what he (of Limehouse,) aims." But his letters are, from beginning to end, so entirely at variance with truth, that as all the world (very small part indeed according to "Observer,") is not informed on these matters, the greater portion may be misled; I shall, therefore, take the liberty of over-hauling them.

As respects Sir J. Graham's Bill, I content myself with referring to every report of Parliamentary proceedings, from the first intention announced by Sir James of introducing the Bill, including every subsequent mention of it, in either house, to the present hour, to confirm my statement, that by every one of those members who have noticed it as of any use whatever, it has, without exception, been considered, as a bill, calculated "to man the navy;" for which purpose I again, without hesitation, assert it is a total failure. It is stated by "Observer" that it appears to him "to be only a consolidation of previous laws." It is so far from this, that it sets out *with repealing every existing law in reference to Merchant Seamen*, and then enacts a *set of new provisions*, totally at variance with previous law and practice; and, as every practical man knows, is arbitrary, inconsistent, ineffectual, and totally against common sense. As for the other bill, which "Observer" seems to suppose I have mistaken for the one above remarked on, it is a worthy rider to its parent, and the best proof of its value is his own admission, viz., "that it has never been necessary to resort to it;" but not for the reason he gives, "that sufficient men are obtained in the ordinary way," as I mean next to shew.

Will "Observer" please to inform us how long H.M. line of battle-ship, Donegal, was prevented sailing to relieve the command in the Tagus for the want of men? I have half a dozen other ships quite

ready to ask the same question about, if this is not sufficient, but which I will answer at once, by saying, that some months were occupied in getting her manned.

Does not "Observer" know, that the 5000 men added to our fleet about two years ago, were obtained with the greatest possible difficulty? if not, let him consult the journals of that period,—the statements made on the subject in Parliament, and to which no good answer was given? It is a notorious fact, that the line of battle-ships put in commission upon that occasion, were *many months* in completing their crews, notwithstanding that the greatest exertions were made: the whole coast of Great Britain was ransacked for volunteers! Tenders, sloops of war, and I think even an eight-and-twenty, were sent in all directions, even to the Shetland Islands, to beat up for volunteers. That they were manned at all is the only wonder. There is that old horror still existing of the Naval Service, though wearing away, which has made it the dread of the British sailor from time immemorial. This must be done away with, and I have said, that the conduct of naval officers of the present day, and the comforts of the seamen's life in a man of war, are such as deserve that all prejudice of this kind ought to vanish. I have deprecated impressment as a measure perhaps impossible, ever again to have recourse to, but that something must be done towards manning the navy, is clear, and I fancy "Observer" will find there is sufficient reason in my suggestions to cause more "than half a dozen men in Parliament" to support it. I am charged with my notions being "arbitrary;" *every apprentice when he is bound to the sea would consent formally to the system*, which is a sufficient answer to this charge.

The "disparity of wages" is a wilful misstatement. Assuming "Observer" to be as well informed on the question as he pretends to be, it should, in the Merchant Service, have been stated at thirty-five shillings to fifty shillings *per calendar month*. Within a very few years I have myself commanded a ship when the first-named sum was paid; but forty shillings is the usual pay. Able seamen's pay in the navy is not, as asserted, thirty-two shillings per month, but thirty-four shillings, and this *per lunar month, or twenty-eight days*. The merchant sailor's pay is not *continuous for three years*: he is on shore, out of pay, looking for new ships, a very considerable portion of his time. The abundance of provisions in the Queen's ship enables the man-of-war's man to exchange its surplus for considerable supplies of important articles, which the merchant sailor pays for, (and is imposed upon for). Look at his clothing, which is supplied at one-half the price in the navy, that the merchant seaman pays, and in which he is shamefully robbed, almost invariably, to say nothing of his losing his whole "kit" every time he gets on shore amongst the harpies that surround him. I will appeal to the *families*

if these two descriptions of sailors, and if the wife of the "regular man-of-war's man" is not the best provided for, why then say, the Merchant Service is the best. But in the mean time I will affirm, that the pay of the navy is superior. If all served their allotted period in the navy, *these advantages would be known*; and the senseless distinction, which it is rather odd "Observer" should not see through, considering his exclusive knowledge in naval matters, would vanish.* No, it is not the pay that forms the objection, for the sailors themselves, who have experience in the public ships, can calculate and know *that it is much better*. But it is the hereditary dread of a man of war, and the love of license and dissipation which belongs to the man brought up and continuing in the Merchant Service, his frequent spells on shore, habituating him to licentiousness without limit, that unfits him for naval or any other discipline. Prevent all this by the good training every youth would go through by my plan, *and that by his own consent*, which is an answer to the last remark I shall make of "Observer," namely, that it is preposterous to be devising schemes for manning that navy by coercive service, which in any shape or form must produce unwilling servitude.

I am, Sir,

Your obedient servant,

A SKIPPER.

Mr. Wood, (Naval Secretary,) is reported lately to have said in the House of Commons, that twenty sail of line of battle-ships could easily be equiped for the service, provided only that sailors could be procured to man them. Perhaps "Observer" will satisfy the Honorable Secretary that the men will be forthcoming when wanted.

Naval Chronicle.

MONTHLY GOSSIP.—Go on, Mr. Editor, go on and prosper. Glad to see your friends of the *Mariners' Club* have at last found their way into the *fair* pages of the *Nautical*, for fairer they are than those of any of its contemporaries, and enlivened with their *Noctes Ambrosianæ*, and your own useful information, the little blue book will always have a flowing sheet, which of all sheets is that which Jack likes best, in spite of the vulgar predilection for clean sheets. Why the very name of your barkey, Mr. Editor, is a voucher of its

* It is something strange that the Editor of the *Naval and Military Gazette* (see paper of 22nd September,) should commit such a strange error as to state "that the pay of the Merchant Service is now double that of the Queen's. When a gentleman whose whole attention may be supposed to be devoted to Naval and Military affairs, commits such a blunder, it should almost justify the assertion of the Limehouse correspondent of the *Shipping Gazette*, "that very few indeed do know anything about the matter." We are told in the same number of the *Naval and Military Gazette*, "that a gallant and talented writer" is about to publish a pamphlet upon "Manning the Navy," wherein we are to be shewn how H.M. Ships are to be manned by "registration," *nous verrons*.

worth in this maritime land. There are lots of journals, daily, weekly, and monthly, and some are weakly enough in their would-be nautical essays; mewed up like sea-mews in a hen-coop, compared to the *Nautical*. Your's is an aquatic bird, free to fly wherever there are waters, salt or fresh. The navy of this country, great as it is, forms but a portion of our maritime community.

Look at the East and West India fleets, the fleets of steamers, water-grinding steamers! aye, and the fleets of ships and boats of all nations; all these belong to the *Nautical*, or rather the *Nautical* to them. Why shouldn't their crews be appealed to, and why shouldn't they find amusement as well as instruction in its pages, as well as a junto of philosophers, dry geometricians, poco-curante cavillers, and verbal critics. Sailors at large are a fine, generous, noble-hearted race of men, well worth pleasing, and not, thanks to them, too fastidious to be pleased. I have a peculiar pleasure in writing for them. They are not to be considered as mere aquatics, amphibious animals, encased within their wooden walls like lobsters in their shells; they are to be treated on in all their relations with society in general, and their claims to the admiration and regard of their countrymen set forth in their real light. Come, friend Argus, belay all that, I think you are just now saying, and give us a stave something more to the purpose.

Well then, Mr. Editor, so much with your leave for clipping my last letter, and now that we are even, we'll start afresh.

So those wisecracs, whose business it is not to make bad bye-laws for the good of Her Majesty's liege subjects on the river Thames, have at last found out that they knew nothing of the matter. At least, the magistrates who have to administer their wise dogmas, have at length discovered it from *practical* men. Two more commanders of river steamers have been "had up" at the *bow window*, i. e. the bench of the law, and fined in *mitigated* penalties for running their boats above five miles an hour. It was considered hard, and so it doubtless was, that these small fry among the steamers should be so served, while the leviathan-grinders of the deep should go unpunished, and it was at length discovered and admitted on all sides that, with a tide running four miles an hour, a vessel going only one, was unmanageable; thus proclaiming from the fountain of justice itself, the utter absurdity of the law by which that justice is to be administered, and virtually holding it up to derision. It is, however, the clumsy framers of such a law on whom all the disgrace of its failure rests. The absurdity of limiting steamers to five miles per hour, to prevent them from raising a swell which would wash over the low gunwhales of the cockney flat-bottomed wherries, or the huge barges of the river, which it is well-known are so heavily laden, through the avaricious cupidity of their employers, that the midship part of *their* gunwhales is actually often below the surface of the water! The absurdity of this I pointed out in your May number, and now they are going to amend the law, I suppose. Let the wisecracs get a blue jacket or two among them, practical men, Mr. Editor, and they will tell them how to set all to rights with steamers, barges, and wherries.

There is a very handsome pier I see just completed on the south side of the Thames, near Southwark Bridge, for the use of the London and Westminster Steam-boat Company, and also the Gravesend boats. It is called the "Bank-side Steam-boat Pier." Perhaps this

Company will take the matter in hand about speed in the river, and teach the "worshipful" Company of Watermen and Lightermen, who have distinguished themselves for their ignorance of nautical matters, that they must keep pace with the times by building their *boats' gun-whales to a proper* HEIGHT between the sculls, and that *no barge would be sunk by any swell raised in the river if she were not MONSTROUSLY AND SHAMEFULLY OVERLADEN*. This it is that endangers the lives of Her Majesty's subjects, and let them look to it.

With respect to river matters, collisions of steamers with each other, as well as sailing vessels, seem to be the order of the day, in the glorious state of confusion in which the Thames may be seen every day. What with burnings, collisions, swampings, &c., business goes on merrily there; the wonder is, that it goes on at all, to say nothing of lesser matters. I see the *Iberia*, the Peninsular Company's steamer, is reported to have run foul of the *Neptune*, a collier, in sea-reach, one night lately, and that the *Thames* and *Shannon*, two other steamers could not pass in the channel without coming in contact; the two latter belong to another Company, and have been running between London and Dublin for the last dozen years. But, I believe, it will be found with regard to *Iberia*, that the collier run into her; yes, run into the steamer; but it is the fashion of the day, you know, to lay the blame invariably on the steamers whenever accidents of this kind happen. As to the two steamers getting foul of each other, can that be wondered at in the absence of all regulations as to how these vessels are to pass each other, either at sea or in close rivers; a state of things, the ill effect of which, I believe, has been pointed out more than once in the *Nautical*. Then there is the lighting of these vessels, just in the same condition, some adopt one method and others another; and I see in your last number, your correspondent, "*Soundings*," all but mistaking the light of the *Trinity House* steamer for a channel light! Who would ever dream of such a thing, but he has pointed out how very easily it might be done; if there is a possibility of such mistakes being made, depend on it Mr. Editor, we shall hear of them sooner or later. The mode adopted in lighting the Peninsular Company's vessels is much approved, and is worthy of being followed, if only because it shews the course of the vessel, a quality which no single light can possess, even when of the *first order*, such as the *Trinity yacht* might be expected to turn out.

Lloyds' have rewarded the persons who signalized themselves in rescuing the crew of the *John Stamp*, an account of which I see in page 281 of your April number. By the way, Lieut. Stark, who I told you in my July letter had done the same on the banks of the *Tay*, has received, in addition to the plate I mentioned, both the gold and silver medals of the "*Shipwreck Institution*," besides a salver from the "*Dundee Life-boat Society*," with the first-class freedom of *Dundee*, and various letters of thanks. Lieut. W. Lane, R.N., of the coast-guard, has also been presented with the silver medal of the "*Shipwreck Institution*," for saving the crew of the *Victoria*, a French vessel, wrecked in June last. I don't think I have told you that Capt. Back, of North Polar notoriety, is now Sir George Back. Lieut. Shambler, R.N., commanding H.M.S. *Lightning*, has received the Order of Leopold of Belgium, for his attention to the Duke of Saxe Coburg, while conveying him to Antwerp. By the way, what business had this same *Lightning*, on shore the other day

off Gravesend, to get laughed at by the pilots there? What was Her Majesty's Pilot about? Lieut. T. Brown, of the *Clio*, being paid off at Portsmouth since my last, has received the same gratifying marks of esteem and regard from the officers of that vessel, juniors and all, which I have mentioned on former occasions of this nature, and they have parted with each other in cordial friendship. Lieut. Thomas Graves also, I see, has been presented, by the Pacha of Egypt, with an elegantly mounted pipe, of considerable value; a donation, which, in the East, is looked on, particularly from such a source, as one of considerable importance, and redounds to the credit of our talented young officer.

The heroine, Grace Darling, the humble daughter of the lighthouse-keeper, who so manfully I was going to say, but so heroically aided in saving the unfortunate survivors of the *Forfarshire*, has received medals from the Humane Societies of Glasgow, Newcastle, and Leith; about £150 has been subscribed for her; and at Dundee, another considerable sum; and it is to be hoped, that this example will be followed elsewhere. Mr. Editor, for surely such a *darling* ornament of the Fern Islands deserves well of her countrymen.

I told you in my August letter, that the *Hastings* seventy-four, was preparing at Portsmouth to convey our Dowager Queen Adelaide to Malta. Her Majesty attended by a military escort, was received at Portsmouth by the civil, naval, and military authorities, and the people of that town in a very neat address, welcomed her arrival, and assured her Majesty that they felt a lively interest in the consort of their late beloved sovereign, William the Fourth. Queen Adelaide embarked on board the *Hastings* by the *Meteor*, under a royal salute, and carried off with her the warmest wishes for her health and happiness. The *Hastings* sailed the same day, (3d Oct.,) and the *Meteor* attended her to the mouth of the channel with a prosperous wind.

Yacht sailing, it appears, Mr. Editor, is likely to be turned to some better account than merely giving employment to our seamen, and contributing to the pleasure of amateurs; this *nautical* pursuit which so truly belongs to the gentlemen of maritime England alone, is to be turned to the purposes of geography in the hands of Mr. James Brooke, a gentleman who is about to sail in his yacht, the *Royalist*, schooner, on what may be literally called a voyage of discovery. He proceeds to the island of Borneo, calling in his way at the Cape of Good Hope and Singapore; and after examining the coast of Malludu Bay, and extending his researches into the interior, if practicable, he will visit Celebes, and probably afterwards some of the interesting groups of the Pacific Ocean, returning home by Cape Horn. Such an instance of the devotion of life and fortune is new in the annals of discovery, and the voyage of the *Royalist* yacht, with the name of her gallant and noble spirited commander, Mr. Brooke, will deserve a conspicuous place among those of our circumnavigators. The *Royalist*, it is said, will sail in about two months.

The French ships *Astrolabe* and *Zélée*, under Capt. D'Urville, have reached Conception from their attempt to penetrate to the south pole from New South Shetland. It appears they have suffered most severely from scurvy, and did not succeed in getting south of 64° S. latitude. The other expedition of the French, which was to penetrate to the north pole, while M. D'Urville reached the south, has returned

equally unsuccessful, owing to the masses of ice, by which the coast of Spitzbergen was surrounded. M. Gaimard, under whose direction the expedition sailed, has returned to Paris from Hammerfest by land, having left some of his party to winter at that place, and obtain observations, intending to rejoin them in the spring, when it is hoped that another attempt will be more successful.

The subscription to the Nelson monument is progressing under the unwearied patronage of the Duke of Wellington. The hero of Waterloo felt himself in his right place on the 1st of August last, when he presided at a meeting held in London. Let us hope, Mr. Editor, that the navy will not be wanting on this occasion in doing a noble part towards rearing a monument worthy of such a name. In the way of monuments I see others are going forward, and one to Collingwood, to be erected at Newcastle, assimilates well with the name of Nelson at the present time. I heard something the other day of the late Sir Pulteney Malcolm's name being perpetuated in a similar way.

What method is this of Mr. Dalziel's, by which he proposes to pump ships at sea? I heard the other day of a very ingenious one, proposed by Lieut. Kendall, R.N., consisting of a series of troughs placed as inclined planes, and traversing across the vessel, a communication by valves being kept up, which opening only one way, admitted the water to the upper trough from the lower, but prevented its return: thus by the motion of the ship alone she was pumped out.

In the way of harbours I perceive that improvements are going forward at Berwick. The river is to be deepened to ten feet from the quay to the bar, and new quays are talked of. Hastings, it appears, is not to be shared out of a harbour if 60,000*l.* can make one. Mr. Cubitt's plan has been held as impracticable, that is, I suppose, too expensive. Improvements are also going on at Weymouth, in extending the pier, which your Nautical readers should know is distinguished by a red light, commenced on the 8th of October last.

The giant steam is revolutionizing with giant strides all our old quiet ways. On *terra firma* we are getting used to rapid transits, and the Great Western steamer is doing all she can to initiate John Bull into what may be done on the ocean. Twelve and a half days from New York, as a regular passage, is working marvellous effects on men's minds. Why should not the same be done to India, is a very natural question. And why should it not be done, both by way of the Red Sea, and also by the Cape of Good Hope, are likewise very natural questions, and both answered in a proposal to do both. There was a numerous meeting in the city of London the other day, at which a committee of gentlemen were formed to mature a plan of Captain Barber's to establish that by the Red Sea; at which meeting were also present other gentlemen, who were already engaged in carrying out that by the Cape. Thus adverse parties are each working clearly to the same end, though by tolerably opposite means. Now, Mr. Editor, that both of these routes will be established is matter of some doubt, but that one will be, I think may be taken for certain. There will be ample time in another number to say more on this important subject; for the present it will be enough to observe, that the *performances* of the Great Western divest the voyage by the Cape of half its disadvantages, while it retains all its acknowledged

advantages. At the meeting alluded to, reproaches were dealt out of broken promises, and a cold apathy, it was said, had been shewn on the part of this country to take up the question in earnest, while India, the object of all, lay as far off as ever! Too true this, no doubt; but people seem to be in earnest at last, both parties are at work, and when promises are in a fair way of performance you shall hear of what is to be done. Iron steamers are to be employed, it is said, in this service.

Well, if we have not got Archimedes himself fairly afloat at last on the muddy bosom of the Thames, we have got one of his descendants, called the Archimedean, a new steamer of course, and the first of her kind, as you shall hear. The grand object in this vessel is to do away with paddles and those huge unwieldy affairs the paddle-boxes, instead of which she is provided with a propeller, consisting of a vertical shaft, round which is a flange, placed near the stern-port. A rapid motion is communicated to this by the engine, and the effect is to propel the vessel* ahead. The inventor is the ingenious Capt. Ericsson (who produced the sounding machine, known under his name,) and a good deal has been said of the success of an experimental vessel on this principle. Mr. Smith, the engineer, is also concerned in building her. By the way, talking of steamers, I understand that the Gorgon steamer, mentioned in your last, has been doing something on the coast of Spain. The Phoenix stands no chance with her. Phoenix left Passages for Santander at 1h. 30m. P.M., and Gorgon also at 5h. P.M., and arrived only half an hour after her, a heavy head sea on. Gorgon, it would appear, has beaten her three hours in a distance of eighty miles! What was Phoenix about?

Commander Henvey, of the navy, has invented a life-buoy, which has been tried at Portsmouth and Guernsey with success. It is a simple contrivance, and is well worthy of attention.

At Portsmouth the necessary operations are going forward with spirit for establishing the Floating-bridge across the harbour; and the foundations of the stone-piers on each side, for the chains, are in a forward state. As for the bridge itself, I would recommend the company not to forsake the material of which their wooden walls have been so long formed, as they appear to be hesitating between it and iron.

Portsmouth seems to be really shewing signs of life, Mr. Editor. Some worthy wight has at length hinted the possibility that our first sea-port possesses other advantages besides those of a great naval arsenal: that it has natural and local advantages which they must not sleep over, as they have done, if they ever intend to rescue Portsmouth from that state of "nothingness" [capital word,] for which she has been so long remarkable. Yes, Mr. Editor, when railways, foreign steam-boats, and Southampton docks, indicate certain signs of the times, it is no time to sit still and look on at them if people wish to partake in their benefits. We shall see what the discovery will produce.

There is another scheme started abroad which I have omitted to

* Her dimensions are as follow:—Extreme length fore and aft, 125 feet; length between perpendiculars, 107 feet; breadth of beam, 22 feet 6 inches; depth of hold, 13 feet; diameter of screw, 8 feet; and it is intended to apply engines of 45-horse-power.

mention. It is proposed to cut a canal through the Isthmus which separates the Bay Fundy from the St. Lawrence, by which the circuitous navigation round the coast of Nova Scotia would be saved from St. John's, and an early passage secured up the St. Lawrence, besides the avoiding of many plagues and troubles in the way of icebergs and long tedious passages. The plan seems well worth attention, and promises much good.

The ship owners, masters, and pilots of the Isle of Wight, have been petitioning the Trinity-House not to obscure their dear Needle's light, when that of St. Catherine's is established, which it is to be shortly. What good, say they, is your St. Catherine's light to us, going to places within the Needle's passage? and how can we approach the Needle's channel near enough to obtain a sight of the light without danger in S.W. gales, were it not for the Needle's light? and what use would St. Catherine's light be to us while the Needle's light is our only safeguard? Pray do not commit so barbarous an act, or you will ruin us by either obliging us to keep the sea to take the circuitous route by St. Helen's, or you will cause our inevitable wreck to effect no good purpose whatever. There is something in all this, Mr. Editor, and the opinions of experienced pilots, headed by the gallant Commodore of the Yacht Club, the Earl of Yarborough, should receive attention. Doubtless St. Catherine's on the Isle of Wight is a noble place for a lighthouse, but why meddle with the Needle's light?

Says your devoted ARGUS.

**HARBOURS OF REFUGE, ON A NEW PRINCIPLE:—By William Tuit,
Civil Engineer.**

[From the United Service Journal for September 1838.]

(Concluded from page 709.)

In the construction of an harbour of this description, it is not to be concealed that some additional expenditure may, perhaps, become requisite, but great advantages are not to be obtained without a corresponding sacrifice. And it may be observed, that the expense of its formation is all that it will be necessary to incur; for if the harbour shall have been placed in a judiciously selected locality, and well and carefully executed at first, little further disbursements will be required; for the work will be in all its intentions complete. A small annual sum, however, it is evident, must be applied to the purpose of repairs and other incidental circumstances.

An harbour upon the principle now proposed, where a not too great but sufficient depth of water can be found, at a reasonable distance from the shore, may, as already stated, be constructed on almost any point of a shingle coast. The question then will be, not as heretofore, in looking for a site, "Where are we to find a place where nature has already formed a kind of imperfect harbour at the debouchere of a stream or streamlet, to assist our efforts, and enable us to construct one at the least expense?" but, at what point of a dangerous shingle shore, and particularly where there is no stream or back-water, it may be most suitable for the reception and secure protection of vessels in distress? There we plant an isolated harbour of refuge.

The breakwater of an harbour thus constructed would afford a

certainly of ingress and safety, under all circumstances, and at all times of tide, to vessels drawing twenty-two feet water; for, in short, it is only by carrying the mouth of the harbour into a suitable depth of water, and consequently at an additional expense, that a shelter for vessels of any tonnage may be obtained.

The figure of the isolated harbour will, of course, be modified according to a variety of local circumstances. The form best adapted, generally speaking, however, for the free passage of the shingle behind it, as well as to get rid of the shingle to leeward, is that within the angle, formed by its longest sides, is made to rest upon the shore, presenting the shortest aperture for the passage of the shingle; and by means of the leeward side having a wedge shape, and thereby enabled to give a slanting direction to the natural current, so as to co-operate with the artificial stream in shore, in carrying forward the shingle (after it has passed the harbour,) and preventing the formation of a bank to leeward.

From the existence of several very awkward shingle banks, immediately to the eastward of Dover harbour (formed, in all likelihood, or aided considerably in their formation, by the remedial process of artificial scouring so much in vogue, and so much relied on at that port,) no small degree of investigation into local matters, and much consideration and address would be necessarily employed, before it could, with any degree of confidence, be adapted to Dover; that is, if the conservation of the present entrance to the harbour be an indispensable condition, a *sine qua non*. Yet, notwithstanding of these untoward circumstances, a harbour, upon this principle, might still be constructed even there; but it would necessarily be of limited extent, its area not exceeding ten or twelve acres at high water. But this, or less than this, would perhaps be quite sufficient at that port as a packet station.

There, are, however, several places not very distant from Dover, at which such a harbour as that now proposed might be constructed with every possible advantage, if totally independent of the present harbour at Dover.

WM. TAIT, C.E.

15, London Street, Fitzroy-square.

RAISING SUNKEN VESSELS.

SIR,—You will oblige us by giving insertion to the enclosed plan furnished by George Peacock, Esq., Master of H.M.S. *Andromache*, by the adoption of which, the brig *Andrew White* was lately raised from the dangerous position in which she had lain for several days sunk in the *Cul-de-Sac*; also the letters addressed to us by Mr. Peacock on the subject. We consider that the publication of this plan is not only due to Mr. Peacock as a slight acknowledgment of the very handsome manner in which he volunteered his services, but may afford some valuable suggestions in similar cases. The style in which the plan was carried into execution by a party of seamen from H.M.S. *Malabar*, acting under the personal superintendance of Mr. Peacock, aided by the zealous co-operation of Captain Cockerell, and Mr. Gillard, the boatswain of H.M.S. *Malabar*, elicited the admiration of all who were present on the occasion.

We are, Sir,

Your most obedient servants,

Quebec, 21st August, 1838.

R. F. MAITLAND & Co.

H.M.S. *Andromache*, Quebec, 15th August, 1838.

Messrs. Maitland & Co.

Gentlemen,—Having noticed the dangerous position of the brig *Andrew White*, and the failure of the means hitherto adopted for raising her, I have taken the liberty of forwarding the enclosed plan for your approval, which should you be inclined to follow, I shall, with the permission of the Admiral and Captain Baynes, have much pleasure in superintending and putting in force with a party of twenty seamen.

I have already communicated my ideas to Mr. Cockerell, and if the plan be put in practice and succeed, of which I am very sanguine, it will be highly gratifying to, Gentlemen,

Your obedient humble servant,

GEO. PEACOCK.

Master of H.M.S. *Andromache*.

The brig *Andrew White*, of Sunderland, is lying in an awkward and dangerous position on the edge of the steep bank at the Cul-de-Sac, about seventy fathoms from the quay, half of the hull being over the bank, partly dry at low-water, and the other half sunk in deep water; and in this position, with her mast-heads on the ground, the weight of water in her after part keeps that part immersed so that the skylight and after-hatchways cannot be got at, at any time of tide, and admit of its free ingress and egress as it flows and ebbs; (the fore-scuttle, fore-hatchway, and about half of the main only are accessible at dead low-water,) and the means hitherto adopted having failed in raising her, I beg to offer the following suggestions for that purpose, viz. :—

First. That a cable or large hawser be passed out of each hawse-hole, and secured to back anchors, or firmly fixed posts a-head of the ship, with a purchase on each; and another stout hawser be made fast to the after part of the vessel, as low down as practicable, and if possible, passed under the keel and hove well taught from the King's (Queen's) Wharf, so as to keep the vessel at right angles with the edge of the bank whilst heaving her up.

Secondly—That a pair of sheers be erected on the broad side of the ship, below the covering board, stepped in oak chocks bolted on, immediately over the end of a deck beam abaft the fore-rigging and before the main, the heels to be well lashed round the stanchions and chain plates—that the lower mast heads be swept at low water with chains, which chains are to be secured to the sheer heads, and accurately measured so as to bear an equal strain, and to allow of the standing at an angle, with the lower masts of about 70°: the fore-and-aft gables to be rope, and secured to the quarter and bowsprit, the bob-stays and bowsprit shrouds to be well set up, and a runner secured from the foremast head, to the lower cat-head, to assist with the rigging and forestay in supporting the foremast; the position of the sheers with regard to the mainmast will prevent the necessity of any further support to it, as the angle of the chain guy will bring an equal strain, or nearly so, upon each of the lower shrouds.—That a purchase block be lashed at the sheer heads, and the lower block toggled to the bight of a long chain strop secured to the quay—hawasers to be placed over the lower mast-heads, when accessible, and eased away as the ship rightens from the King's wharf, to guard against the possi-

bility of the vessel's falling over the other way, when brought on her keel.

Thirdly.—That near the top of high-water, everything being prepared with the purchases, the cables be hove as taught as possible, then the sheer-purchase fall be well manned, and the ship will turn round upon her keel with little difficulty. Having brought the sheers so near the horizontal line as to be of little further use as an effective lever, another purchase may be got round the foremast, and the vessel brought completely upright, in which position she will, I imagine, displace less water and draw ahead on the bank from the strain kept up on the bow cables, and as the tide recedes the water-level will, at low-water, occupy much less space in the ship in her new position, and consequently be less weight on the after part, which will be sufficiently raised to enable the skylight and after-hatchways to be secured; and if the sinking scuttle be choked, which it appears is the case, (that circumstance having been the cause of the misfortune,) let a thrummed sail be passed under the heel at low-water, the pumps set on, a spare one be placed down the skylight or after-hatchway, and kept going; and as the tide rises I have little doubt but that the after part of the ship will rise with it, and at high-water she may be hauled in on the bank, or transported to any place required. The spars for sheers should be 12 or 14 inch, and from 45 to 50 feet long; the purchase blocks for the sheers from 20 to 24 inch, threefold; the fall $4\frac{1}{2}$ or 5 inch good rope, and from 120 to 130 fathoms long; the chain for the mast-head guies equal to 10 inch rope, and the fore and afterers, about 5 inch; the other purchases of convenient dimensions, as obtainable; the chain spans on the quay to be so placed, from the different rings and securities, as to bring an equal strain on all.

GEORGE PEACOCK,

Master of H.M.S. *Andromache*.

H.M. Ship *Andromache*, Quebec, 18th August, 1838.

Messrs. Maitland & Co.

Gentlemen,—Pursuant to the plan I had the honour to forward for your approval, through Mr. Cockerel, the master of the brig *Andrew White*, for raising that vessel, I have much pleasure in stating, that with the zealous co-operation of that gentleman and Mr. Gillard the boatswain of H.M.S. *Malabar*, with a party of twenty seamen, I proceeded to erect the sheers and fix the different apparatus, on the afternoon of Thursday, the 16th inst., and having the winches, purchases, guies &c., all prepared by sunset last evening, at half-past four this morning we commenced heaving, and by six o'clock succeeded in raising her on her keel and forcing her six feet further a-head on the bank, where she was well secured: at low water the sinking scuttle was hauled in, (having been previously cleared by means of a small boat introduced through the main hatchway,) the skylight and after-hatchways then planked over and caulked, and the pumps set on, when, as I had anticipated, she rose with the flowing tide, and was hove a-head by the cable purchases completely on the level bank, where she now lies dry at low water, and in perfect safety.

I have the honour to be, Gentlemen,

Your obedient humble servant,

GEORGE PEACOCK,

Master of H.M.S. *Andromache*.

ANTARCTIC VOYAGE.—In our last volume (p. 328) we laid before our readers an outline of the intended voyage of the French ships, *Astrolabe* and *Zélée*, and we now present them with a translation of Capt. d'Urville's letter to the French government, relating his attempt to reach the South Pole as proposed therein.

M. le Ministre :—In addressing to you a detailed report of our proceedings in the Antarctic Seas, I hasten to announce the arrival of the corvettes *Astrolabe* and *Zélée* at Conception, where they still are. After having passed nearly a month in Magellan Strait, in the pursuits of hydrography, physical and natural history, we departed from that celebrated channel on the 8th of January; and, favoured by fine weather and a fair wind on the 9th and 10th, we proceeded along the eastern shore of *Tierra del Fuego*, at the distance of three to four miles, as far as the Strait of *Le Maire*, laying it down as we passed it correctly on the chart. From thence I directed our course, with all despatch, to the southern regions. On the 15th January we saw the first icebergs in the latitude of 58° S.; on the 17th we passed some miles to the eastward of *Clarence Isle*, which we were unable to see on account of fog. The fog continued for two days, and prevented the vessels from seeing each other at the distance of a cable's length. On its clearing away the icebergs appeared numerous, and it became necessary to alter the course occasionally to avoid them. Continuing to the southward we made a rapid progress, and I cherished the hope of leaving them far astern, when, at daylight on the 22nd of January, we were finally stopped by a compact barrier of ice, which extended as far as we could see from S.W. to N.E. Enormous masses from 150 to 200 feet high were scattered here and there along the edge of this insurmountable wall, and nothing appeared to encourage the hope that it might soon break up. We ran along it among floating masses at the distance of one or two miles through an extent of 240 miles, which brought us from 64° S. to 61° S., near the *Orkney Isles*. I tried once to penetrate it among some hundreds of floating masses, but fortunately I was enabled to retreat in time. At another time we crossed through a place without accident, from the ice being somewhat rotten; but we shortly found ourselves shut in between two ledges, and were obliged to tack frequently among innumerable ice islands to disengage ourselves.

We remained to the northward of the *Orkney Isles* until the 2nd of February. In the hope that the summer being more advanced would produce a favourable change in the state of the ice, I again attempted to get to the southward. On the 4th, in 62° S., the barrier re-appeared; nevertheless, seeing a space apparently less compact, I steered towards it, and after having run all the evening among innumerable ice islands, both the corvettes were secured to one of them for the night.

On the following day, the wind having changed, the aspect of every thing also changed, and all outlet for us was closed. All our efforts on the 5th and 6th, amidst danger and fatigue, concluded only in placing us in the midst of ice islands so compact that the two vessels were immoveable. The 7th and 8th were even more grievous; and we anticipated the dire necessity of remaining enclosed within this icy barrier for an indefinite time. In this case the vessels and their crews would have stood little chance of being saved.

On the 9th we set our sails to a fresh breeze from S.S.E. Thanks to its powerful assistance and to the activity of the crews in heaving

on the warps, and by levers and pickaxes in forcing away the ice from the vessels, in eight hours we cleared the two miles of distance between us and the sea, and one more we found ourselves outside of all danger. In these anxious days in which our total loss was constantly threatened, the conduct of the officers was excellent, the crews continued throughout to obey their officers with zeal, notwithstanding the prolonged fatigue which they underwent. The vessels experienced no injury excepting in their copper, which was much damaged; and it is right to add, that they owed their safety to their solidity and their excellent qualities. Ships less solid or incapable of carrying their sails so well, would have yielded to the pressure and to the continued shocks of the ice, and would have been less able to disengage themselves.

Having escaped from prison, we continued our course for about 300 miles close to the barrier, which lay in an east and west direction, without finding any opening. On the 15th of February, having reached 33° W. longitude ($30^{\circ} 40'$ from Greenwich,) and crossed the place where Weddel penetrated without seeing an iceberg, and finding that the barrier then took a northerly direction towards the Sandwich Islands, I considered it was time to give up this painful investigation. The crews were much fatigued; the nights, which were already long, doubled the dangers of such a venturesome navigation, and to have prolonged it would have been blind imprudence.

From thence we kept to the westward, and successively examined the Orkney Isles, the eastern parts of the New South Shetlands, where we corrected some important errors, and from thence we attempted again to get to the southward; and there, between 63° and 64° south, in a space of about 180 miles, we explored a coast until then entirely unknown, which repaid us for the trials we had undergone.

Finally, we passed completely through Bransfield Strait, which no ship of war of any nation had yet done; and on the 17th of March we quitted the southern lands, and with them the icebergs, by which, for fifty-two days, we had been incessantly surrounded, and had often counted from sixty to eighty, independent of banks, which often interrupted our course.

This service has proved very severe to every person in the expedition; and although this is the first time that such attempts have been made by the French, I am convinced that no other chief of an expedition would have pushed his vessel further than I have done in similar circumstances.

My next object was to gain, as soon as possible, one of the ports of Chili, in order that my crews might have the rest and refreshments so necessary after a six months' harassing navigation like ours. I entertained the hope of conducting them in good health, but after some days a grievous scurvy shewed itself on board the *Zéléé*. Fifteen days only before, Captain Jaquinot, who commands her, had hailed me that the health of his crew was good, so that my consternation was great on the 16th March, when he announced, by signal, that he already had thirty scorbutic cases, twenty-one of which were in bed. This sad intelligence was concealed from the crew of the *Astrolabe*; nevertheless the disease progressed, and, to crown the misfortune, the winds, although generally moderate, were for a long time against us, so that it was not until the 7th of April that the two vessels were able to enter the Bay of Conception, and to anchor off the village of Talcahuano.

It was high time that we had arrived. On board the *Zélée* forty men were, more or less, affected by the scurvy; forty more were confined to their bed, seven or eight at the last extremity; and one dead. On the 1st of April the *Astrolabe*, much less unfortunate, had, nevertheless, fifteen men, more or less, severely attacked. Among the officers several exhibited the first symptoms of this dreadful disease, the ravages of which I now saw for the first time. All the sick were immediately landed and placed in a lodging which I hired for the purpose, and where they received every possible care from the medical officers. I hope that the influence of climate, the air of the land, and above all good fresh provisions, will shortly restore their exhausted strength, and I hope to put to sea again after a month's stay in this port.

We found here the English frigate, *President*, Captain Scott, bearing the flag of Rear-Admiral Ross, the commander-in-chief on the South American station, and several fine French whalers fishing on the coast of Chili. I have already seen some of the captains of these vessels; all tell me they are satisfied with the conduct of their crews."

We gather from the foregoing abstract of M. D'Urville's voyage that the French ships left the eastern entrance of Magellan Strait for the Strait of Le Maire on the 8th January, from whence they steered to the S.E., and passing east of Clarence Isle met the barrier of ice on the 22nd in 64° S., which they traced to New Orkney or Powell's Group in 61° S. Passing to the northward of these islands they were to the eastward of them in 62° S., on the 4th of February, where the icy barrier was again formed, and even locked in till the 8th; after which, they traced it east and west to the meridian of about 31° west of Greenwich, till the 15th of February, when finding it take a northerly direction towards the Sandwich Islands, they kept to the westward again, examining the Orkneys, which are between 60° S. and 61° S., and the eastern part of the South Shetland group, improving the charts of those islands. Another attempt was then made to get to the southward, failing in which, the vessels passed westward through Bransfield Strait, when some unknown land was explored. The terms of Capt. D'Urville's letter are vague enough as to the exact position of the newly discovered land in longitude, though not so in latitude. But we apprehend that as the *Astrolabe* examined the shores of the eastern islands of the Shetland group, she passed to the southward in their meridian, which is that of about 58° W. in which direction she would come to Trinity or Palmer's land, already laid down in the charts, although its shores are by no means accurately defined. There are, however, certain points of the south shore of Bransfield Strait laid down with precision in 1829, by Capt. Foster, in H.M.S. *Chanticleer*, on her way to Deception Island, where, it will be remembered, that lamented officer made a series of observations on the pendulum; remaining in its neighbourhood from the 5th of January to the 9th of March. Capt. Foster landed on Cape Possession on the southern side of the western entrance of Bransfield Strait, and deposited a written document there, naming the land "Prince William's land," after his late majesty William IV., which lay between the meridians of 60° and 63° W., in lat. 64° S., and on which he fixed the positions of various peaks, namely, Mount Parry, Mount Herschel, &c., and the coasts of which are tolerably connected. In the way of *newly discovered lands* then we must await the appear-

ance of Capt. D'Urville's charts for such details as may enable us to distinguish the unknown coasts he has explored, from those already laid down by Capt. Foster, R.N., and Capt. Biscoe; and with regard to the honor claimed by Capt. D'Urville, of his ships of war having been the first of any nation that has yet passed through Bransfield Strait, had it not been for the Chanticleer's voyage we might have conceded it to him; but as that vessel, entering the Strait from the westward, went to Deception Island, in 1829, under the command of Capt. Foster, she being a vessel of war, employed on a valuable scientific mission, as we have before mentioned, much as we may regret to deprive Capt. D'Urville even of that useless honor, how can we concede it with the fact before us, that the Chanticleer actually passed to the eastward through Bransfield Strait nine years before the Astrolabe and Zélée passed through it to the westward.

It is certainly a matter of congratulation for English seamen, although no one can look with unconcern at the contrast afforded by the sufferings of the French vessels, after being fifty-two days in the ice, that the Chanticleer was sixty-three days in it without having a single case of illness! This was attributed, by her surgeon, to the watchful care of her first Lieutenant, now Capt. H. T. Austen, R.N.

HURRICANES.—In our last we noticed the valuable and important labours of Col. Reid in his new work on the Law of Storms, one which we hope will be studied by our nautical readers as a distinct and most important branch of Navigation. As all discussion on the subject will assist in throwing light on it, we annex the following, which took place at the last meeting of the British Association.

Colonel Reid said he might mention a circumstance that occurred in the West Indies. Barbadoes is seventy miles eastward of St. Vincent's, and the trade-winds passed from one to the other. In 1831 the great storm passed between them at the rate of only seven miles an hour; the destructive force of the current was owing to its rotatory velocity, which might be a hundred miles an hour. He found, on investigating all other storms, that they moved onward at slow rates, so that it not unfrequently happened that a ship ran into the heart of a storm, by moving at greater speed, whereas if the crew had shortened sail, the storm would have gone on before them. He should now repeat, that ships' logs, instead of being the dry, uninteresting things they were usually considered, were often deeply interesting, as connected with the fate of our brave sailors who had foundered in storms. He had found recorded, for instance, in the log of the Harriet, the last signal made during a heavy storm by the brave old Admiral Troubridge.

Sir J. Herschel regarded it as a happy omen for the success of the meeting, that its proceedings should commence with one of the most enlightened communications he had ever heard. He congratulated that section, this country, and the whole world, on the prospect of having at length developed the real character of these terrible manifestations of the power of Him, whose word the storms obey. He need not dwell on the extreme advantage of knowing whether a man was in a storm, and how to get out of it: and one main point seemed to be simply to lie-to, and wait the event. The rotation of storms always in one direction was a certain indication that, on entering one, a seaman had better have the wind on one quarter than on the other.

The central point of the storm was the point of greatest danger, where the ship was thrown on her beam ends. A seaman ought to know whether he was going into or coming out of a storm; and supposing he were inclined to stay, he should at least know how to turn the ship's head.

A curious fact attending the rotatory course of storms, was the parabolic nature of the curve described. It was usually elliptical, and almost all storms were confined within a comparatively narrow compass. It was clear that a mariner might know in what direction the body of the storm proceeded; and that of itself should suffice to indicate not only the course in which he was lying, but also in what course he was proceeding. There was one consideration connected with the parabolic curve of storms, which always appeared to him to have considerable weight, and that was, whether the influence of the gulf-stream might not have something to do with it. Its general curve seemed to lie in one direction; and whether the great current arising from that enormous mass of heated air did not disturb the equilibrium between the two great currents of trade-winds, the lower current being properly the trade-wind, and the upper current the anti-trade, was a point of considerable interest, and one which it appeared to him ought to be taken into account in instituting any theory regarding storms. He further thought, that this view of the matter seemed to be confirmed by the remarkable fact that there were no storms at St. Helena. Col. Reid had stated that he had no theory on this subject. However, it was always desirable to theorise. A little theory was often of great use, because it set people thinking, and the endeavour to controvert one theory not unfrequently led to the development of another.

The trade-winds proceeded N.E. and S.E. in a direction towards the equator; the current then turned upwards, and descended in latitudes beyond the trade; hence, therefore, there were always two currents, the upper and the lower, running in contrary directions. In the S.E. trade, to the Atlantic, might be seen a constant, uniform, equable layer of clouds, in the space between these two winds. This was a calm between the wind rushing towards the equator; there becoming heated and ascending, returned, in its upper course, towards the pole. Now, let them suppose that some cause brought the opposing currents nearer to each other, and any sufficient object, such as a mountain, intervened, the two currents would begin to revolve; and this rotatory motion would have a tendency to produce a funnel-shaped depression, which might continue for some time after the producing cause had subsided. A familiar instance of this would be seen if a little hole were made in a tub, which would speedily cause the water to revolve rapidly, and become depressed towards the hole in the funnel shape which he had mentioned; and if the hole were suddenly stopped up, the motion would continue, but, after a time, not in the same direction, the currents would begin to mingle. Now something of this kind probably took place in the atmosphere, from some cause of sufficient magnitude to produce the effects which were witnessed.

In illustration of the time which the rotatory motion thus imparted might continue, he might mention that if a gun were fired which had been greased in the mouth, a beautiful and elegant wreath of vapour would arise after the discharge, which would expand as it rose, and

fluctuate to and fro, undulating with every breeze, but still preserving its annular appearance. Upon examining this ring carefully, every part of it would be found in a state of rapid rotation, from the centre outwards, so long as it existed. And he thought it was precisely the same thing with these storms, only the wreath was on a scale so minute as almost to admit of being handled. That water-spouts should deviate from the law of storms was to be expected. He supposed them to arise more from some local cause of disturbance, than from any great revolution in the currents of the atmosphere. Upon land they might be produced by local circumstances, such as a heated space of ground, which would force the current upwards: and he could imagine water-spouts revolving in either one direction or the other. With regard to Mr. Epsly's theory, that in a storm, the currents all pressed towards the centre, he conceived that in some conditions this would certainly be found erroneous; for it appeared difficult to suppose how the barometer could sink in that centre at which all the currents were heaped up. If currents had at all a tendency to revolve, that rotation must be greater in the inside of the circle than on the outside. The Hon. Bart. then alluded to the spots on the sun, &c., as noticed in our last more briefly than in this note.

Law Proceedings.

CLAUDE.—*Pilotage.*—To recover damages for injury to plaintiff's vessel from defendant, the pilot of an Indiaman. Vessel was tacking in long reach (Thames), among shipping—met Indiaman towing up by a tug which went in shore ahead of Claude wrongfully. Claude endeavoured to avoid her, but Indiaman ran foul of her and carried away bowsprit and jib-boom. Verdict given for plaintiff 16*l.* 8*s.*, the amount of damage.—*Newcastle.*

SPHEROID.—*Salvage.*—Spheroid, (254 tons,) from Berbice to London, with cargo value 75,000*l.*, came in contact with a foreign vessel and was dismasted. Anchored in Portland Bay—assistance of two smacks refused, but smacks requested to stay by vessel. Next morning assistance again tendered and refused. H. M. C. Cameleon attempted to take her to Weymouth unsuccessfully, when services of smacks were accepted—tender of 100 guineas refused. Sir John Nichol allotted 100 guineas to each smack.—*Admiralty Court, 26th May.*

JAMES.—*Salvage.*—James, from Berbice to London, got aground off Margate. H.M.R.C. Diamond, and two luggers hove her off. Sir John Nichol awarded 150*l.* to the salvors, twenty-five in number. *Admiralty Court, 26th May.*

MACDONALD, v. JOPLIN.—*Wages.*—Plaintiff Macdonald acted as mate of a vessel from Sicily to Liverpool. Day after her arrival, before cargo was discharged, applied to captain for permission to leave vessel, being refused, he left her, and next day went to Newcastle—mate never returned, and therefore absolutely deserted. Mr. Justice Coleridge considered this an "absolute desertion."—*Wages forfeited.*

MONARCH AND APOLLO.—Action by Directors of Commercial Steam Packet Company against General Steam Navigation Company, to recover compensation for total loss of Apollo steamer, alleged to have been occasioned by mismanagement of steamer Monarch, on 5th September, 1837. Damages to be settled by arbitration.

MARTHA.—*Salvage.*—Action by master, owners and crew of Blakely, of Liverpool, as salvors against proceeds of stores saved from Martha. Blakely lying at Macao, in September, unloading, Capt. Viner of Martha, arrived in his long-boat stating his vessel had been wrecked on Treton Island (Paracell's) in China sea—cargo worth 40,000*l.* Blakely, after discharging her cargo, expeditiously sailed for the wreck—found the island was a low bank of sand, surrounded by coral reefs. Martha lay on

her broadside—decks started and nearly full of water. At much risk 100 packages of merchandize, and some stores, were saved, with which Blakely returned to Macao, where they were sold for 2,731*l*. Loss sustained by salvors estimated at 1,340*l*. Sir John Nichol decreed that after deduction of expences on both sides, a moiety of property to salvors; half the moiety to owners of Blakely; half to master and crew,—master to have one fourth of the half, and mate 50*l*., latter also sharing with crew (twenty men).—*Admiralty Court, 21st July.*

STATEMENT OF THE PACKETS.

British Postage of a Single Letter to or from				PALMOUTH STATION.	Last Packets sailed.	Next Packets due.
Lon.	Falm.					
2s	6d	1s	7d	Lisbon	Every Saturday.	Iberia, Oct. 22
2	7	1	8	Madeira		
2	2	2	2	Spain		
2	6	1	11	Gibraltar	Every 2nd Sat.	—, Oct. 17
2	6	2	3	{ Malta, Greece, and Corfu.		
2	7	1	8	{ Egypt & India ...	Every 4th Sat.	Tagus, Oct. 1
2	7	1	8	Madeira		
3	6	2	7	Brazil	1st Tuesday in each Month.	H.M.B. Lapwing, Oct. 5
2	2	1	8	America		
2	2	1	8	America	1st Wed. ditto.	H.M.B. Hope, Oct. 6
2	2	1	3	{ Jamaica, Leeward Islands	1st Day in every Month.	Lord Melville, Oct. 3
3	1	2	1	La Guayra		
3	1	2	1	Mexico & Havanna	—15th ditto.....	H.M.B. Penguin, Oct. 17
2	2	1	3	{ Jamaica, Leeward Islands	—15th ditto.....	H.M.B. Pandora, Oct. 17
3	1	2	1	Carthage		

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

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

NEW BOOKS.

A METHOD OF CONCENTRATING THE FIRE OF A BROADSIDE OF A SHIP-OF-WAR, &c. By *W. Kennish, Carpenter, R.N. Bradley, Great-Titchfield-Street, 1837.*

The power of concentrating the fire of a ship's broadside is one of those evolutions in Naval Gunnery of such vast importance, that too much attention cannot be paid to it. It appears to be of comparatively modern date, as Mr. Kennish not only here gives us the method by which he effects it, but also the Admiralty inquiry of 1829, which led him to consider the subject, and to produce the work before us. He has performed his task in an elaborate, and we will add, a creditable and seaman-like manner, illustrating his process, step by step, with drawings on a large scale. No naval officer should be uninformed on this subject, and Mr. Kennish's work well deserves the patronage of the *service* in general. We recommend our naval readers to consult it well.

IDEAS AS TO THE EFFECT OF HEAVY ORDNANCE DIRECTED AGAINST AND APPLIED BY SHIPS-OF-WAR, &c. *By Capt. T. F. Simmons, R.A. Egerton's Military Library, London.*

This is another of those normal works which the naval officer will do well to treasure in his mind. The employment of the heavy ordnance, now adopted in nearly all our men-of-war, renders it imperative on officers to make themselves well acquainted with the principles on which they are used with best effect. The subject of concentrating the broadside is also treated here by Capt. Simmons, and, we have the pleasure of saying, in a masterly manner. Indeed we are much inclined to approve of his arcs let into the deck; and there is an advantage in the truck-stop proposed by our artillery officer that will be evident to a seaman's eye, namely, that as long as the trucks fairly butt against it, it is not indispensable that the axis of the gun should exactly cross the midship-line of the port, a condition which is absolutely necessary with other methods. But we recommend our naval readers to judge for themselves, and we can assure them that they will find the Captain of Artillery a very good naval gunner, and provided with a store of very useful information.

THE METHOD FOR RAISING SUNKEN VESSELS, AS USUALLY ADOPTED AT HER MAJESTY'S DOCKS, EXPLAINED, &c. *By F. W. Sadler. R.N., Assistant-Master-Attendant. Trives, Portsea.*

The object of this work is sufficiently explained in the above title, and it remains for us to say, that it has been occasioned by the necessary operations in raising Her Majesty's schooner, Pincher.* Mr. Sadler, who so ably and successfully conducted those operations, has judged rightly in considering that an account of them would be acceptable to rising naval officers, and we will venture to say he will be secretly, if not publicly, thanked by many who will gladly turn them to account in the hour of need. The process is well described, and illustrated with the necessary drawings; and published as it is, with the sanction of the Lords of the Admiralty, we cordially recommend it to the attention of our naval readers.

THE PHILOSOPHY OF LANGUAGE, CONTAINING PRACTICAL RULES FOR ACQUIRING A KNOWLEDGE OF ENGLISH GRAMMAR, &c. *By William Cramp. London: Relfe and Fletcher, Cornhill.*

We have little room to spare for dissertation on grammar, but we may briefly state the object of the author to be that of rendering its principles easy, and the rules of syntax practically useful. In following up his object, that of *informing* his readers on this important subject, he purposely and properly avails himself of the blunders of literary men, as he says, from a principle of justice; and illustrates the philosophy of language by some well chosen examples, bearing on all the rules of grammar. The illustration of the parts of speech by a frontispiece is original and clever, and the work is one which may be read with advantage and satisfaction by those who would write with perspicuity and vigour.

* Since sold out of the Navy.

GEOLOGY, AS A SCIENCE, APPLIED TO THE RECLAMATION OF LAND FROM THE SEA, &c. *By John Rooke.* London: Ridgway, Piccadilly.

There is a philosophy, doubtless, in resorting to geological principles in the construction of railways, and in the mode of reclaiming land from the sea, which it is the object of Mr. Rooke to point out. He considers the whole of this interesting subject after his own fashion, and we are bound to say that it is a most agreeable one. The work is particularly addressed to the geologist and practical engineer.

CURIOSITIES OF LITERATURE. *By J. D'Israeli, Esq., illustrated by Bolton Corney, Esq., &c.* London: R. Bentley, Burlington Street.

These *illustrations* should be in the possession of those who have treasured up in their libraries the popular works of Mr. D'Israeli, to whom, we apprehend, literature will stand less indebted even for *curiosities*, than to the gentleman who has been at the pains to *illustrate* them. We certainly were not aware that our old Nautical Chronicler, Purchas, was to be considered a *voyager*, having always held him in the light only of a *collector* of voyages; but our conclusion might have been somewhat shaken by the popular Mr. D'Israeli, had not the *illustrator* of his *curiosities* been at hand to quiet our misgivings, by assuring us we were quite right. The bane, we said at once, should never be without the antidote. The warmest admirers of the "*curiosities*," with the assistance of these illustrations, will be enabled to perceive their *real* value, and the new beauties they will find in them by their means, will afford an additional treat. A sample of the "write-with-ease-school" *vale!*

THE BARQUE MORAYSHIRE OF LONDON. *Captain Lamotte, entering the Bay of Gibraltar.*

A neat and well executed aquatint drawing of this vessel has just been published by Huggins. The detail of the picture is more pleasing than the vessel herself: the sea is remarkably well managed.

THE BRITISH QUEEN, of 1,062 tons, and 500 horse-power. *Lieut. Richard Roberts, R.N., Commander.*

This is, without doubt, one of the happiest efforts of our celebrated friend Huggins. The vessel is represented in her *sailing* trim, and supposed to be starting on her first voyage. We will venture to say this print will win golden opinions of her which we have little doubt she is destined hereafter to preserve.

TOPOGRAPHICAL DRAWINGS.—Mr. John Bate, we find, has been applying his ruling machine to other purposes than the copying of coins and bas-reliefs. He aims at producing topographical drawing, and his first attempt has been made on a part of the Ordnance Survey of North Wales, in which he has succeeded very fairly. There is a management yet required of the light on the heights, which experience will produce, and from the proof before us we have little doubt of this valuable method being rendered capable of considerable service in correct topographical representations.

TABLE XXXVII.

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

1 Vienna Foot = 1·0371023327 English Feet.
1 English Foot = 0·9642250031 Vienna Feet.

Vienna or English feet.	English feet, and Dec. parts.	Vienna feet, and Dec. parts.	Vienna or English feet.	English feet, and Dec. parts.	Vienna feet, and Dec. parts.	Vienna or English feet.	English feet, and Dec. parts.	Vienna feet, and Dec. parts.
1	1·037	0·964	40	41·484	38·569	79	81·931	76·174
2	2·074	1·928	41	42·521	39·533	80	82·968	77·138
3	3·111	2·893	42	43·558	40·497	81	84·005	78·102
4	4·148	3·857	43	44·595	41·462	82	85·042	79·066
5	5·186	4·821	44	45·632	42·426	83	86·079	80·031
6	6·223	5·785	45	46·670	43·390	84	87·117	80·995
7	7·260	6·750	46	47·707	44·354	85	88·154	81·959
8	8·297	7·714	47	48·744	45·319	86	89·191	82·923
9	9·334	8·678	48	49·781	46·283	87	90·228	83·888
10	10·371	9·642	49	50·818	47·247	88	91·265	84·852
11	11·408	10·606	50	51·855	48·211	89	92·302	85·816
12	12·445	11·571	51	52·892	49·175	90	93·339	86·780
13	13·482	12·545	52	53·929	50·140	91	94·376	87·744
14	14·519	13·499	53	54·966	51·104	92	95·413	88·709
15	15·557	14·463	54	56·004	52·068	93	96·450	89·673
16	16·594	15·428	55	57·041	53·032	94	97·488	90·637
17	17·631	16·392	56	58·078	53·997	95	98·525	91·601
18	18·668	17·356	57	59·115	54·961	96	99·562	92·566
19	19·705	18·320	58	60·152	55·925	97	100·599	93·530
20	20·742	19·285	59	61·189	56·889	98	101·636	94·494
21	21·779	20·249	60	62·226	57·854	99	102·673	95·458
22	22·816	21·213	61	63·263	58·818	100	103·710	96·423
23	23·853	22·177	62	64·300	59·782	150	155·565	144·634
24	24·890	23·141	63	65·337	60·746	200	207·420	192·845
25	25·928	24·106	64	66·375	61·710	250	259·276	241·056
26	26·965	25·070	65	67·412	62·675	300	311·131	289·268
27	28·002	26·034	66	68·449	63·639	350	362·986	337·479
28	29·039	26·998	67	69·486	64·603	400	414·841	385·690
29	30·076	27·963	68	70·523	65·567	450	466·696	433·901
30	31·113	28·927	69	71·560	66·532	500	518·551	482·113
31	32·150	29·891	70	72·597	67·496	550	570·406	530·324
32	33·187	30·855	71	73·634	68·460	600	622·261	578·535
33	34·224	31·819	72	74·671	69·424	650	674·116	626·746
34	35·261	32·784	73	75·708	70·388	700	725·971	674·958
35	36·299	33·748	74	76·746	71·353	750	777·827	723·169
36	37·336	34·712	75	77·783	72·317	800	829·682	771·380
37	38·373	35·676	76	78·820	73·281	850	881·537	819·591
38	39·410	36·641	77	79·857	74·245	1000	1037·102	964·225
39	40·447	37·605	78	80·894	75·210	2000	2074·204	1928·450

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

LIEUTENANTS,—G. G. Otway, H. Dumaresq.

APPOINTMENTS.

ACTÆON, 26,—*Mate*, C. W. Bonham, W. Deane; *Midshipman*, E. Lambert, H. V. Polwett. ASCENSION ISLAND,—*Surgeon*, W. T. Ballantyne. ASIA, 84,—*Lieutenant*, R. A. Oliver. AFRICAN, 1,—*Lieutenant*, T. S. Coppinger. BARHAM, 50,—*Lieut.* G. Weston, F. Guyon. BRITANNIA, 120,—*Assistant-Surgeons*, W. Trail, J. Walland, G. D. Gordon; *Master*, J. Yule. BUZZARD, 3,—*Mate*, W. Pollard. CARYSFORT, 26,—*Lieut.*, C. Brown. CASTOR, 36,—*Lieuts.*, C. F. Shadwell, C. F. Brown. COAST-GUARD,—*Lieutenants*, W. G. Pasco, C. R. Watson, W. Vicary, W. Seaward; *Commanders*, E. W. Pilkington, G. S. Dyer, T. Greene. COMUS, 18,—*Master*, J. W. Burney. CORNWALLIS, 74,—*Lieuts.*, C. Powell, A. C. May, G. H. Seymour, C. J. Balfour, G. W. Winlow, G. G. Phillips, J. Fellowes; *Naval Instructor*, G. Jackson. CUCKOO, St. V.—*Master*, W. Wadling; *Second-Master*, J. Dillon. DONEGAL, 78,—*Lieutenant*, F. Denison; *Mate*, H. Giles. EDINBURGH, 74,—*Clerk*, A. Arlington, R. A. Godson. EXCELLENT,—*Mate*, J. Hancock; *Lieutenant*, J. Rawstorne; *Purser*, W. Tuckfield. FAIR ROSAMOND, 2,—*Mate*, E. J. Voules. FORRESTER, 3,—*Lieut.-Commander*, F. G. Bond. GANGES, 84,—*Captain*, B. Reynolds, C. B. *Lieutenants*, J. FitzJames, W. Johnstone, G. Goldfinch, J. A. Bainbridge, F. A. Ellis, N. Korway; *Master*, C. F. Burney; *Second-Master*, P. Wellington; *Surgeon*, W. L. Kidd, M. D.; *Assist.-Surg R.* J. Scott, W. Bateman; *Purser*, W. Tuckfield. GRECIAN, 16,—*Vol.*, M. Faulkner, *Ck.*, E. J. Bennet. HASTINGS, 74,—*Mate*, R. Moore; *Mid.*, G. C. Kerr; *Mate*, H. J. Austen; *Clerk*, J. Gowan. HERALD, 28,—*Lieut.*, H. Coryton. JASEUR, *Lieutenant*, W. C. Aldham. MAGNIFICENT, 74,—*Surgeon*, J. Park. MEDEA, 4,—*Master*, J. Cater; *Surgeon*, J. Russell. MELVILLE, 74,—*Lieutenants*, E. Tatham, H. J. Shute; *Master*, T. Huss. MODESTE, 18,—*Lieutenant*, J. C. Bingham; *Mid.*, R. J. Wood. NIAGARA, 20,—*Lieutenant*, J. Elmsley. NORTHSTAR, 28,—*Lieut.*, G. C. Randolph; *Clerk*, A. W. Cummings. PANTALOON, 10,—*Clerk*, R. Cheeseman. PEMBROKE, 74,—*Master*, P. G. Nettleton; *Naval Instr.*, J. Mickard, PETEREL,—*Act.-Master*, R. Thomas; *Assist.-Surgeon*, J. Yeoman; *Assist.-Master*, W. Grindlay. PILOT, 16,—*Mate*, J. Franklin, C. L. Norman. PRESIDENT, 52,—*Lieutenant*, A. G. Villiers. PRINCESS CHARLOTTE, 104,—*Lieutenant*, J. Tulford, R. W. Suckling. RACER, 16,—*Purser*, J. E. Kaye; *Mid.*, G. F. Day; *Vol.*, J. C. Byng; *Clerk*, R. C. Hogg; *Mate*, R. J. Wadilove; *Mid.*, J. H. Disbrow. RODNEY, 92,—*Lieutenants*, Hon. C. Elliott, W. F. Burnett. ROLLA, 10,—*Surgeon*, J. Dunn; *Master-Assistant*, J. Tiddy. ROSE, 18,—*Clerk*, J. Biggs; *Lieutenant*, J. Clavall; *Mid.*, A. C. Hobert. ROVER, 18,—*Lieutenant*, B. H. Bunce; *Master*, E. P. Cole; *Purser*, R. T. Reep; *Surgeon*, J. Booth; *Lieut.*, J. H. Murray. ROYAL ADELAIDE, 104,—*Mate*, H. McKinsman, A. Crawly, H. H. Pickard. STAG, 46,—*Lieutenant*, J. Peirse. SULPHUR, 8,—*Lieutenant*, W. B. Money Penny. TALAVERA, 74,—*Mate*, J. Paterson. TYNE, 28,—*Lieutenant*, F. E. Johnston. VANGUARD, 80,—*Mate*, J. B. Ballard. VICTORY, 104,—*Assistant-Master*, H. Webb. WASP, 16,—*Mate*, M'Guire. WELLESLEY, 74,—*Lieutenant*, A. Paul.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ACTÆON, 26, Captain Robert Russell, 9th, Oct. sailed from Portsmouth for Rio Janeiro. APOLLO, 46, 26th September, sailed from Portsmouth for Cork and Ceylon. ATHOLL, 28, Mr. Bellamy, 24th September, sailed from Plymouth for Quebec. BOADICEA, 46, 30th September, arrived at Plymouth, from North Coast of Spain. BUZZARD, 3, 8th Oct. sailed from Plymouth for Africa and West Indies. CLEOPATRA, 26, Hon. Captain G. Grey, 23rd September, arrived at Portsmouth from South America, 2nd Oct. sailed for Sheerness, 3rd. arrived at the Nore, 8th, sailed from Sheerness for Russia. CLIO, 16, Captain Richardson, 23rd September, arrived at Portsmouth, from Mediterranean, 2nd Oct. paid off. DAPHNE, 18, 22 Sep. at Portsmouth. EDINBURGH, 74, Captain W. Henderson, 21 Oct. sailed for N. America. GANGES, 84, 18th October, commissioned at Portsmouth, by Lieutenant James FitzJames of the Excellent, for Captain Barryington Reynolds, C.B. HASTINGS, 74, Captain H. Shiffner, 3rd Oct. sailed for Malta with the Queen Dowager on board. HERCULES, 74, Captain T. T. Nicholas, C.B. 21st September, left Cork for Gibraltar. JUPITER, 38, Mr. Easto, 4th, Oct. sailed from Plymouth for Cork, 13th, left Cork for Ceylon. LIGHTNING, St. V. Lieut.-Com. T. Shambler, 5th Oct. sailed from Sheerness for Russia, &c. LILY, 16, Commander J. Reeves, 14th Oct. arrived at

Plymouth from Ascension. *MAGICIENNE*, 24, 27th September, paid off at Portsmouth. *MEGGERA*, St. V. 11th Oct. arrived at Plymouth from Malta. *METEOR*, St. V. Commander D. Hastings, 26th September, arrived at Portsmouth from Plymouth, 3rd Oct. sailed in company with Hastings, with the suite of the Queen Dowager, 4th, arrived at Falmouth. *MODESTE*, 18, Commander G. Eyres, 30th September, arrived at Plymouth from N. coast of Spain. *ORESTES*, 18, Commander R. J. Hambly, 9th Oct. sailed for Rio Janeiro. *PANTALOON*, 10, Lieutenant J. McDonnell, 30th September, sailed for San Sabastian. *PILOT*, 16, Commander G. Ramsey, 17th Oct. Plymouth. *PIQUE*, 36, Captain E. Boxer, 23rd September, left Sheerness for Portsmouth, 25th arrived, 12th Oct. sailed for North America and West Indies, 14th at Plymouth. *PLUTO*, 1, Lieutenant Lunn, 25th September arrived at Portsmouth from Chatham, and sailed for Plymouth, 4th Oct. sailed, from Plymouth for West Indies. *RACER*, 16, Oct. commissioned at Portsmouth by Commander George Byng. *RALEIGH*, 18, Captain M. Quin, 15th Oct. arrived at Portsmouth, from East Indies. *ROLLA*, 10, 25th September, commissioned at Plymouth, by Lieutenant Charles Hall. *ROSE*, 18, 14th Oct. arrived at Portsmouth from Sheerness. *ZEBRA*, 16, Commander R. McCrea, 14th Oct. arrived at Portsmouth from the East Indies, 17th, sailed for Chatham.

ABROAD.

ALBAN, St. V. Lieutenant Tinling, 18, August, put back to Jamaica in distress. *ARROW*, 10, at Demerara, from Barbados. *ASIA*, 84, Captain W. Fisher, 30th August, sailed from Malta for the Dardanelles, 12th September, at Constantinople, 16th, at Scio. *BARHAM*, 50, Captain A. L. Corry, 6th September, sailed from Malta, 16th, at Scio. *BASILISK*, 6, Lieutenant G. G. McDonnell, 23rd June, at Valparaiso. *BEACON*, Lieutenant T. Graves, 17th September, Gulf of Cos. *BELLEROPHON*, 80, Captain Jackson, 16th September at Scio. *BLAZER*, St. V. 6th September, arrived at Malta from Gibraltar. *BUFFALO*, Master J. Wood, 19th May, sailed from the Bay of Islands New Zealand for England. *CASTOR*, 36, Captain E. Collier, September, at Venice. *CHAMPION*, 18, Commander G. S. F. King, 18th July, arrived at Jamaica from Carthagena, 14th September, arrived at Havannah from Tampico. *COLUMBINE*, 16, Commander T. Henderson, 4th Oct. arrived at Madeira, 8th, sailed for Bahia. *COMUS*, 18, Commander S. P. Carey, 4th August, sailed from Honduras for Jamaica. *CONFIANCE*, 2, Lieutenant Stopford, 1st September, at Malta from Palermo, 20th sailed for Naples, 26th, at Malta. *CONWAY*, 28, Captain Bethune, 7th June, left Hobart's Town for Sydney. *CORNWALLIS*, 74, Captain Sir R. Grant, 7th September, at Halifax. *CROCODILE*, 28, Captain J. Polkinghorne, 11th September, at St. John's from Halifax. *DEE*, St. V. Commander Sherer, 12th August, at Port Royal, 18th, sailed for St. Thomas, 1st September, at Jamaica. *DIDO*, 18, Captain S. Davies, C.B., 26th September, at Malta. *DONEGAL*, 78, Captain G. Drake, 26th September, Tagus. *ESPOIR*, 10, 22nd September, in the Douro. *FIREFLY*, St. V. Lieutenant T. Pearse, 24th August, sailed from Malta for Alexandria, 29th, arrived and sailed for Beirut, 16th September, at Malta from Beirut. *FLAMER*, St. V. Lieutenant J. Potbury, 12th August at Port Royal. *FORRESTER*, 3, 21st August, Simon's Bay. *GORGON*, St. V. Commander Dacres, 14th September, arrived at Passages from Plymouth, in 54 hours. *HARLEQUIN*, 16, Commander J. E. Erskine, 11th September, arrived at Malta from Gibraltar, 22nd, sailed for Sicily. *HARPY*, 10, 9th August, arrived at Bermuda from Antigua. *HARRIER*, 18, Commander H. H. Carew, 23rd July at Callao, *HAZARD*, 18, Commander J. Wilkinson, 26th August, arrived at Zante from Catalonia. *HERALD*, 18, Captain Nias, 8th, September, at Madeira. *HERCULES*, 74, Commander, J. T. Nicholas, 1st Oct. arrived at Gibraltar from Cork. *HORNET*, 6, Lieutenant Baillie, 10th July, sailed for Chagres, 8th September at Jamaica. *HYACINTH*, 18, Commander Warren, 21st June, at Singapore. *IMOCENE*, 28, Captain H. W. Bruce, 23rd July, at Callao. *INCONSTANT*, 36, Captain D. Pring, 24th, sailed from Quebec for Bermuda. *LARNE*, 18, Com. P. Blake, 21st May, Straits of Malacca. *MAGNIFICENT*, 74, 10th August, lying at Port Royal not repairable. *MAGPIE*, 4, St. V., 17th Sept. Gulf of Cos. *MEDEA*, 4, St. V., 24th August, sailed from Quebec for Halifax 6th Sept., and returned to Quebec. *MEGGERA*, St. V., Lieut. Goldsmith, 3rd Sept., Malta, from Ionian-Islands; 26th arrived at Gibraltar. *MELVILLE*, 74, Capt. Hon. R. Dundas, 2nd August sailed from Simon's Bay; 18th arrived at St. Helena; 22nd sailed, for Ascension. *MINDEN*, 74, Captain A. R. Sharpe, 26th August, sailed from Malta for the Dardanelles; 12th Sept., at Constantinople, 16th, at Scio. *NAUTILUS*, 10, 21st August, at Simon's Bay. *NIMROD*, 20, Com. J. Frazer, 18th August, at Havana

from Tampico; 8th September, at Jamaica. PEARL, 20, Capt. Lord Clarence Paget, 21st August, at Miramichi. PEMBROKE, 74, Captain F. Moresby, 26th July sailed from Malta for the Dardanelles; 12th Sept., at Constantinople; 16th, at Scio. PICKLE, Lieutenant P. Hart, 13th August, sailed from Jamaica on cruise. PRESIDENT, 52, Flag of Rear-Admiral Ross; 23rd July, at Valparaiso. PRINCESS CHARLOTTE, 104, Flag of Admiral Hon. Sir R. Stopford, 30th August, sailed from Malta for the Dardanelles; 12th Sept., at Constantinople; 16th, Scio. PYLADES, 18, Capt. F. L. Castles, 11th Sept., at Ascension. RALEIGH, 18, Capt. M. Quin, 21st Aug., arrived at St. Helena from India; 23rd, sailed for England. RATTLESNAKE, 28, Commander W. Hobson, 10th June, at Bengal from Madras. RHADAMANTHUS, St. V., Commander A. Wakefield, 5th September, arrived off the Dardanelles, with despatches; 21st, arrived at Malta. RINGDOVE, 16, Commander Captain S. Nixon, 22nd August, sailed from Jamaica for Port-au-Prince; 1st Sept., arrived at Jamaica. RODNEY, 92, Captain H. Parker, 26th August, sailed from Malta for the Dardanelles; 12th Sept., Constantinople, 16th, Scio. RUSSELL, 74, Capt. W. H. Dillon, 26th Sept., in the Tagus. SAMARANG, 28, Captain W. Broughton, 15th July, sailed from Rio for Valparaiso. SAPPHO, 16, 4th August, at Belize, with a prize, 200 or 300 slaves. SATELLITE, 18, Commander J. Robb, 12th August, arrived at Jamaica from Carthage; 23rd, sailed for Carthage; 8th Sept., at Jamaica. SCORPION, 10, Lieut. Com. C. Gayton, 26th Sept., in the Tagus. SERPENT, 16, Commander R. L. Warren, 12th August, sailed from Jamaica for Cuba; 17th, arrived at Jamaica; 8th September, sailed for Cuba. SKIPJACK, 5, Lieutenant J. Robinson, 21st Aug., arrived at St. Andrew's with an American schooner found trespassing on fishing ground. SPARROW, 10, 30th July, sailed from Rio for Falkland Islands. SULPHUR, Commander E. Belcher, 8th July, refitting at Callao. TALAVERA, 74, Captain W. Mends, 29th August, sailed from Malta for Athens. TALBOT, 28, 27th July, arrived at Malta; 8th August, sailed for Smyrna; 16th Sept., at Scio. TARTARUS, St. V., 1st Sept., at Jamaica from Barbados. TERMAGANT, 10, 1st Sept., at Ascension. TRIBUNE, 24, Captain Tomkinson, 26th Sept., in the Tagus; 5th October, sailed from Lisbon. TRINCULO, 16, Com. H. E. Coffin, 22nd Sept., Cadiz. TYNE, 28, Capt. T. Townsend, 16th September, Scio. VANGUARD, 80, Captain Sir T. Fellowes, 30th August, sailed from Malta for Dardanelles, 16th September, Scio. VESTAL, 26, 24th August, sailed for Quebec for Bermuda. VIPER, 6, Lieutenant-Commander, W. Winniett, 22th August, St. Helena; 28th, sailed for Ascension; 1st September, at Ascension. VOLCANO, St. V.; 6th Sept., sailed from Malta for Ionian Islands; 28th, left Gibraltar for Malta. WANDERER, 16, Commander Bushby, 12th July, sailed from Jamaica for Nassau; 8th Sept., at Jamaica. WASP, 16, Lieut. Crozier, 30th August, sailed from Malta for Dardanelles; 17th Sept., Scio; 23rd, Malta. WELLESLEY, 74, Flag Rear-Admiral Sir F. Maitland, 24th June, arrived at Singapore from Penang. WOLF, 8, Captain E. Stanley, 21st June, at Singapore. WOLVERINE, 16, Commander Hon. E. Howard, 31st August, arrived at Malta; 5th Sept., sailed; 16th, at Scio.

Births.

At Southend, Plymouth, on the 2nd October, the lady of Captain B. Moreton Festing, R.N. of a daughter.

At Wells, Norfolk, on the 1st October, the lady of Lieut. G. F. Westbrook, R.N., of a son.

Marriages.

At St. George's Hanover-square, Oct. 4th, Alfred William Cleverly, Esq. of Kilworth, Cork, to Amelia Bennet, youngest daughter of the late Captain Jennings, R.N.

At Bath, on the 11th. October, Lieut. William E. Amiel, R.N., to Margaret Anne, third daughter of the late Rev. W. Morgan, D.D. of Aston Clinton, Bucks.

At Kingston church, by the Rev. J. V. Stewart, Commander Henry J. Worth, of her Majesty's ship Hastings, to Charlotte Augusta, daughter of Captain Searle, C.B. of her Majesty's ship Victory.

Deaths.

On the 19th September, at Quebec, Mr. James Miller, Mate of H.M.S. Malabar, (third son of John Miller, Esq., St. Thomas Street,) aged 23 years.

On the 15th October, at his residence, Middlesex-place, New-road, London, W Browne, Esq. aged 76, many years Master-Attendant at the several dock-yards of Portsmouth, Plymouth, and Sheerness.

At Portsmouth, on the 29th. Sept., Comfander Wing, R.N., of Upper Fitzroy Street, Fitzroy-square.

On the 28th Sept., at Bayswater, London, Dr. R. M'Kinnal, R.N.

In the Royal Hospital Haslar, Mr. Gordon, late mate of H.M. steam vessel Meteor, aged 26 years.

At Tunbridge Wells, on the 4th of October, after five days' illness, Vice-Admiral Sir Tremayne Rodd, K.C.B., sincerely beloved and esteemed by all who knew him.

At Plymouth, on October 2nd., Mary Ann, relict of the late Lieut. Burnett, R.N. aged 38 years.

Lately on the East India Station, Lieutenant John Ramsay, of the Favorite sloop, of war.

On the Coast of Africa, recently, Mr. W. Hood, Purser, of H.M.S. *Ætna*.

Lately, on board H.M.S. Favorite, Mr. Henry Williams, Surgeon of that ship.

METEOROLOGICAL REGISTER,

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

SEPTEMBER, 1838.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	F.	29.82	29.82	47	57	41	60	S.W.	N.W.	1	4	Of.	Bc.
22	S.	29.96	29.98	46	60	39	62	S.W.	S.	1	2	BL	Bc.
23	Su.	30.01	29.99	57	65	46	66	S.	S.	3	3	Bcp. 2)	Bc. 3)
24	M.	29.91	29.81	54	53	48	57	N.E.	S.E.	1	2	Ogr. 2)	Ogr. 3)
25	Tu.	29.81	29.83	50	55	49	56	S.W.	S.	1	1	Og.	Ogr. 3)
26	W.	29.96	29.96	49	59	44	60	N.	N.E.	1	1	Og.	Bcm.
27	Th.	29.85	29.85	51	53	48	53	N.E.	N.E.	1	1	Ogr. 2)	Or. 3)
28	F.	29.96	30.00	46	58	42	60	N.E.	N.E.	1	1	Bfm.	Bm.
29	S.	30.01	30.03	55	59	46	61	N.E.	N.E.	1	2	O.	Od. 3)
30	Su.	30.19	30.23	58	60	56	62	N.	N.	1	2	Otw.	Bcfr.

SEPTEMBER—Mean height of the Barometer = 29.992 inches; Mean temperature = 58.9 degrees; Depth of Rain fallen = 2.65 inches.

OCTOBER, 1838.

1	M.	30.32	30.31	51	55	48	56	N.	N.	3	4	Ofl. (2)	O.
2	Tu.	30.35	30.35	53	61	51	62	N.E.	N.E.	4	4	O.	Bc.
3	W.	30.40	30.40	52	58	47	60	N.E.	N.E.	5	5	B.	Bc.
4	Th.	30.38	30.36	49	57	43	59	N.E.	N.E.	3	4	B.	Bc.
5	F.	30.34	30.34	48	54	42	56	N.E.	N.E.	2	2	O.	Bc.
6	S.	30.36	30.36	50	53	46	55	N.E.	N.E.	2	2	O.	Bc.
7	Su.	30.36	30.35	51	55	47	56	N.E.	N.E.	2	2	O.	Bc.
8	M.	30.34	30.32	50	54	48	57	N.	N.	3	4	Bcp. (2)	O.
9	Tu.	30.34	30.30	50	56	45	58	N.	N.	3	4	O.	O.
10	W.	30.21	30.11	51	52	49	52	N.E.	N.E.	2	2	O.	Bc.
11	Th.	30.00	29.80	52	58	49	59	N.W.	N.W.	3	4	O.	Og.
12	F.	29.62	29.64	43	45	42	49	S.W.	W.	3	4	O.	Bc.
13	S.	29.72	29.76	38	39	30	42	N.W.	N.W.	6	6	Obc.	Obcpr. 3)
14	Su.	29.89	29.70	39	47	29	53	N.W.	N.W.	4	6	Bc.	Ocpa. 3)
15	M.	29.55	29.63	52	53	46	58	S.W.	S.W.	5	6	God. 2)	God. 3)
16	Tu.	29.60	29.54	56	59	51	61	W.	W.	5	6	Obc.	God. 3)
17	W.	29.28	29.37	53	58	51	60	S.W.	S.W.	6	7	Go.	God. 4)
18	Th.	30.03	30.01	43	53	38	54	S.W.	S.W.	2	7	Obcp. (1)	Obc.
19	F.	29.90	30.00	57	55	50	58	W.	N.W.	3	4	B.	God. 3) (4)
20	S.	30.10	30.14	57	63	50	64	S.W.	S.W.	5	6	Bcm.	Bcm.
												Od. (4)	Obc.

Note.—The mornings of the 13th and 14th of October were very frosty: the afternoon of the 13th was snowy.

Errata in May, 1838.—Minimum thermometer on the 19th day, for 25 degrees read 35 degrees.

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

ORIGINAL PAPERS.

DECEMBER, 1838.

NOTES IN THE INDIAN SEAS.—*Hydrography*.—By *Commander M. Quin, H.M.S. Raleigh*.

Sand Bank in Straits of Malacca.—15th January, 1837.—Lat. $2^{\circ} 10'$ N., long. $101^{\circ} 54'$ E., $3\frac{3}{4}$ fathoms, Cape Rachado, N. $\frac{3}{4}$ W., Peak Mount Ophir, E.N.E., north end of Pulo Roupat, west; south end S.S.W. $\frac{3}{4}$ W. At 1h. 30m. P.M. while standing N. by W. from Pulo Roupat, had no bottom with twenty fathoms of line, next cast had five fathoms; up helm, and stood to N.E., shoaled water to $4\frac{1}{4}$ fathoms, anchored with the stream, sent three boats to sound, and the least water found, was $3\frac{3}{4}$ fathoms: 2h. 30m. weighed and swept to the S.S.E.; gigs ahead sounding; deepened our water gradually to 11, 14, 16, and 20 fathoms; then hauled up to N.E. This shoal appears to be $1\frac{1}{2}$ miles in length, S.S.E. and N.N.W., and is probably the shoal bank marked "doubtful" on the chart of the Straits of Malacca, about twenty miles to the S.E. of the bearings marked above.

Straits of Siak.—19th January, 1837.—Bookit Battoo is situated on a river, on the western side of Siak Strait; and is built on piles, being the principal station of the war proas of the Rajah (the people call him Sultan) of Siak; seventeen were anchored in the river ready for sea, when the Raleigh anchored abreast of it, in $12\frac{1}{2}$ fathoms, bearings—Bookit Battoo W.S.W., Tanjong Jattee N. by W. $\frac{1}{2}$ W., Onjong Maroomboong N.W. $\frac{3}{4}$ W. N.B. Bookit Battoo, and vessels in its river, might be easily destroyed by a sloop-of-war, anchoring with springs, the depth of water permitting her to anchor, within musket shot—no necessity to send boats away.

Entrance to Straits of Siak.—23rd January, 1837.—Mud Banks. There are many mud banks, which in the N.E. monsoons are said to shift; very heavy swells and strong winds make it difficult to get out from the Siak Strait into Straits of Malacca; the Raleigh had three days anxious work to accomplish it.

Straits of Callam.—9th February, 1837.—A sure passage for sloops-of-war and small frigates diffident of passing between the Arroas, and the $2\frac{1}{2}$ fathom bank; but a boat on either bow sounding and a stream anchor ready are necessary precautions:—In tiding through in the Raleigh, we only kept royals and top-gallant sails set, with fore and aft sails (the other square sails furled) for jungle,

and trees on either side, are so high as to render them inoperative, unless with a leading wind.

Salengore.—10th February, 1837.—Anchored in six fathoms; Salengore Hill E. by N., two Arrzas S. by E.

Bruas River, Perah Coast.—13th February, 1837.—Anchored off it, in five fathoms, entrance of Bruas E. $\frac{1}{4}$ S. Pulo Tallong S.E. by S., south end of Dinding S. $\frac{1}{2}$ W.; much difficulty in getting to the entrance, from its being surrounded by numerous mud flats, which shift in strong S.W. winds; however when fairly entered, there is plenty of water for gun boats; but the river being narrow, with many elbows, and also obstructed by numbers of trees which have at different times fallen into it, after heavy rains had dislodged them, makes it difficult to get up in boats with masts stepped to the village (a temporary one) where the ex-king of Jurdah lived, which is about three miles up. Large tracts of mud had been left uncovered by the receding tide, and flocks of gulls and other birds were feeding on the worms and small fish. Vast numbers of little amphibious creatures were running about in the mud, and they appeared to be sought after by some of the larger birds. They were from two to eight inches long, resembling a fish in shape, of a light brown colour, and could run and jump by means of two strong pectoral fins. On the approach of an enemy, they bury themselves in the mud with inconceivable rapidity, so that their sudden disappearance seemed to be the work of magic. One of the Malays was employed in catching them, as they are considered to be a great delicacy: he used for the purpose a thin plank, four feet long, and one foot broad; on one end of which, were several sharp pointed nails, the points projecting beyond the ends of the plank. He placed the plank flat upon the mud, and with the right knee resting on it, and kicking the mud with the left foot, he shot along the surface with great rapidity; the sharp pointed nails transfixing the little creatures, before they could succeed in burying themselves sufficiently deep to avoid it. This is a dangerous sport, and requires great skill in the fisherman to prevent accidents, for should he lose his plank, death would almost be inevitable; the mud not having consistence to support him, without the aid of this simple contrivance.—*Earl's Eastern Seas*.

Pula Varela.—17th February, 1837.—Anchored under it in nineteen fathoms, Pulo Varela N.W. end N.W. $\frac{1}{4}$ W., S.E. end N. $\frac{1}{2}$ W. At this island good pine spars may be cut, it is not inhabited, except by about thirty fisherman, who come from Battoo Baroo on Sumatra, with their families, and remain some three months in each year, to catch turtle, and preserve their eggs; they also prepare dried fish roes, and fish, for the markets of Penang, Malacca and Singapore. We cut here two pine spars for a fore tack bumpkin, and an anchor davit.

Arroas Islets and Rocks.—19th February, 1837.—Anchored in 7½ fathoms: bearings, North Rock E. by S. $\frac{3}{4}$ S., Round Arroa, S.E. $\frac{1}{4}$ S., Western Arroa, S. by E. $\frac{3}{4}$ E. Having observed two proas close under the Long Arroa, sent the boats and gun-boat to examine them; they proved to be from Siak and Battoo Baroo, with passes; having come (as at Pula Varela) for the purpose of taking a fishing party from the Long Arroa to Battoo Baroo. This party had been on the former island some three months collecting turtle eggs, preserving them, and drying fish for markets. N.B. These poor fishermen have suffered severely in many instances lately, from being, in their simple occupations, mistaken for, and treated as, pirates.

9th May, 1837.—On return from Manila, Raleigh made Pula Timoan, S.W. by S. 6h. 45m. A.M. the 9th May, from which date until 20th May, we were using every exertion to get to the entrance of the Straits of Malacca, passing between the northern group and Timoan; fine clear weather, and smooth water, but winds light and contrary; calms at interval, which, as there was a strong set to the N.N.E., compelled us to anchor generally twice, and frequently three times in the twenty-four hours; showing the value of a good stream anchor and chain; the depth of water being generally about twenty to twenty-five fathoms. This proves the correctness of Horsburgh's valuable directions relative to commencement of S.W., monsoons, in the China Seas.

Macao Roads.—11th June, 1837.—At 5h. 30m. P.M. anchored with bower in four fathoms, Cabareta Point S. by E., city of Macao W.N.W., Nine islands N.E. by N. The softness of ground in these roads makes it unsafe to remain long at an anchor. The Raleigh was caught in the afternoon of 12th, with a strong gale from the eastward, to which, there was no showing canvas, and although the small bower was let go, and there was eighty fathoms on the best bower, and thirty-six fathoms on small; lower yards, and topmast struck, the ship drifted considerably. I therefore recommend securing the ship in the cap-sing moon, and communicating per Lorcha or fast-boat.

River Min, East Coast, China Province, Fuhkeen.—28th June, 1837.—At 7h. 20m. P.M., anchored off the entrance in ten fathoms. Pih Keurn Shan, or White Dog Island, west point of the Inner island, N.E. $\frac{1}{4}$ E. East point of Outer island, east. 29th, At 6h. 50m. A.M., weighed, cutter and first gig on each bow sounding, ran in for Min River, having shoaled to 2½ fathoms, anchored with the stream; drifting too near on the sand surrounding the Passage Rock, and a falling tide, furled sails; sent master to sound. Found deeper water N.E.; lifted stream, drifted into three fathoms then anchored until 1 P.M., when the flood beginning to make weighed, and with the boats ahead ran up the river, and anchored 2h. 15m. with stream in 5½ fathoms. Uya Fort N.W. $\frac{1}{4}$ W.; Heekiang S.E. Remarkable sharp Peak N.W. $\frac{1}{2}$ N.; Hummock W.N.W.; Passage Rock, S.E. $\frac{1}{4}$ E.; Peak Rock, E. $\frac{1}{2}$ S.; greatest rise and fall experi-

enced 17 feet. The Raleigh remained in this river until 3d July and got out with the ebb without much difficulty.

Foo Choo Foo, Province, and Capital of Fuhkeen.—30th, June, 1837.—At 5h. 45m. A.M. The boats started for Foo Choo Foo, about thirty-eight miles up the River, 6h. 45m. they passed on the south side Knifae Island, and when the Fort on the S.S.W. side bore N.E. by N., pinnace grounded on a bank three quarters of a mile distant, but the tide flowing got her off immediately. At 8h. 20m. passed to the northward of a second island, and opened a fort on the north shore called Minga, the eastmost of two of same name; on the south side a very remarkable Ninepin Rock, which at first appeared like a large boat under sail. At 8h. 50m. passed a large village (Minga) and temple, a beautiful spot; a war junk lying here, no notice being taken the boat passed the second or westmost Minga fort, a convex one, in a sad state of defence, but in a good position for preventing further entrance up the Min; the country on both sides in high cultivation up the sides of hills called step or terrace cultivation. At a large village above the second Minga Fort, the ebb made, and our progress became doubtful; pinnace and cutter grounding frequently, and it was only after having the crews repeatedly overboard we could extricate the boats, and at length managed to get up by sunset, within three miles of Foo Choo Foo, and anchored abreast of a temple on the south shore.

1st. July 1837.—Arrived abreast of Foo Choo Foo, by half-past six A.M., and landed on the north shore, about two cables length below the immense flat stone bridge, which connects the city on both sides the river. The trade of Foo Choo Foo must be immense, for junks of the largest size lie in tiers on each side from the bridge to about one and a half miles to the eastward.

3rd.—The boats returned, and Raleigh proceeded to sea, and by 4th, was well outside the White Dog Islands at entrance of river.

Great Loo Choo, Napakiang Roads.—14th.—Anchored fifteen fathoms, coral bottom: Abbey Bluff S.W. by W., Capstern Rock E. by S. $\frac{1}{2}$ S., having entered by the southern passage: Some of the public authorities of Loo Choo came on board, and were desirous to supply all our wants, but evidently with an air of anxiety, that, when they were made good, we should take our departure. We received three bullocks, five pigs, fowls, sweet potatoes, and about 20 tons of water, but no inducement could prevail on those good people to accept remuneration.

16th.—Ran through the northern passage between reef island and the reefs off the town of Loo Choo.

4th July, 1837.—Rock, marked "doubtful," entrance of China Sea, was seen on the passage to the Loo Choo Islands, when in lat. $26^{\circ} 8' N.$, long. $124^{\circ} 5' E.$, it bore S. $\frac{3}{4}$ W., and may be seen twelve or fourteen miles from the deck.

Passage from Loo Choo to the Bonin Islands.—16th July, 1837.—Generally experienced light and baffling winds from S., S.E., to E.N.E., and N., up to the 30th, and then a strong gale from the westward carried us to

Port Lloyd, Bonin Island.—2nd August, 1837.—Anchored twenty-one fathoms, sand and rotten coral, but good holding ground. South Harbour Rock, S.W. $\frac{1}{2}$ W. Southern Head, S.W. $\frac{3}{4}$ S. Ten fathoms Hole, N. by E. Ten fathoms Hole is extremely narrow, but affords shelter for a sloop of war, or small frigate, but she must be moored head and stern, bow and quarter, for veering is out of the question when once in; perhaps it had better not be used unless for heaving down, for on the western side there is depth of water sufficient. A few settlers from Oahu, Sandwich Islands, recommended to notice, (of whom it might concern,) by Mr. Charlton, Consul there, as industrious and deserving persons, landed here, 26th June, 1830, and have been very successful in cultivating sweet potatoes, yams, Indian corn, water melons, sugar cane, &c., and rearing pigs; many whalers touch here, and for supplies of such. Wood and water are very plentiful. The Raleigh remained here ten days; had a supply of fresh pork and sweet potatoes for all hands, and being short of salt provisions took away live pigs sufficient to supply the ship's company every day for three weeks, with a proportion of potatoes, pumpkins, and water melons. Capt. Beechey's plan of Port Lloyd is amply sufficient.

11th August, 1837.—Rock not laid down, lat. 27° 13' N., long. 140° 46' E., a long rocky low island, bounded by sunken rocks, as we observed the surf breaking heavy all round it: this rock is very dangerous, as it cannot be made out in fine weather, in day-time, more than seven or eight miles distance.

MICHAEL QUIN, Captain.

THOUGHTS ON ALIEN AND QUARANTINE LAWS.

It is surprising that the spirit of the present age, does not suggest the abolishing of the laws, relating to the intercourse of the nations of the world, and of the vexatious interference of the offices called "alien," the very word should be expunged from the dictionary of every civilized country.

The working of this remnant of barbarism, this device of despotism, has fallen much under my observation, and it has puzzled me to discover of what use it is, and why such disgraceful institutions are suffered to pollute the name of a free country. Looking at France for instance, it is a natural question to ask; Is the king of the French, one jot safer on his throne for them? Do not all the

attempts on his "charmed life," originate amongst *his own subjects*? has it in fact ever been known, that any government in the world, runs the least hazard from "Aliens?"—the very word should be abolished from the languages of the earth.

The absurdity of every regulation indeed connected with the practice of restricting the free communication of man with his fellow man, is so apparent, that no laws made with such views, can much longer be suffered to pollute the statute books of any country, under the government of common sense; their continuance to the present time, only justifying a common observation, namely, "with how small a portion of this valuable commodity "common sense," countries are governed." Any person of the most mischievous disposition in the world, plotting the assassination even of kings and emperors, or any other person in any part of the globe; how far would the alien laws prevent him from carrying his design into effect? Their total inutility, in every possible way, in this free country, especially is such, that the existence of them is really matter of considerable surprise. The enormous daily arrivals of foreigners of all descriptions, in every country of Europe, cannot in fact be controlled or regulated, by any laws whatever. The alien laws in this respect, are become as a dead letter. No country *dare* put in force its own regulations on the subject; the consequence is very great annoyance to respectable travellers, and the designing rogue moves about in defiance of them. It is true he runs the risk of stoppage, in those strong holds of despotism—garrison-towns; and it may be said that he is under the *surveillance* of the police in France, and such other places, where no native can harbour a foreigner without reporting him to the said police, (which is the very climax of all arbitrary measures,) but even in such places, this may be got over, and it cannot be long before the French, the polite French nation, will see the necessity of doing away with such folly: a measure, which, with all the vigilance of their excellent police, does no earthly good, and which the ingenuity of any body may evade in a hundred different ways. Within the last two years, hundreds of people, mostly British, but including as well, subjects of other countries; and certainly some of a description of character rather doubtful, have been known by myself to have been residents for considerable periods, in some of the most despotic countries of Europe, in practice, (though not in profession,) without cognizance of police, and without passports; and what government could prevent it? In this blessed land of freedom, no foreigners would be annoyed coming into it without the absurdity of a passport—any man may freely enter it, and no such thing is ever heard of, as his being arrested as an alien, so long as he conforms to our usages. He goes about his business without notice, and this is the *daily practice in despite of our regulations*; and there is no doubt that for one that is

known at the office established at the Custom-House, twenty come into this country who never exhibit any passport whatever. Why then is this farce kept up? Is it to please the despotic government of Europe? The Americans afford us a useful lesson on this subject, and set an example to all Europe. What a contemptible opinion the rulers of the east must have of our boasted state of civilization, when they find that a gentleman of enlightened Europe cannot travel through France without giving an account of himself at every town he passes through! that in fact, no native of that polite country can ever suffer the traveller to sleep under his roof without reporting him to the police! and that his residence there, and his movements, from one country to another, must have the sanction of his own government by the endorsement of his passport by his own consul! for which fees must be paid; which fees (by the way) are often unauthorized, and consequently, impositions. If it should be said that passports are a protection to *ourselves* as proving us Englishmen, and giving us claim to the protection of our ministers and consuls; it may be answered, that experience has enabled me to say, that they are no such thing: they are a mere form, annoyance, and farce. Suppose a person in France gets into a scrape, or some disturbance, or in any way makes himself obnoxious to the police, would his having in his possession a British passport (of which he could get a hundred false ones any day) be any security to him? no, he would certainly be placed in duress, for some further proof than such a document would afford of his identity and peaceable intentions.

There is so much *trick* amongst the consuls of all nations, one playing into the hands of another, to perpetuate as far as they can *their fees*, that in a great measure the continuance of a vast variety of annoying regulations and unjustifiable charges, may be attributed to this cause. It is the practice of different European governments on representation of abuses of this description, to refer to their consuls abroad, to know how particular measures work where they reside. Could any better plan be devised to continue the abuse? seeing that almost in every case the consul's own interest is concerned in the continuance of what abolished, must also abolish its accompanying fees. A farce of this kind is just now going on; where the greatest annoyance to travellers exists that can be imagined, and where the government itself is unable to carry into effective execution its own measures. The government (hardly deserving the name of one) alluded to, has ordered returns from its consuls, as to the practice of the countries where they are resident; and they can so distort the law and practice of all the countries of Europe in which they are, (and they will do so,) that this measure will make things worse than they are at this moment, if possible; in fact, their own fees will be lessened if they do not. Surely, the exercise of a little common sense might enable any public man to regulate such matters without referring to the par-

ties interested in the continuance of the abuse. Perhaps the existence of the laws under discussion, as well as some other useless practices of our own Custom-house, will enable the consul of the nation in question, resident in our own happy England, to avail himself of them to sanction all the existing absurdities complained of, in his own country! When will the spread of knowledge, "the march of intellect" reach the rulers of the earth, and put an end to the question so perpetually occurring to "a cool looker on?"—"With how little sense a government can be carried on?"

The subject of quarantine regulations is almost surrounded with as many absurdities as "the law of intercourse." Excepting the plague, who will say that the quarantine laws ever yet prevented the introduction of pestilence, or infectious fever, into any country whatever? All experience denies it; and if medical men cannot be brought for a moment to emerge from the mystery with which it is their interest to surround themselves and their practice; and which, it is quite certain they will not do, others must do it for them.

Looking on this subject, then, free from professional "humbug," using only common sense, and the evidence of *facts*, what a truly ridiculous figure must the government of enlightened Europe present, when we consider the *cordons sanitairis*, the regiment of troops, set to arrest the spread of that visitation which was so specially proved to be, beyond all human control—the cholera. This disorder has marched almost all over the world, in despite of all quarantine regulations whatever. The yellow fever has made its appearance wherever the climate, localities, and state of seasons, have combined to predispose the human body to its virulence. Typhus fever is raging in London at the time of my writing these lines, and it is worthy of remark, that the newspapers of the day report a whole ship's company and passengers as being kept in quarantine at one of our colonies, on account of this fever having made dreadful havoc on board. If the precaution used in the case in question be necessary to prevent typhus fever from spreading amongst a healthful people, in one of the finest climates of the world, how is it that the same does not *depopulate London*?

These, indeed, and many more of the visitations of Providence, (amongst which may be enumerated the fever incident to the Coast of Africa, which has lately raged so violently in our squadron on that station,) are so clearly beyond human control, that any attempt to restrain their progress has always proved abortive; and it is the plague only which seems to be so strictly *contagious* as to be capable of being guarded against with any possibility of effectually confining it to one locality. It has been my fate to have seen enough of this most mysterious calamity, to be quite satisfied that, in the present state of ignorance which exists, of the nature of plague, precautions are necessary, *because effectual*. Experience, founded upon the

practice of ages, in the Levant, has proved that the plague is only to be communicated by *contact* with the person under its influence, or the raiment, or goods capable of retaining the mysterious means by which it is propagated and extended. It has been my fate to have been in the room of a person ill in bed with the plague, but by *avoiding contact* there was nothing to fear; and the notoriety of the effectual protection, the perfect impunity with which families brave the raging of the scourge all round them, by keeping in strict quarantine, almost sets the matter beyond doubt, to say nothing of the almost positive proof afforded by the frequent breaking out of plague in the different ports of the Mediterranean, on board of ships from the Levant, (in quarantine,) and even in the Lazarettos, and there from precaution being stopped. How far this scourge of the Musselman depends upon climate, and whether or not *it can* be introduced into Northern Europe, seems, however very questionable, and by no means answered by the "great plague of London." No one can be prepared to say that the great pestilence which has existed in London, more than once, and called "the plague," was exactly of the nature of the plague of the Levant. If capable of existing in these climates, it is odd that it has never been brought here since; at all events, its non-appearance is a tolerably certain proof of the difficulty of introducing it, and not the saving effect of our quarantine laws. How is it, that in the great empire of Russia, in constant communication on its immense southern frontiers, with countries where the plague is perhaps never absent, that this scourge never reaches Petersburg? In the markets of this Russian capital may be found all sorts of goods of the most likely kind to convey contagion, brought from countries where the plague is constantly present; and with which countries, there is, beyond doubt, constant intercourse. It is perfectly unavoidable to prevent it where countries join, as Russia does with those on its southern boundaries, though it is not denied that the Russians affect the observance of precaution on those frontiers, and have also, quarantine laws.

To come however to these laws as they are *conducted* in England. To any one who has been in the European ports of the Mediterranean, where experience of the plague has taught the necessity of precaution, and where, to render that precaution really available, *effective regulations* are adopted, which have, in reality, the effect of excluding the plague; to any person who has witnessed all this, the quarantine regulations of England, (not the laws, but the *working* of them,) are the most ridiculous imaginable.

Having been often subjected to this farce, experience has convinced me, that the whole thing is useless and vexatious in the extreme; and it really becomes worth considering whether it would not be as well to do away with such an establishment altogether; but here, again, interested parties present themselves to oppose it. The whole estab-

lishment, to begin with, is a serious public charge, consequently all employed in it use every possible endeavour to uphold it. But there are many ramifications which are not at first apparent, much more influential, in retaining the absurdity. Just, for instance, let us suppose a cruize undertaken by a party, to visit the ports of Spain and Portugal, Gibraltar, the coasts of France and Italy, &c. ; the party visits probably fifteen or twenty different ports, a "bill of health" must be taken from the Spanish Consul from the last port in England, charge ten shillings and sixpence. At each port called at during the trip, endorsement by English Consul, or new bill of health, charge two dollars ; by the Foreign Consul of the port next to be called at, charge again by him one or two dollars, and so on. Thus, in the course of a few months, the party comes in contact with, perhaps, twenty English Consuls, and as many foreign ones ; every one of whom had a direct interest in seeing the quarantine laws upheld, (a fine field, by the bye, this cruize, for endorsements of passports,) and who will talk as seriously of the importance of them as if they really believed them to be of any use. Well, perhaps the truth is, that self-interest has the effect of making a great many of these very respectable functionaries really believe what they say ; in fact, it has prevented them ever exercising the faculty of thought on the subject, and these are the very men who would, of course, set up a "hue and cry" were it proposed to annihilate the laws and practice of quarantine. The full amount of interests which consuls have in perpetuating this absurdity has by no means been here stated : it would be too much ; the field is far too wide and prolific for my limits, but they are the very parties whose opinions would guide, and really influence the question, were any alteration proposed in the quarantine laws, until some master-mind springs up among us, capable of acting from the dictates of common sense, and who has resolution to act without being influenced by the opinions of interested parties.

Here is an absurdity of the working of these laws. Their practice is confined (with the exception of some show of precaution of the European natives bordering upon Turkey,) to *sea intercourse*. Thus, suppose two English gentlemen at Cadiz or Lisbon, going to any other place that could be reached either by sea or land to Corunna perhaps, or our own Gibraltar. The cholera is, we will suppose, raging with the utmost virulence at the place they start from ; one gentleman goes by land, is admitted without a question, and finds his companion, who had come by sea, performing quarantine ! Here is another, a fact which happened not very many months ago. A party of travellers embarked at Malta, in a government packet, for England ; the packet happened to touch at Algiers, and there was a report of the plague existing at Tripoli, which had as much to do with compromising the packet as if it had really existed in the moon ! and so thought the quarantine department at Gibraltar ; for without

hesitation the packet was admitted to free intercourse with that garrison. In fact, a portion of the passengers remained on shore there, and embarked on board another vessel for England. But on their arrival at Falmouth, they found their friends, who had come all the way in the government steamer (having also touched at Cadiz, and there had pratique,) performing quarantine, because the plague existed at Tripoli!

But of what use are our English regulations in effecting this care of the public health, which is contemplated by the quarantine laws? To carry such laws into actual effect seems to require the existence of an arbitrary government, or at all events, a garrison establishment such as Malta and Gibraltar; another name for despotic government. It would seem that the kind of liberty to which Englishmen are accustomed at home, precludes the possibility of enforcing quarantine laws. Here is another fact bearing on this part of the question that has fallen under my observation. On one occasion, being under quarantine at Standgate Creek, there was at that time a vessel there which had come from Trieste, having cotton on board. This cotton had come from Egypt. It does not, however, much matter where it had come from. Our quarantine regulations considered it capable of introducing the plague, and enforced its being put into an old hulk, stationed there for such purposes; and on board which the cotton was to be aired, and undergo the necessary probation. The merchant vessel was made fast along side the hulk; had her sails loosed, and got ready for a start; and as the last bale of cotton was put into the Lazaretto, she slipped her lashings, made sail, and in a few hours was in London, and the crew dispersed in all directions! Now this was so soon after they had been handling "an enumerated article," as our laws have it, and one perhaps, of all others, most likely to be the means of conveying contagion! It has been my fortune to come up channel in a vessel with a foul bill of health; that is to say, coming from a place where the plague existed. The freest intercourse with boats, fish bought from them, and paid for, or more generally bartered for, &c.; and communication unrestricted has gone on between the parties, and even *some letters have been sent on shore from her*. But enough of this has passed under my observation, sufficient of this kind of breaking of quarantine laws, to convince me that they are repugnant to the free institutions of Britain; that *they cannot* be carried into execution, and had therefore better be done away with entirely. It only requires one (or two would be better) of the leading powers of Europe, to see this in its proper light; to take the thing up in earnest, and not to allow the minor powers to awe them into the continuation of what they decide on as useless. Seeing that these pettifogging and powerless nations do, in fact, make use of their quarantine laws, (with western Europe and unsuspected places,) more as measures of revenue and police, than with any regard to their professed object.

Some twelve or fourteen years ago, this subject was much discussed; but nothing resulted except some alterations of who was to bear the expense, which was previously thrown on the ships, or rather those who consumed Levant produce. It was upon that occasion spread over "the broad shoulders of honest John Bull," and made a public charge, which was no doubt quite correct, if suffered to remain at all. Let us hope, Mr. Editor, that through the medium of your pages the subject may again come under discussion, and that the result may be the rescinding of the quarantine laws entirely.

AN ADVOCATE FOR THE FREE INTERCOURSE OF NATIONS.

London, August, 1838.

[The reader will find at page 778 of our volume for 1836, an interesting and valuable article on this important subject, from the pen of an American writer, whose opinions as being those of a medical man are entitled to additional respect. With regard to the plague itself, against which an *effectual* quarantine is most necessary, some useful discussion has taken place at the meetings of the British Association, which may form matter for another number of the *Nautical*.—ED.]

DESCRIPTION OF ALACRAN AND CAY ARENAS, IN THE GULF OF MEXICO.

FROM the survey of Don Ciriaco De Cavallos, in 1802, we supposed the port of Alacran capable of admitting small craft only. It is true, a vessel drawing eleven feet may pass over the rocky heads between Perez and the South Spit, which make the entrance intricate; still, with the wind to the south of east, which it generally is in the morning or rather before noon, a vessel drawing eighteen feet may sail in. It is one of those harbours that can only be taken by eye; and from aloft every shoal may be plainly seen. A vessel entering should pass close to the South Spit, and run N. $\frac{1}{4}$ W., until within a cable's length of Perez Spit; then haul close round it, keeping in the blue water, and anchor with the Huts W. by N. one-fourth of a mile. The white water on Perez Spit can be plainly traced from the island, coming in from the westward, with the Huts bearing N. and N.W. by N. There are heads with sixteen feet over them, a quarter of a mile off from the reef; therefore the eastern extreme of Perez Spit should not be brought to bear to the eastward of N.E. by E.

Alacran affords a very secure harbour; the dry reefs protecting it as effectually as would the land. The outside anchorage, two cables north of the South Spit, in six fathoms and a half, coral sand, is very safe, with all but westerly winds, which are rare, and give timely warning.

The tide, if it can be so called, is very remarkable. It was new moon on the 25th of March, about three in the afternoon. On the following day the tide fell from 6 A.M. to 6 P.M. $7\frac{1}{2}$ inches, and the

next day 13 inches, the wind being from E.N.E. to E.S.E. moderate. Again, on the 26th April, two days after the new moon, wind in the same direction, rather less, it fell twenty-six inches from 7 A.M. to 6 P.M. This was a very unusual tide, and several reefs were quite dry that were not seen before above water. We may suppose this rising of the waters in the morning to have been occasioned by the land and sea wind, (the few inches are scarcely worth noticing,) the mean height being about noon. On the plan therefore, there may be, sometimes, a foot more or less than there shown. The fishermen we found, on our second visit, are supplied with water from the main-land; a strong proof that it cannot be procured at Alacran. The dampness of the atmosphere was remarkable; the sails wet with salt water, exposed to the burning sun for two or three days, would not dry, and the fog in the morning was regular and very uncomfortable.

The main reef forms a regular segment, convexing to the N.E., its base or extreme length tending N.W. by N. fourteen miles. The lead does not give sufficient warning of approach, the abrupt descent from twenty fathoms to dry rocks is very remarkable, as are the shelves on the west side from seven to twenty-four fathoms in a ship's length. The nature of the deep water soundings is very fine sand; that called grey white and yellow is much of the same kind; a horn-protractor laid on white paper will give the exact tint. This will be found the predominant colour on the ground of Campeche Bank. To the eastward of the Alacranes there is no appearance of soundings, with a constant current to the N.W. from one to one-half knots per hour. The dry sand-bores are conveniently situated for our work. Three of the same stars as were observed at Pajaros make the high north bore in lat. $22^{\circ} 32' 15''$ N.. These sand-bores soon get covered with grass, samphire, and various kinds of herbs, when above water. The first formation of all is branches of dead coral. These we found by digging to the level of high water mark, and is probably the reason the Alacran does not contain fresh water. All the cays swarm with boobies and man-of-war birds, now with their young. The only eatable kind are plovers and sand-pipers. Fish of all kind are very abundant, particularly groupers and rock-cod. The fishermen dry them for the Campeche market; they had nets for taking them and the hawk's-bill. Turtle are also plentiful.

T. S.

[Much has been said of the current on the south side of Cuba. This is the third time I have found it settling to the eastward when the moon is increasing, or in her two first quarters. It continues from Cape Antonio to Cape Maize. Mr. Shepherd, a pilot, residing at Port Antonio, informed me it ran to the eastward a fortnight, and then to the westward about the same time. Coasters from the Caymans also give this as a reason for making their passages to Jamaica at this time.

[*Arenas*.—In our last number the meridian distance of Arenas from Alacran was given as $6' 51''$, it should have been $6m. 51s. 5$.—Ed. N.M.]

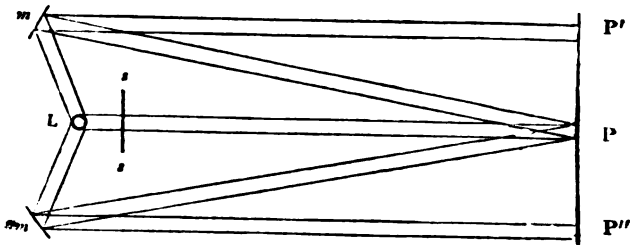
ON THE ADAPTATION OF DIFFERENT MODES OF ILLUMINATING LIGHT-HOUSES DEPENDING ON SITUATION, AND THE OBJECT INTENDED IN THEIR ERECTION. *By W. H. Barlow, Esq.*

(From the Philosophical Transactions.)

Constantinople, March 14th, 1837.

HAVING made several experiments with the Drummond light, and other means of illuminating light-houses, undertaken at the request of the Turkish* government, with a view to placing lights at the entrance of the Bosphorous from the Black Sea, I have been led to observe some facts regarding the illuminating powers of the lights themselves, and the increase obtained by the use of reflectors and lenses, which, I trust, may not be found uninteresting.

On the increase of illuminating power obtained by lenses and reflectors.



Let L in the annexed figure represent a lamp; $m m$, two reflectors, which may be so adjusted as to throw the reflected images either in parallel lines on a screen at P' and P'' , or at such an inclination as to unite with that of the light itself at the centre point P . Let also $s s$ represent a screen of such imperfect transparency as to absorb the same quantity of light in transmission as the mirrors $m m$ absorb by reflection; then in the first case the three images $P' P P''$ will have equal surfaces and intensities,† and the illuminating power will be three times that of the central lamp; and when by a different adjustment of the mirrors the three images are blended in one, then the surface will be equal to that of the central image, but the intensity is three times greater, so that in either case the illuminating power will be proportional to the number of mirrors, or to the surface of those mirrors. If, therefore, we conceive the whole space between $m m$ to be filled with mirrors, to reflect the light in parallel lines on

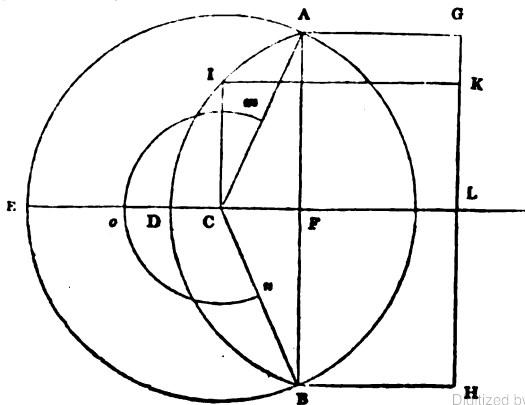
* We understand that Mr. Barlow was presented on this occasion by the Sultan with the diamond order of "Nishaun é ifihar," or "Badge of Honest Pride," accompanied with a firman expressive of the Sultan's satisfaction with his services and zeal.—E.D. N.M.

† We reject here the difference in the length of the trajectory of the direct and reflected light.

the screen $P' P P''$, it is clear that the illuminating power of the lens will be expressed by the number of times the surface of the central image is contained in the whole surface of the screen P', P'' ; and this is true, whether we consider the several images to be thrown in parallel lines, or condensed in a focus, or dispersed over a larger surface; for as the illuminated surface is contracted, the intensity is increased, and as it is extended, the intensity is diminished in the same proportion; so that under all circumstances the product of surface and intensity will be a constant quantity. Hence the illuminating power (abstracting from absorption) will be increased by the reflector in the ratio of the surface of the lights to the surface of the end or section of the reflector. Or, in other words, the area of the end of the reflector divided by the area of the light, will be a numerical measure of the illuminating power.

The result is obtained by supposing the reflector to be composed of a number of small plane reflectors, each throwing the light in parallel lines, and each image therefore as having the same intensity as the direct light (screened as above) when viewed from the same distance; but with a continuous curve surface, such as a parabolic reflector, we must consider the divergency of the emanating ray at the point where it falls on the reflector, which will vary inversely as the square of the distance of that point from the centre of the light, or directly as the square of the sine of half the angle which the light subtends from that point, and therefore as the versed sine of half the same angle; and the sum of all these must be compared with the area of the reflector, that is, of its section or end, which varies also as the versed sine of half the angle which its extreme edge subtends at the light.

In order, therefore, to compute the increase of illuminating power due to a parabolic reflector, according to this principle, we must find a *mean focal distance*, that is, a distance (from which to estimate the constant angle subtended by the light) that shall be equivalent to the several variable distances.



Let $A D B$ be a parabolic reflector and C its focus, then will $D C$ be the minimum and $A C$ the maximum focal distance. Now if the light at C emanated from a point, all the rays intercepted by the surface $A D B$ would be projected forward in parallel lines, and cover the plane surface $G H = A B$ at whatever distance it might be placed from the reflector, and the light at $G K L$ would be that due to the distances $A C, I C, D C$, respectively: if then a segment of a sphere $m o n$ be described intercepting the same number of rays as $A D B$, and whose surface is equal to the area of $A B$ or $H G$, we shall have the same quantity of light equally distributed over the same surface; hence the radius of the segment $m o n$ will be the mean focal distance with which all the light may be conceived to leave the reflector.

Describe the circle $A E C$; then, because $A D B$ is a parabola, and $A E B$ a circle described about it with the radius $C A$, and because $C A = D F + D C$, the height $D F$ of the parabola = $\frac{1}{2}$ the height $E F$ of the segment $A E B$.

$$\text{But } E F = E C + C F = A C + C F, \text{ therefore } D F = \frac{A C + C F}{2},$$

$$\text{and } D C \text{ the minimum focal distance} = D F - D F = \frac{A C - C F}{2}$$

Let $A C = r, C F = h$, then $r =$ maximum focal distance, and $\frac{r-h}{2} =$ minimum focal distance, $(2 r \times 3.1416)(r+h) =$ surface of segment $A F B$; and $4(r^2 - h^2) \cdot 7854 =$ area of $A B$ or $G H$.

Let $x =$ radius of segment $m o n$: now the surface of the segment $A E B$ is to the surface of the segment $m o n$ as r^2 to x^2 , and the area of the end $A B$ is equal to the surface of the segment $m o n$, therefore

$$(2 r \times 3.1461)(r+h) : 4 r^2 - h^2 \cdot 7854 :: r^2 : x^2$$

or

$$2 r (r+h) x^2 = (r^2 - h^2) r^2$$

$$\text{whence } x^2 = \frac{(r-h)^2}{2 r (r+h)} r^2 = \frac{r-h}{2} r$$

or

$$x = \sqrt{r \left(\frac{r-h}{2} \right)}$$

But $r =$ maximum focal distance and $\frac{r-h}{2} =$ minimum focal distance. Therefore x , the mean focal distance, is a mean proportional between the maximum and minimum focal distances. Let therefore, A represent the angle subtended by the reflector from the centre of the light, and $a =$ the angle subtended by the light from the reflector at the mean focal distance, then

$$\frac{\text{versed sine } \frac{1}{2} A}{\text{versed sine } \frac{1}{2} a}$$

will be the amount of illuminating power obtained by the reflector, that of the lamp being 1.

This result differs in its numerical value very little from the former, viz., the area of the reflector divided by the area of the light. Thus, for example, let a reflector whose maximum focal distance is twelve inches, and minimum three inches, be illuminated with a standard Argand lamp, the diameter of the *flame* of which is one inch, and its altitude $1\frac{3}{4}$ inch. Here the depth of reflector is 9 inches, and the area of its end $4(12^2 - 6^2) \cdot 7854 = 339 \cdot 28$ inches. And by the first rule $\frac{339 \cdot 28}{1 \cdot 75} = 193 \cdot 8$ is the amount of power obtained.

By the second rule we have the angle subtended by the reflector equal 240° ; mean focal distance $= \sqrt{12 \times 3} = 6$ inches. The angle subtended by the flame of an Argand lamp, which is in the form of a cylinder, will be greater in the vertical direction than in the horizontal; in order, therefore, that we may be able to measure the surface of the segment by its versed sine, we will assume that the light is in the form of a sphere whose apparent surface and intensity is equal to that of the lamp, and therefore equal to it in illuminating power.

Now the angle subtended by a sphere whose apparent surface is 1.75 at a distance of 6 inches is $14^\circ 18'$; therefore by the second rule $\frac{\text{vers. } 120^\circ}{\text{vers. } 7^\circ 9'} = 192 \cdot 9$ amount of illuminating power obtained.

Let us now suppose Drummond's lime ball to be placed in the focus to find its illuminating effect. Here the section of the ball, the diameter being $\frac{3}{8}$ ths of an inch, is .110445, and on the first principle

$$\frac{339 \cdot 28}{\cdot 110445} = 3079 \text{ amount of power,}$$

and by the second

$$\frac{\text{vers. } 120^\circ}{\text{vers. } 1^\circ 47' 27''} = 3071 \text{ amount of power.}^*$$

And as it is known that the illuminating power of the lime ball when $\frac{3}{8}$ ths of an inch in diameter is equal to 16.6 Argand lamps, it follows that a reflector of the above dimensions will give a light equal to $3079 \times 16 \cdot 6 = 51112$ Argand lamps, or 264 such reflectors illuminated with Argand lamps; which agrees with Drummond's observations.†

* It may not be seen immediately why these rules do not give precisely the same numerical results, but it will be found that if the angle of divergence be very great, the position of the reflector will at the extreme edge have a considerable obliquity to the line of direction in which it acts and its apparent surface, and consequently its illuminating powers will be reduced. The difference, however, is very small when the mean divergence is under 20° .

† Phil. Trans. 1830, p. 390.

These rules are equally applicable to lenses, the same effect being produced in them by refraction as in the reflectors by reflection, except the difference between the light absorbed and transmitted.

It is, however, almost impossible here to determine the mean focal distance very exactly, the lens being built in pieces; and its form being square increases the difficulty; still if we take the mean between the distance of the focal point from the centre and extreme angle of the lens, in the middle of the thickness of the glass, we obtain a tolerably close approximation.

Also, the lens being square, and eight of them forming the circle or system of lenses, $2 \left(\frac{\sin 22^\circ 30'}{8} \right)$ will be the expression for the light intercepted.

For example, let it be required to find the increase of illuminating power obtained by the French lens with its lamp, as used by Drummond in his experiments, the lens being 30 inches square, and the lamp having an intensity equal to 4, and illuminating power equal to 10.4 Argand lamps.

Here the surface of the flame will be 4.55 inches; therefore by the first rule $\frac{30^2}{4.55} = 198$ increase of power. Again, the mean focal distance being about 39 inches, a sphere whose apparent surface is 4.55 inches will subtend $3^\circ 31'$; hence by the second rule

$$\frac{\frac{1}{4} \text{ in } 22^\circ 30'}{\text{vers. } 1^\circ 45' 30''} = 200.$$

These examples being sufficient for the purpose of illustration, we may now state the conclusion which is derived from the above investigation; namely, that all reflectors and lenses of the same diameter have the same illuminating power when illuminated with the same lamp, and that decreasing the focal distance, and intercepting more rays, does not increase the illuminating power, but simply the divergence, and consequently the surface or space over which it acts.

TO JOHN BULL.

ON THE DEFECTIVE CONSTRUCTION OF HIS MERCHANT SHIPS.

HONEST JOHN,—Sometime ago I availed myself of these pages to call your attention to the above subject, since which you have had a Committee of the House of Commons, like a meeting of physicians, to investigate the complaint. Their report I have also commented on in this same *Nautical*, and however objectionable the bill introduced, in compliance with the said report, proved to the "reformed house," I can never look on the elucidation of the abuses, *proved to exist*, before the "Shipwreck Committee;" but as an honor to the able

chairman, (Mr. Buckingham.) This gentleman, gone though he may be, in despite of the strenuous exertions of *interested people*, succeeded in exposing to you, and to all the world besides, the multiplicity of evils which exist in the management of your Commercial Marine; evils which the report* deliberately states cause a loss of 894 lives annually, and in money costs above 2,800,000*l.* sterling! All this, it appears, honest John Bull, you are content to remain saddled with! Indeed your Sapiency† has, I truly believe, got so used to being robbed, and to being told so, that I begin to think it is part of your nature to be pleased with it, and that you console yourself with the comfortable idea what your vanity prompts to you, *that you can afford it!* Well you may, John, if clear-sighted and able men cannot drive into your numbskull that you are *robbing yourself*, annually, of somewhere about one and a half times the amount of the interest of the National debt, by continuing the Corn Laws, you may well look upon £2,800,000 lost, in consequence of the defects of your Commercial Marine as a trifle too insignificant to disturb your equanimity of temper for a moment. Perhaps your fancy is tickled by it; but why shut your eyes to the consequences of the evil, the loss of human life, which the "Shipwreck Committee" deliberately proved to you, amounts to 894 lives yearly, through the mal-construction and mismanagements of your Mercantile Ships! Your warm and generous heart, John Bull, is usually the most susceptible when any cruelty is practised: you would not willingly have any human being hurt, much less drowned! But you don't see, that in consequence of the failure of Mr. Buckingham, Mr. Ballingall, and others, to provide a remedy against drowning your countrymen by wholesale, that it is going on as much as ever. No, to be sure not, you know that one extreme begets another, and a calm follows a storm. You are quietly composing yourself to sleep again in your easy chair, fancying, of course, that your ships, *like all things British*, are quite perfection! Sleep on you may, John, but it will be my part to disturb your slumbers now and then with the unwelcome fact, that the construction of your ships not only continues, as I have before told you, to be "the most insane proceeding under the sun," but that as the natural consequence of having "kicked up a row" about them, which for a time has been got the better of, that they are getting worse! Yes, in despite of the example the Americans set you in their "Liners," the construction of your ships is proceeding by wholesale in a worse manner than ever! There is absolutely nothing considered in their construction, but at *how cheap a rate* they can be put together; how the new "Tonnage Bill" may be evaded; and how to thwart and humbug the regulations of "Lloyd's Register Book."

* See report in *Nautical Magazine*, vol. 1836, p. 588.

† Query meant by the author for "excellency."—P. D.

I have let this matter rest for a little while, because I knew very well that it is not your taste to hear the truth, when this same truth is disagreeable, *that you would rather pay* than hear it. It might be better "to wait my time," particularly as there is a cause operating slowly and silently, which will effect more than all the arguments that could be advanced for improving the construction of your Merchant Shipping. Yes, the merchant ships of Great Britain must be speedily superseded by another description of vessel, in the construction of which, for many reasons, the utmost skill and art *must of necessity*, be used: I mean, of course, your "steamers." I shall therefore, for the present, confine my attention to this description of vessel, to endeavour to aid as much as possible in perfecting them. The important fact, also, of the progress which is making in constructing many of these vessels altogether of *Iron*, must not be overlooked, as a cause at work which will forward the proper construction of those of wood; for if your ship-builders, John, will shut their eyes to the consequences of the substitution of the material, I can tell them that your countrymen will not, and the shipwright's "occupation will be gone," and ships will be built by engineers and men of science. But this is already taking place, and the day is not far distant, unless the shipwrights open their eyes, and practice to common sense, that their whole system of putting together a ship will become "a laughing stock;" and it will become a matter of wonder how materials could have been so senselessly applied, as they are even to this day, in the construction of that absurdity, the Merchant Ship, of this great naval country. Yes, when it becomes the business of men of education, science, and mechanical skill, free from the prejudices of the present race of ship-builders and ship-owners, the application of the materials, and the putting together the present Merchant Ship, will be held up, as it deserves to be, as "one of the most insane proceedings under the sun."

I have said that steam-vessels *must* be well-constructed. The awful losses which took place some years ago, especially that of the *Rothsay Castle*, opened the eyes of your countrymen, Johnny, to the fact, that the safety of these vessels was of importance to them; and the effect of the inquiries which took place, in consequence of the loss of that vessel, and others, added to the very proper and strict investigation which has been recently instituted, respecting the machinery of the *Victoria*, must show owners, that however careless they might be disposed to be, or involuntarily through their own ignorance, might become, if left to themselves, that the British public will not sanction their proceedings; and that unless really *safe* vessels are constructed, that they will not answer the end, namely, "profit," for which they are built.

Now, having this grand hold, namely, "*profitable results*," as Dr. Lardner has it, upon those who are springing up in all directions

to build steamers, it may appear superfluous to volunteer advice. Their own interest, it might be concluded, would be sufficient guarantee for the perfect construction of the ships they are about to build, but, unfortunately, every one who is likely to have the direction of steamers, is not practically an engineer, nor perhaps even has a turn for any mechanical science. Therefore, the rising companies, to extend this wonderful agent, must be dependent on others for all they do. Perhaps, I shall not be far wrong when I assume that amongst all the stupendous efforts, at the present moment, making by companies for the extension of steam-navigation, there will rarely be found one leading man amongst them capable of specifying exactly what the necessary dimensions and form of his ship should be, much less her construction in detail. He will, therefore, most likely, rely very much upon his builder, who will, of course, make as great a show of strength and perfection in the constructing of the ship, with as little *expense to himself* as he possibly can, and without meaning any disrespect, and, to speak plainly the truth, it will be his evident interest (as heretofore,) to gull the public and his employer;—*my efforts shall be to prevent him.*

No one, twenty years ago, could possibly have imagined what a first-rate steamer of the present day is, I mean in her improved mode of putting together. The advance in the art, caused by the building of these ships, has been such, as nothing short of a strict government regulation could have effected in ordinary ships. No one supposes that any conviction of the defects of previous construction could have been forced upon ship-builders and owners, so far as as to induce the application of such strength, voluntarily, into their practice. It was brought about in "steamers," by the force of public opinion, loudly expressed in consequence of the striking instances of fatal losses caused by the want of strength in the *Rothsay Castle*, and others. It has, however, produced wonders, and efforts must be made not to let, for one moment, the notion retrograde, *that the utmost strength which human art can conceive, is indispensably necessary to the safety of a steam-ship which is to brave the ocean.*

It has already been said, that it is also the interest of those who own them, to adopt at once the greatest attainable perfection. But although this is the strongest way of putting it to oppose self-interest, yet in this case the public interest would still suffer by *the exceptions* which might arise, it being no difficult matter to conceive many cases when a man, for particular and temporary practices, might find it his immediate interest, to send to sea a steam-ship quite unfit for the purpose she is sent upon: the worst that could happen, perhaps the *best* to him, would be the recovering of her value, or more, from the underwriters. The same argument is indeed fully borne out by practice in ship-owning generally. I think there can be no doubt entertained that it is for the public good, and

also for the *true interests* of the owners of ships, that all ships should be good; whereas, we see in practice, that the most profit is gained by the exceptions, these exceptions themselves, undermining as they will, and destroying the advantages which would accrue to the straight-forward owners of the good portion of shipping. Now, therefore, is perhaps the time when steam operations are making such rapid progress, to endeavour to get established that sort of public control over them which will ensure a strict superintendence; some proper regulations in fact to secure to the public that no steamer goes to sea unless she is constructed (and her state kept up) in the very best manner known; and for this there is evidently no other plan that can be effective but one of regulation in detail, namely, a scale being drawn out by a board constituted for the purpose, containing every particular in the construction of steamers of different classes; and in fine, constituting the marine board, as suggested in my communication of May, 1836, p. 236; and which board, and nothing short of such, will secure to the public "safe steamers." No half-measures will suffice. After the loss of the *Rothsay Castle*, a committee of the House of Commons did sanction a scale of scantling, &c., &c., as a rule for the construction of steam-ships; but of what avail could such a measure possibly be unless followed up by the establishment of such control as would ensure their recommendation being observed? If this were effected, very nearly all loss at sea would certainly disappear; the money would be saved which is now paid for insurance, (at least the greater part of it,) and the loss which the public now suffer by the replacing of ships wrecked, and their cargoes, would be avoided; and absolute safety would be so nearly attained, that the British steamer, from such positive guarantee of her perfection, would to a certainty become the chosen conveyance for all passengers, correspondence, specie, and valuable merchandize.

It may appear a little arbitrary at first view to propose any regulation to force upon individuals the observance of strict rules for the conducting of their private concerns, but the principal is applied in a hundred instances unconnected with shipping, and no complaints are thought of. The progress of steam navigation, however, for a considerable time to come, will of necessity be in the hands of "companies," owing to the great outlay of capital necessary to prosecute a complete "line" in almost any direction; and which will be, for a long time to come, the only mode in which this great pursuit *can progress* with advantage; and I think no one belonging to a company of this description can fail to see that a strict regulation in respect to their ships, is not only the very best security that can be devised for their own interest, but that it is in fact absolutely necessary to secure them against the opposition which they will to a certainty experience from unprincipled or unscrupulous people, with inferior, low-priced, half-wornout steamers; and against which they

would find the utmost difficulty to contend. It will not do to say the public will discriminate. All experience shows, that in sailing vessels this has never been the case; and that the straight-forward, well-intentioned man, beginning ship-owning, with the best intentions in the world, has been actually forced, for want of protection, to do as others do; and though his ships may depreciate ever so much, to continue employing them in that state to prevent the ruin which would otherwise overtake him. Young as steam navigation yet is, there are not wanting proofs that the same sort of operation is at work, and yet your countrymen, John Bull, do not see the certain consequence of all this. A little, low passage money, or freight, secures to the inferior ship ample patronage, and nothing it is clear will stop this but such strict *surveillance* as shall ensure the very best construction, and the ships being kept up in that state. No, not even the total loss of the inferior ship, with all hands, will cause the public to discriminate. It will be the talk of the day, and then forgotten, and your independent Englishman will assert still, that he has a right in all shipping matters to do just as he likes; and so perhaps he ought to do were he the only sufferer, or could any means be devised whereby the public could know the real quality of what they are embarking in when they set foot on board a ship. But when one man does so, a hundred, aye, a thousand trust themselves in a state of total ignorance, relying without hesitation or thought upon all being correct. *I know* that this has been the case in steam navigation. Was it not so in the Forfarshire, where nearly all the passengers were lost? and that ships in the most improper and dangerous state have been sent to sea, when passengers have embarked by them, fortunately for themselves, in the most happy state of ignorance; and be assured my friend honest John, that another winter will not elapse without some startling event which will bring to mind the fate of the Rothsay Castle, and the Forfarshire likewise!*

Surely, then, the public companies, wherein immense capitals are embarking, will see the necessity of lending their aid in calling the attention of government to some measures for protecting the immense properties which they represent. If they do not, woe to the dividends! The companies will be undersailed and opposed by all the "trashy," half-worn-out steamers that can be got hold of; for they may be assured, that a steamer, like a sailing-vessel, "will never wear out;" she will be run, if left without control, till the underwriters pay for her, which will most likely occur simultaneously with her drowning one or two hundred. Depend on it, John Bull, that the sooner government takes the matter in hand, and appoints "a marine board," the better; and as the interests of those owning sailing-vessels are supposed to be averse to such measures, leave the interest to its fate,

* What has become of the Northern Yacht steam packet? Lost since this was written!

and let proper regulations be made for steam navigation, It is quite extensive enough (or soon will be) to pay for such board, and all its necessary establishment of surveyors, &c., &c. Let no steamer clear out, or be licensed for a certain number of months for coast service, without a certificate from such board, for which a fee should be paid, as well as when they are built and registered, sufficient to support the expense of such guarantee as the measure would afford for their perfection. The expense would not be worth considering, and would be repaid a hundred-fold every voyage. In fact, it is the only way in which property invested in steam operations can be protected.

I began this letter to you, John Bull, with the intention of telling you what is doing in the building of your steam-vessels, but notwithstanding I have admitted the enormous improvements that they have been the means of effecting, I can find enough of the old "leaven" of the "old school" to reform. But my zeal for preserving the interests of "owners" among your countrymen has led me so far, that I must reserve what I have to say on this subject for a future time, as I have now, perhaps, gone as far as there is a chance of your attending to. But to your friends the ship-builders, I would say with Bobby Burns,

"If there's a hole in a' your coats.

I rede ye tent it;

A chiel's amang ye takin' notes,

An faith he'll print it."

For I promise them that their proceedings shall not remain unnoticed by,

London, September, 1838.

Sir, your obedient servant,

MERCATOR.

NOTES ON THE GULF OF DULCE.—*West Indies.*

APPROACHING this coast was a cheering sight after the dull monotonous shores of Yucatan. Indeed, the scenery here surpasses most others of the kind. The Rio Dulce winds through stupendous white cliffs from 300 to 400 feet high, covered and overhung with dark luxuriant foliage of a tropical climate, with green festoons drooping to the water from that height. Unfortunately, as in all the rivers on this shore, the bar at the entrance had only six feet water on it. The cliffs are whitened by stalactites, from which water is continually dropping. Some parts had ten or fifteen fathoms. The rate of the current we found about one and a half knots, so that the river is the worst part; and when the sea breezes are light, vessels have been several days warping up. Near the land is a remarkably warm spring from which steam is continually rising. On the north shore we found the remains of a flourishing settlement. The Caribs had been driven off by the government of central America, who treat these poor creatures as the northern states treat all people of colour. Both Caribs and negroes seem glad to escape from lands of liberty! The former are now dispersed over the coast of British Yucatan, chiefly

at North Standing creek. They are a hardworking orderly race, will soon supply Belize with stock and vegetables, and are considered an acquisition to the colony. Many are engaged in cutting mahogany. Even the females go out to Glover's reef, a distance of twenty-five miles in very small canoes, in the turtling season. Game abounds in this part. The wild turkeys are very large, and much superior in flavour to the tame ones of Europe. Jew-fish are also abundant, and are considered the best fish in the country; striking them with a small barbed spear affords good sport: they will never take the hook unless it is baited with a live fish: some weigh 200 or 300 pounds: in flavour, they resemble the north sea cod more than other British fish. At this season, June, the sea breezes may be expected about nine or ten o'clock, and may be depended on for blowing strong until sunset. The land wind is equally regular, although less strong.

The gulfett between the upper and lower narrows is remarkable for the even depth of twelve or fourteen feet all over, and its innumerable mangrove creeks; from which we may suppose that the salt water flows up as far as fort St. Philip, because mangroves are said not to grow in water quite fresh. It evident from weeds now on trees, that with particular winds, probably northers, or after heavy rain, the water in this and the gulf is eighteen or twenty inches higher a great portion of the year than it is at present; also, that it is gaining on the land, as several large trees are now standing twenty and thirty yards from the present coast line. Mr. Croscay, an American merchant, has considerable grants of land round the gulf from the present government, with liberty to cut mahogany everywhere. The quantity cut and shipped, with a gang of twelve hands, annually loaded four or five schooners. This proves its being very near and plentiful, compared with the amazing distance our cutters have to work their logs. The merchants at Belize would surely find it much to their interest to gain a footing in this land of plenty.

On reaching Fort St. Philip, we found that the guard had been lately augmented to about a dozen ill-looking fellows doing duty as soldiers. They are but little superior to the naked generals and colonels of the Mosquito tribe, whose only emblem of rank is a purser's hat with ribands, something like a recruit at a village fair in England! The commandant is said to be a tailor by trade, and an amusing scene it was to see him receive the consul, who, before landing, gave us a lecture on the necessity of paying proper respect to all parties in authority! He accordingly landed in full dress, and, with cocked hat in hand, began bowing to the astonished tailor, who stood staring in his shirt sleeves in utter amazement. He was much better pleased with a glass of grog that we gave him afterwards, than with all the consul's politeness! Having obtained his permission to pass, we got under way, and beat well up in the night to Isabel, and anchored off the village about ten, A.M. The place we observed at,

was M. Puelios's house, the principal, and indeed, only native merchant conducting the carrying trade to, and from, Guatemala. His clerks were busy making ball cartridges to protect the store from the depredations of the muleteers, property being very insecure under the present government. The mules carry over British and American merchandize, and return laden with sarsaparilla and indigo, which is shipped in small trading vessels to Belize. At the N.W. extreme are the five mouths of the celebrated Polichique river, navigable for large boats, to within a few leagues of Guatemala. The creeks and rivers abound with alligators; we frequently saw ten or twelve above the water at one time; large guanas are so plentiful, that a sportsman may easily supply a vessel's crew, and they make excellent seapies, with the addition of monkeys! The trees here are very high, I think at least 200 feet. The lonely and dreary stillness that prevails, is now and then interrupted by the hideous howling of the large black monkeys; the noise of which animals can be heard several miles off, and much resembles the growling of tigers. The village of Isabel is pleasantly situated at the foot of the Mica mountains, surrounded by rivulets of excellent cool water. It is reported to be a very sickly place, but it is difficult to imagine what can make it so. The huts are of bamboo, with thatched roofs, and are inhabited chiefly by females, the families of the muleteers who cross to Guatemala: their dress on holidays is very gay, being of white cotton, with broad flounces of red, just above the hip. These people appear to be a mixture of Spaniards, Indians, and negroes; and every way inferior to the fishermen on the coast; those about Cape Catouch, have open, pleasing countenances, and are strikingly alike, as if of one family, and altogether a purer race.

The weather is very oppressive from eleven, A.M., to two P.M. The thermometer is then 88° and 75° at daylight. This is about the difference of the creek water, and that which is in the gulf; just before sun-set it blows strong enough to make the riding off Isabel very rough. We generally took the creeks at night; and for refitting, the coves near the N.W. part of the gulf are best. We observed no place of worship, or even a priest among these people, it is probable they have no form of religion whatever!

T. S.

A VISIT TO THE GEYSERS OF ICELAND. *By John Barrow, Esq.*

It was about four o'clock in the afternoon when we arrived on the ground, and none but those who have witnessed the scene can imagine the impatience we felt to be favoured with one of those grand exhibitions which some few of our countrymen have seen with wonder and delight. But if we were doomed to experience a painful state of suspense, the party who had passed us on the road, and who had

reached the spot a short time before us, were pretty much in the same state of anxiety as ourselves, waiting for a burst from some of the boiling cauldrons. Another party informed us that after about twenty-four hours' expectation they had been gratified by a splendid eruption from the great Geyser, which had thrown up a jet of a vast body of water to the height of about forty feet; and though this is not more than half the height to which the column usually rises, satisfied with this single exhibition they were just on the eve of taking their departure. The great Geyser is situated on a mound which rises considerably above the surface of the plain, and slopes on all sides to the distance of a hundred feet or thereabout, from the borders of the large basin on its summit; and in the centre of this basin, forming as it were a gigantic funnel, there is a pipe or tube, up which the boiling water rises, and the eruptions burst forth. The basin or bowl of this funnel is from four to five feet deep, sloping a little like a saucer towards the central tube. Into this basin the water had flowed to within a foot and a half of the brim when we visited it. As it was gradually rising we remained on the spot till it overflowed, which we were told was a certain sign of an eruption being about to take place; the more certain as a bubbling or boiling up of the water was observed over the mouth of the tube at the same time. The temperature of the water in the basin at this period, as far as I could reach to plunge in the thermometer, was from 180 to 190 of Fahrenheit.

After anxiously waiting a considerable time, instead of that grand burst we had expected to take place, to our great mortification the water began gradually to subside, and did not cease to diminish till the basin was left quite dry. I had now, however, an opportunity of taking the dimensions of the basin and its pipe, the former of which was found, from actual measurement, to be fifty-six feet in the greatest diameter, and fifty-two feet in the narrowest; and the greatest depth about four feet. The shaft or tube in the middle, at the upper and shelving part was found to be $18\frac{1}{2}$ feet one way, and sixteen feet the other; but it narrows considerably at a little distance from the the mouth, and appears to be not more than ten or twelve feet in diameter. I measured its depth on two; on one I found it to be sixty-seven feet, and on the other a little more than seventy. The sides of the tube are smoothly polished, probably by the constant friction of the water, which is also the case with the floor of the basin, the surface of which is perfectly smooth and even, and has the appearance in parts of agate, and is so hard, that I was unable to detach a single piece with a hammer. It is difficult to imagine in what manner this capricious tube, perfectly perpendicular, has first been shaped, and equally so now the smooth crust with which it is lined has been laid on, whether at once, or by successive depositions of the laminæ of silicious matter. The lining of the bowl or basin would appear to be of more easy explanation; the water remaining

therein quiescent may deposit its silica undisturbed, but in the pipe of the funnel it is always bubbling or boiling, sometimes higher, or sometimes lower, or exploding steam and water. But after all, that which is the most difficult to comprehend is this, that the water of the Geyser is perfectly clear, and gives no deposit without the application of chemical tests, and then only in the smallest possible quantity; it may be kept for years in bottles without depositing the least sediment.

It becomes a question, then, how such a quantity of silicious matter is deposited, not only in the tube and floor of the basin, but also on its rim and border, which forms the highest part of the mound.

The matter here deposited is abundant, and appears to be constantly forming; and as this rim is out of the reach of the hot water, except in one spot, it would appear that the deposit is from the condensed steam or vapour, which is the more probable from the extreme delicacy of the effervescence.

The silicious incrustations that are here formed extend to the whole distance down the slope of the mound around the brim, and several yards below it. They consist of little tufts or knobs, grouped in such a manner as to bear a resemblance, in which all agree who have spoken of them, to the heads of cauliflowers; or the composition, but not the colour of the coxcomb, or amaranthus, may come as near to them. These depositions are of so delicate a texture that we found it quite impossible to bring away any of them, in their perfect state, without damaging the minute crystalline effervescence with which they were beautifully covered; they generally, however, harden with time, and become a compact silicious stone, of a brownish tint, but white within. On one side of the margin of the basin, where there is a channel for the water to escape when it overflows, these silicious incrustations, from the constant moisture of the steam, remain soft, and are crushed under the feet when trod upon, and will not bear taking up without falling to pieces. This delicate deposit is pure silica, and may, with propriety, be called what it really is, silicious *sinter*; or, which is but another expression for the same thing, silicious *travestin*; the only difference of the substance well known under this name being that the one in question is a deposition of flint, and the other of lime.

The stream of water that flows from the basin, finds its way down the slope of the mound, and at the foot thereof, divides itself into two branches, which empty themselves into the *Hvil-aa*, or White River. On the margins of these little streams are found, in abundance, the most extraordinary and beautiful incrustations that can be conceived, which, like those on the margin of the basin, would appear to be owing to the steam and spray that accompany the water, rather than to the water itself. Along the banks of these occasional streamlets, the grasses and the various aquatic plants are all covered with incrus-

tations, some of which were exquisitely beautiful, but so delicate, that with every possible care, I found it was utterly impossible to bring any of them away in a perfect state to the Reikinvik.

Every sort of adventitious fragment, whether of pieces of wood, bones, or horns of animals, were here found in a silicified state, and among other things, by the edge of the stream, I met with a piece of printed paper, which, with the letters perfectly legible, exhibited a thin plate of transparent silix, giving it the appearance of a child's horn-book, but the moment it was removed, it fell in pieces. Previous to our departure, the governor had shown to me a worsted stocking, which, by laying on the banks of this streamlet about six months, had been completely converted into a stone, as had also a blue handkerchief, which exhibited all the cheques and colours of the original; and these were solid enough to bear handling, and as hard as silix itself. I must observe, however, that these streams are lined with a white silicious stone, of a close compact texture, resembling pure white marble, which continues down to their junction with Huil-aa.

We had shot some plovers and curlews on our way to this place, which we ordered to be boiled in the basin of the great Geyser, and they were sufficiently cooked in twenty minutes, the temperature of the water continuing to vary from 180 to 190 of Fahrenheit.

The steam arising from this, as well as all the Geysers, is sensibly, but not very strongly, impregnated with the smell of sulphur, and our guides told us the birds would taste of it so strongly as not to be eatable; but whether our appetites were sharp, or our senses dull, we did not, by any means, find this to be the case, nor could we perceive the slightest taste of sulphur.

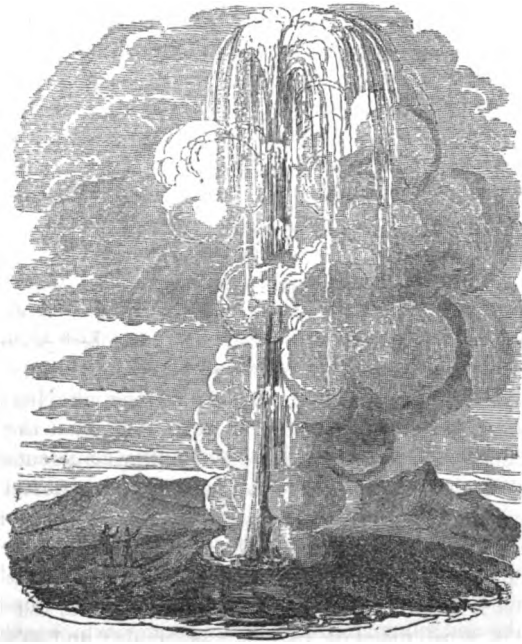
Dr. Holland in his M.S. journal, which he has kindly lent me, thus describes this "singularly curious and remarkable fountain:" "A basin, not less than twenty-six feet in length, and eight or ten inches width, is filled almost to its brim with water, in a state approaching to ebullition. The appearances produced in the inside of this basin are highly beautiful. The water is extremely clear and transparent, and allows the eye to penetrate to a great depth along the perpendicularly descending sides, which are every where lined with an incrustation projecting outwards into a variety of forms. The basin is traversed about its middle by a narrow arch, appearing to be composed entirely of incrustation, but so slight as to render it dangerous, if not impossible, to cross it in this way. Neither description nor drawing are capable of giving a sufficient idea of the singularity and beauty of this spot."

This day, the 4th of August, as well as the former one, passed over without any fresh symptoms of an explosion from the great Geyser. Annoying as this was in the extreme, we had so much set our minds on an exhibition of its powers as to come to a determination not to

quit the spot till we had received that gratification, though we had nearly got to the end of our provisions without the means of recruiting them. A Norwegian servant of Mr. Knudtson was as anxious as ourselves,—indeed so much so that he sat up all night, and fortunately he did so, for about three o'clock in the morning, when we were fast asleep, having been kept awake the greater part of the preceding night by the rumbling noise under the earth at different periods, he hastily entered the tent, and said, that from the incessant noise and violent rushing of the steam, he had no doubt that an eruption was about to take place. We were, of course, instantly on our legs, and just as we arrived at the spot a few jets were thrown up to no great height, and we were once more making up our minds to another disappointment, when suddenly, as if by a violent effort, the shaft discharged a full column of water and steam, the former mounting, in a grand mass, to the height, as we estimated it, of between seventy and eighty feet. I must observe, however, it is but an estimate as the rolling volumes of steam generally enveloped the columns of water, and accompanied it to the very highest point, so that it was not easy to get a fair view of it, much less to measure it with any degree of certainty; but I feel pretty confident that I have not overstated the height. I may here observe, that these rolling clouds, which in common parlance I have called steam, are not that pure, unmixed steam which is constantly converted into moisture, and vanishes when it escapes into the open air, like that which is let off from the boilers of steam engines, but is here accompanied by a kind of smoke and spray from the boiling water which require some little time to melt away, and leave the atmosphere clear.

No sooner was the eruption over, and the water had subsided into the shaft, the stream continuing to arise, than the birds of Odin made their appearance, and perched themselves on the margin of the basin, on the leeward side, while we were standing on the opposite side, not twenty yards distant; I could not learn from our guides that any sacred character was attached to this bird, but as already stated, it is considered as a bird of ill omen. Their remarkable confidence in man may probably be taken as a proof, that they are not molested by him. As a further proof of this, one of our party sent a ball through one of a large group assembled on the beach Reikinvik, which had shewn great confidence, but after this circumstance, they avoided us in such a way, that it was quite impossible to come near them. The farmers watch their movements, but seem to be afraid to take measures to destroy them, and yet they are among their greatest enemies; they are always on the watch during the lambing season, to pounce upon, and carry off, young lambs; in the winter especially, they hover over the farm-houses, seizing everything they can lay their claws upon, and will not be driven away, indeed, they sometimes hovered over us in such a manner, as if they were only waiting for an opportunity to pounce

upon us. The icelandic raven is a very powerful bird, much larger and stronger than those in the more southern parts of Europe.



The annexed sketch is the best representation I am able to produce, and it is but fair to confess, that it is done chiefly from the recollection of an object which is not easily nor soon effaced from the memory. The beholder, is in fact, astounded by the incessant noise and rapid motion of so vast a column of water, darted with so much violence and velocity into the air, and is quite unprepared to give anything like a faithful sketch of the infinite changes of form and colour which both the water and the stream assume.—*Barrow's visit to Iceland.*

[There are numerous boiling springs, such as the Geysers, in the south district of the island, which throw up at periodical intervals, columns of boiling water, more than ten feet in diameter, and above 200 feet in height, preceded by a loud report, like that of artillery; the reykium, and the sulphur springs of Kriswoik are near the southwest coast; those of Reykiadal in the west district; and those of Reykiahverf and Krabla, in the north. There are also floods or bogs of boiling mud, numerous cones and craters of volcanoes now quiescent, and columns of dense smoke and steam issuing from many spots. The whole island seems to be of volcanic formation, and there are still numerous volcanoes in full activity. In the year 1755, an erup-

tion from the volcano Katlegia, near the east coast, destroyed fifty farms. In 1783, a still more terrible eruption from the Ikeidara, and other volcanoes of the Klofa Jökul ridge covered several fertile districts with lava; the ashes and the effluvia corrupted the water and the atmosphere all around, the fishes were driven away from that part of the coast, and famine and pestilence followed, which, in two years, carried off 9,000 people, and destroyed thousands of horses and cattle. The eruptions of Mount Hecla are frequent, but not so violent or destructive. The highest mountain in Iceland is believed to be the Inöefell Yökul, which rises in one of the western peninsulas, near the village or factory of Stappen, and is reckoned to be 6,862 feet high; Mount Hecla is 5,210 feet.—*Penny Cyclopaedia.*]

THE ATMOSPHERIC PHENOMENON SEEN NEAR THE EQUATOR,
North Atlantic.

THE phenomenon mentioned by Captain Burnett, in *Nautical Magazine*, No. 5, for May, 1837, p. 291., as occurring near the line, may have been occasioned by either of the two following circumstances:—By the finer particles of the loose sand of the great desert of Africa, the Sahara, or by the impalpable powder thrown up by volcanic action from one of the Cape Verd islands, and being borne seaward by the wind. On account of the red colour, the latter is the most probable; volcanic dust is known to have been transported from the locality of its issue, to a great distance by currents of air; and as the volcano of Fuego, or St. Philip, is the nearest fiery mount in action, to the position where the phenomenon was observed, it may be concluded, that from that island, the powder was discharged. The town of Luz, in the same island, is in $14^{\circ} 53' N.$, and $24^{\circ} 34' W.$, about 500 miles northerly of the ship's place, which is not too remote to preclude the possibility of the dust being conveyed that distance by a brisk wind.

That part of the coast of Africa which lies between the 20th and 32nd degrees of north latitude, is a desert country, interspersed with immense hills of loose sand, which are from time to time, driven by the wind into various forms, and so impregnate the air with sand for many miles out to sea, as to give the atmosphere an appearance of hazy weather. Navigators, not aware of this circumstance, never suspect, during such appearances, that they are near land, until they discover the breakers on the coast, which is so extremely flat, that one may walk a mile into the sea, without being over the knees, so that ships strike when a considerable distance from the beach; added to this, there is a current which sets in from the west towards Africa, with inconceivable force and rapidity, with which the navigator being generally unacquainted, (at the present day the easterly current setting upon this coast is well known,) he loses his reckoning, and in the

course of a night, perhaps, when he expects to clear the African coast in his passage southward, he is alarmed with the appearance of shoal-water, and before he has time to recover himself, finds his ship aground on a desert shore, where neither habitation nor human being are visible.

The American Captain Paddock, who had the misfortune to be wrecked upon this coast, states when in latitude 29° , that the weather was *smokey*, and that although the horizon was definable, the state of the atmosphere was such, that land could not have been seen at a great distance. In 1817, the French surveyor, Baron Roussin, states, that numberless difficulties occurred in the prosecution of his operations, among which was the thick fog, or haze, that prevails almost all the year on the coasts of N.W. Africa. It is produced by the sands which the winds raise from the deserts. So long as the wind keeps a direction nearly parallel to the coast, the haze reaches only a little distance beyond it, but when the *harmattan* takes place, (in January, February, March, and often even in April,) the sands brought directly from the interior by this wind, which blows from the N.E. to the E.N.E., spread through the atmosphere, and rise to a great height, forming tornados, with a thick smoke-like appearance, similar to that which succeeds a strong explosion. All objects are then obscured inland, the sight will not reach a mile, nor can any star be discerned in the sky, unless it be 30° above the horizon.

It may be as well to add this officer's further remarks, for the benefit of those who navigate this part of the ocean: other difficulties arose from the nature of the coast, which is low and full of shoals, so that it was like a voyage of discovery, and little better than sailing in seas altogether unknown.

The extreme heat common to these sandy tracts, almost under water, gives rise to a phenomenon that might almost be termed permanent, and which altered the distances of the stars from the horizon in spite of our endeavours to ascertain them.—It was an horizontal refraction so strong, and at the same time so irregular, that it not only prevented our calculating altitudes within $8'$ or $9'$, but we even could not be sure of keeping it steady during the time of observation. This source of error is attended with another difficulty—that it is not even liable to be suspected—it is only discernible to observers, whose labours form a regular uninterrupted series with all the parts in mutual connexion.

Captain Burnett's opinion that some of the *vigias* reported as having been seen at night, may have been nothing more than parts of wrecks with a phosphorescent appearance, may be correct; but, the disregard of reported dangers which have been observed in broad daylight, on account of these not being seen afterwards by casual passers-by, would probably be a hazardous determination for any man who ploughs the ocean far and near, to adhere to too rigidly.

Every one maintains his own opinion, until he is convinced that it is not right; and he is justified in upholding it until then, when the resignation would become creditable; for, assuredly it would be no display of wisdom, like Goldsmith's parson, though convinced, to argue still in support of the contested point. When trying for soundings near the site of a supposed danger, such for instance as the pinnacle of a rock in the open ocean, however the striking of the bottom may confirm the report of its existence, the failure of such would not be substantially conclusive of any doubt that might have been entertained about its reality, for these cogent reasons: rocks may be upheved from a depth not to be reached by the sounding lines in ordinary use, or, a primeval pyramidal summit of some sub-marine mountain may be fixed from a depth of from 500 to 1,000 feet, and therefore, its base lie beyond the reach of the deep-sea lead!

But, it is a very wise and provident adage current throughout the world, that, *of two evils, choose the least*; this is so palpably just, that no man can deny it, yet strange to say, it is not always followed! Another saying applicable to our subject, is equally as hackneyed as the former, but as little practised; *precaution is the parent of security*; and how often, nay, perpetually, do we hear doleful lamentations of the neglect of this most pithy apothegm! Our sailors, too, are in possession of a cautionary, and withal a very significant practical compound word, explicative of the moral obligation for dismissing a too "tight-laced" confidence in our own opinions in matters where nothing is certain, save *death*—to wit, the good old English *look-out*!

In those seas where the coralline zoophyte works its way upwards from the depths of ocean, new shoals may be expected to be occasionally discovered. This is no longer a matter of conjecture, but confirmed by observed facts, as most seamen are now aware. In those parts of the ocean too, where sub-marine volcanic action exists, and there is every reason for believing that these operations are not confined to the immediate shores of continents and islands, but take place in various parts of the bed of the ocean, rocks, islets, and even islands, may be expected to arise. In the former case, of course, where the shoals are not based on volcanic knolls, they will not only be permanent in their positions, but be progressively on the increase in certain parts; in the latter, the rocks and islets may *come and go*, play at *boo-peep*, as it were, for the edification of the unbelievers of the oceanic vigiæ! We were once on the track wherein the charts generally place the isle of Enckuysen, the existence of which was, nevertheless, considered as *very doubtful*. In our course, we must have passed *directly over* the point wherein the chart of Bellin places it. As the problem of its existence was a matter of some interest to resolve, and we could effect it without going out of our course, we stationed some of our company on the look-out. At nightfall, some of the men gave notice of a shoal, or ridge, a-head, but it proved to

be only the carcass of a dead whale, covered with petrels and sea-gulls. Next day (May 12th) we discovered land; it was in *reality* the isle of Enckuysen, to the N.N.W. of us, at the distance of about two and a half leagues. We fixed its position at $64^{\circ} 54' N.$ and $12^{\circ} 48' W.$

This island, generally placed in the charts much too westerly of its real position, and too near the coast of Iceland, appeared to us to be about four leagues in extent, in the direction of N.N.E. and S.S.W.; it has just elevation enough not to render the approach dangerous.

The positions of the rocks and shoals, which were discovered before the general use of chronometers and lunar observations for determining the longitude, may be distrusted, but this cannot warrant us in discarding them, until persevering search has determined their non-existence, as they may still be found in another place like the isle of Enckuysen.

MIRA-POR-VOS.

THE PILOTAGE BILL.

November, 1838.

MR. EDITOR,—I am glad to see you have found another correspondent, who expresses himself (in your Number of this month) so exactly according to my way of thinking on the subject of Pilotage. Aided by “Soundings” I might well leave the lengthy article of “a Pilot,” in your October number, without the trouble of a contradiction, but having a little leisure, and thinking the subject of some importance, I shall take the liberty of showing the “Pilot” that his assertion of my knowing nothing about the subject, and such other discourteous statements, will not do in the place of argument, of which his whole letter is entirely deficient, and in lieu thereof, is full of statements, either not correct, or such as are only fit for old women. All that can be written in favour of continuing the old state of things, admits in few words, of such an answer, as I defy any one to find fault with, (except the pilots themselves;) what I contend for is, *that every master of a ship, who passes an examination which proves him fit for the task, may be allowed to pilot his own ship.*

The Pilot, however, having assumed a very high tone, and one which is not unlikely to mislead, I shall take the liberty of remarking thereon, and leave it to your readers to judge, whether or not, I take the right view of the subject, and one according with common sense; or whether I am the *ignoramus* he is pleased to consider me.

In the first place I will notice the astounding fact, which the Pilot backs with the opinion of some nameless “M.P.” and elder brother of the Trinity House, that to constitute a good pilot, “requires an age of experience;” thus making it out, that there are no pilots fit

to be trusted with the charge of a ship but such as have attained the very limits of human life! This is the old school with a vengeance; I am no boy myself, to set at nought the value of experience, but were I so disposed, (which I am not,) if I were to set to work and study the bearings and distances of the buoys, and the marks for them, and for the channels—sets of tides, &c., in a month, with the use of a smack, to be employed that time at my disposal, I would know as much of any piece of pilotage water as any pilot in existence. Why, these men would make us believe that there is so much wisdom collected in their noddles that nobody else but themselves, can by possibility know anything; when we in point of fact see all the coasting trade conducted through the most difficult of their pilotage water, by a set of men, many of whom can hardly read or write, and the pilot at any time when he is conducting a ship from London to the Downs, (if he will not shut his eyes,) may see for one vessel with one of these exclusively clever men on board, a hundred conducted by coasting masters, fishermen, &c., &c., most of whose apprentices, know every buoy and mark for the whole distance! There was, a few weeks back, a statement in the newspapers, of one of H.M. steamers *under the care of a pilot* having been stuck fast on shore in Gravesend Reach, where, as the same paper observed, “every Colliers’ boy knew there was shoal water.”*

The “Pilot” foully libels the masters of colliers and coasters when he says, “that they have their special men to conduct them in the Thames.” There is not one of any standing that gives up his charge to any one; and this the Pilot must know right well.

If the Pilot would take the trouble of reading what I have previously written, in your Nautical, Mr. Editor, on this matter, he would find that so far from my arrogating to myself “superior wisdom,” I have included *myself* in the number of those whose ignorance I deplore “in their want of knowledge of our ports,” and this arising “from the constant presence of pilots,” which I repeat can have no other tendency, but that which I have attributed to it. He then goes on to state, that “nearly the whole of our harbours are bar-harbours,” which he supposes me to have forgotten, “and that no one of course but the pilots can possibly know the state of the bar,” &c. &c. It is certainly new to me, that nearly all our harbours are of this description. Is the Thames a bar-harbour? Is Portsmouth another? Will he call Plymouth, Falmouth, Bristol, Milford, Liverpool, the Clyde, the Frith of Forth, the Humber bar-harbours? Is there, in fact, one of our great sea ports of this description? and, I ask, from every one of these ports, are there not daily immense sailings, and arrivals

* A very short time back I witnessed “a regular Pilot” hail a fisherman in a fog, and enquire the position of the Smack. He was answered, and quite to the point, by a *lad* who happened to have the look-out.

of vessels conducted by their own masters? But forsooth "*if a ship is going foreign,*" which is perhaps one in one hundred, as compared to the others, she must be taken charge of by a pilot; however able the master may be to dispense with such service. It is really monstrous to suppose, that by no possible practice, attention, and skill, can this unfortunate wight who commands the ship "going foreign," ever arrive at that stage of necessary knowledge of the port he trades from, so as to be capable of the charge he sees taken of his own vessel by the masters of the immense fleet of coasters so invariably accompanying him. If he has previously commanded a coaster, *the knowledge he then was admitted to possess, abandons him the moment he goes foreign!* I repeat my statement, that "from the constant employment of pilots there is not one in five hundred of the officers in the foreign trade, who perfectly understands the management of a ship at single anchor," and I state this from some experience, and I assert that the "Pilot's" remarks on this my assertion, are not only vague, but may bring in question his own observation, experience, and even his seamanship. Suppose there to be, as he imagines, "200 sail of ships lying in the Downs and at the Motherbank with only ten pilots on board." How great a proportion of these are coasters? How many beyond the ten having pilots on board "are in the foreign trade?" and how large a proportion probably under charge of old masters, and moreover the assemblage of such a fleet is caused by westerly winds, in which case, in the Downs, the ship will take pretty good care not to foul her anchor, *but will swing herself.* As to the Motherbank, I myself have witnessed an instance of a ship lying there some months, during which she never fouled her anchor; although to my own certain knowledge, there was not an officer on board of her who could ever tell where the anchor was, except on the lee tide. This will I think, serve to show, that at these anchorages, if they are such as the "Pilot" describes them to be, namely, "as bad for fouling anchors as any on our coasts," (which I deny); this will serve to show that the ships are held in them as much at all events by good luck, as good management; and that they do hold on so well, as the "Pilot" asserts them to do, he seems to forget, may in a great measure be accounted for, by the little tendency a ship has to come near her anchor, with a good scope of iron cable.

The "Pilot" ought to know that the masters of men-of-war *do* pilot their ships very often, and that they are obliged to pass for the ports in the channel; and that *they do not* "take pilots whenever they can get them." They used to be allowed half-pilotage when they took charge of their ships in pilotage water; but this allowance has been done away.

The fear of losing his warrant, or what is the same thing, that it will become useless, has led "the Pilot" into the adoption of a certain style in remarking upon my letters, which if persevered in, will prevent

me noticing a repetition of his argument. If, however, he has anything to adduce to the point, and he can bring himself to do so in a proper spirit, I promise him he shall not want a reply from

Your obedient Servant,

A SKIPPER.

Naval Chronicle.

MONTHLY GOSSIP.—Here, Mr. Editor, here is a *morceau* for you from the *Hampshire Telegraph*, it is worth preserving in the *Nautical*. It originally appeared in the *West Devon Conservative* :—

“The Commander of a ship in the Mediterranean has disgraced a mate three and a half years passed, to an A. B., because he did not, while aloft in the main-top, obey an order given him from the deck, and which the mate did not hear; he also ordered him to be turned out of his mess, and to mess on his chest, and his messmates not to speak to him at their peril. We suspect the disgrating is against the naval regulations; such a stretch of power can only be exercised by the Commander-in-Chief, or the Admiralty, upon a complaint of the captain. The same officer for the most trivial offence on the part of any of his men, sends for their certificates and writes his complaints thereon against them, thus rendering it utterly impossible that any future good conduct on the part of the man can be beneficial to him. One man so served has been sixteen years at sea with a good character but any further service may be utterly useless to him. Such conduct is not the way to aid in the encouragement of seamen to enter into the service. The log-book of the ship exhibits occasionally, a whole page of invective against an officer, if his high mightiness thinks his conduct reprehensible.”

The comments of the *Telegraph* are quite in accordance with my opinion of the proceeding; it is both unauthorized and vindictive. With regard to the men, it is a downright cruelty, literally depriving them of their claims for past services, when they are worn out and can no longer do a seaman's duty, and who, if they cannot look up to their captains as *friends*, to serve them at such a time, are friendless indeed. I will venture to say, Mr. Editor, that there is not a captain in Her Majesty's navy who has the heart of a British seaman about him, that will not feel disgust at the measure, and look on it both as unlawful and tyrannical. A pretty mode this indeed of making the navy popular among seamen, at a time too when they are wanted, and this is the way, is it, to raise the character of naval officers among them, as desirable persons to serve with? When will some officers learn that the captain should be the father of his ship's company?

But with regard to seamen in general Mr. Editor, there can be no doubt, that they have not yet received that attention which a maritime country should afford. Independent of Greenwich Hospital, which is an exclusive establishment for those of the Royal Navy, where is the asylum that the seamen can look forward to in his youth, and retire to in age? Does the great metropolis of this

maritime country afford it? Do her merchants, who gain their wealth by his labours, set apart any of it for its maintenance, or even towards forming it? Is there such a thing to be found in the maritime ports of this country? The answer is No; he is left to his own reckless and improvident habits to lay by for himself in his old age, a course expected of him inconsistent with his nature.

Mr. Alderman Pirie, of London, is reported to have said, on a late occasion, concerning some Guernsey sailors which had fallen under the care of the late Lord Mayor, Sir John Cowan, that, "the only thing he regretted in cases of this kind, was the want of an asylum in the city (of London) for shipwrecked sailors, that obliged a magistrate to send applicants to be taken care of in a prison, the name of which was disagreeable to honest men." No wonder; what business have honest men in prison. The case is simply this:—The barque Albion of Guernsey being wrecked in November last, her crew were sent to London by the British Consul at Boulogne, having been saved by a French fishing boat. On the case being stated to the city magistrate, they were ordered to the Compter, another name for a prison, where they remained until they were forwarded on to Guernsey by the house of Dobree, on the credit of the owners of the Albion. On their arrival at Guernsey, the circumstance of their being lodged in a prison, (for the Compter as it is called, appears to be nothing more,) is blazed abroad in a Guernsey paper, much is made, (exaggerated no doubt) of the food and supposed confinement, and falling under the Alderman's observation, he is said to have expressed himself as above stated. Now if the worthy Alderman will exert himself to get the "want" which he has regretted, the deficiency of an asylum in London, supplied, he will be doing the state a service, and will call forth the blessing of many an honest tar. It would be a glorious and noble achievement for the Lord Mayor and Aldermen of the City of London, to draw forth the slumbering energies of the wealthy merchants, and in concert with them, to establish this long wanted asylum. But the business must (if done at all) be set about in earnest, by numbers, not by ones or twos, but by the whole of the wealthy community of the metropolis. It has been said, that "England lives everywhere, breathes everywhere, is everywhere vulnerable, and on the first principle of self-defence, is bound to be everywhere watchful, nay to be everywhere in case of necessity, armed;" and to what class of men is England more indebted to for all this, than to her sailors? They too must be armed, but before they are armed, they must be found, and the first and best method of finding them when they are wanted, is to take care of them when we have them, and provide asylums for them. It is a question, Mr. Editor, which treat it as you will, is one of paramount importance to this country. While our navy is manned, we are invulnerable, but when that is gone, woe betide us; and our navy, remember, is to be manned with seamen. But the Alderman, if he takes such a measure in hand, will not be without fellow-labourers in the field. There are two worthy captains of the navy, who have long been endeavouring to form such an establishment. The valuable labours of Captain Elliott and Captain Marshall, in the city of London, have achieved much in this way; but they have not succeeded in placing their respective institutions on solid and firm bases. And why not? because they have not received that cordial and *general*

support which should have been given to them. Appeal to seamen; they may, in the hour of prosperity, who gladly come to them in the hour of adversity; but they appeal to weathercocks, (weather beaten tars, though they be,) which are obedient to every gale of novel allurements, aye at the expense of their health, their wealth, and their morals, and as yielding as that easy going machine, they turn to the gale, and on they go with it headlong and heedless to their destruction. And then they are not to be found when they are wanted. No, there is no asylum for them, as there should be in every seaport town of the country. I must leave this for the discussion of your more able correspondents, having other matter for the attention of "Argus."

I referred in my last to the real cause of the swamping of wherries, and the sinking of barges, namely, the overloading of these, and the improperly low gunwales of the others. It was with a view, I suppose, of protecting these nutshells, among various other designs, that the Waterman's Act was obtained. Among other by-laws, the following was made:—"Steam-boats are not to navigate between London bridge and Limehouse at a greater rate than five miles an hour," which by-law was confirmed as legal by Mr. Baron Vaughan in 1828; and which by-law, it may be added is in 1838 discovered to be rotten to the core. So complete a monopoly has this bill turned out, that unless the persons who navigate steam-boats on the river are free of the Waterman's Company, they can only run by *sufferance*! under a penalty of £10! There are besides several other monopolizing features, the working of which has attracted the attention of parliament to the bill, and a committee has inquired into it, and made the following report:—

"Upon a review of the evidence taken, the Committee have come to the following conclusions.

"1. That by the construction of the Acts of Parliament contended for on the part of the Waterman's Company, it would be in their power to prevent altogether the running of steam-boats on the river.

"2. That the improved mode of propelling vessels by the power of steam upon the river, has tended greatly to the accommodation of the public, who have been, and are eager to avail themselves of it, inasmuch as it appears that very nearly 2,000,000 of persons have within a twelvemonth gone by boats which have already been navigated upon the river, between Richmond and Gravesend: and the Committee further observe that a very large proportion of the persons who have so gone in the steam-boats, could not, would not, have gone upon the river in the ordinary mode of conveyance by a waterman's wherry.

"3. That the class of persons who are generally freemen of the Company, are not capable, either with respect to science, or to capital, of affording to the public such accommodation.

"4. That the several companies which have established and navigated steam-boats on the river, have afforded constant and profitable employment to a very large number of freemen of the Waterman's Company, and appear indeed, in practice, to have given almost a monopoly of employment upon, and about, those boats to such freemen, except upon such parts of the operations as such watermen are obviously not qualified or able to execute.

"5. That under these circumstances it appears to this Committee that some alteration of the law should take place, by which the power

of prohibition, now claimed by the Waterman's Company shall be taken away, and the right of establishing steam-boats on the river shall be open to all, who from their possession of the requisite capital and skill, shall be enabled to embark in such undertakings, subject to such regulations as may be necessary to insure the safety of the public, and with some provisions for the future employment of the freemen of the Waterman's Company in such steam-boats."

The above report will give your readers, Mr. Editor, a tolerably clear idea of the state of things, as far as steamers are concerned, on the river Thames. The Company appear to be absolute lords and masters of the river navigation, and in virtue of their bill possess a power which cannot be fully carried into effect, and which it is hoped in the next session of parliament we shall see "taken away."

The wreck of the poor Forfarshire, I perceive, has been sold by auction, "for the benefit of the underwriters," as the saying goes, and fetched altogether a sum of £500; far more than was expected. But the benefit of the public comes next, it is to be hoped, and will not be forgotten in the appointment of some authorized persons, to the office of inspecting steam-boats. A memorial to be presented from Glasgow, is to the effect of, "praying the Government to take into consideration without delay, the best means of giving additional safety to persons travelling by steam vessels." So reasonable a request must find support, and if another instance were wanted to show the necessity of a cure for the evil besides that of the Forfarshire, the still more recent one of the Northern yacht might be cited. She is said to have been not even sea worthy when she left Newcastle for Leith, and that with twenty-three persons on board; she is certainly lost; it is supposed off Berwick. These matters require looking into for a remedy; even the proprietors themselves, of good steamers, as well as the public, must desire it.

So the Liverpool steamer which started from Liverpool on the 20th of October for New York was obliged to put back, after being a week or eight days at sea, for want of fuel it is said, but want of power it may also be added, I believe, in the size of the vessel herself to stem the heavy sea which she met. The Great Western doesn't care for such weather as the Liverpool met with, because she is a larger and a more weighty vessel, and with proportionate power she is not so easily put off her course. However the Liverpool has started afresh, but her delay will cause some disappointments at New York. There is some talk of a company running steamers to Alexandria—the Great Western Company it is said are about to commence a line of large steamers to that place. Steam is fast revolutionizing the world, and under British skill and enterprize is to do wonders. There is a French commission I understand employed in examining the best means of improving the communication between London and Paris. It is said that we shall be able to reach the French capital from London in twelve hours; via, the Brighton railway, steam to Havre, and thence railway to Paris: *nous verrons*.

Talking of Paris, there is a commission engaged at the Academy of Sciences, in investigating a new alloy of zinc and copper, which will perhaps be applicable to sheathing of ships, and many branches of manufacture. Its cost, it is said, will be little more than that of zinc.

The Royal Humane Society has awarded silver medals to Messrs.

Smith and Palmer, two midshipmen of H. M. S., Seringapatam, for their noble conduct in swimming to the rescue of the crew of that ship's pinnace, when capsized lately in Antigua Bay. She was about two miles from the shore, and their heroism, which was happily successful, will be appreciated by those of your readers who are acquainted with those scourges of the sea, the West Indian sharks.

The Americans I see, talk of establishing a line of packets, from their coast to Chagres, to expedite the communication with the Pacific by Panama. This is quite right; the American trade in the Pacific is sufficient to warrant it, and the intercourse between the various South American and Mexican states, the shores of which are washed by the Pacific ocean, is likely to increase with all the rapidity which steam intercourse can effect. Mr. Wheelright is at work forming a company to carry this into effect, and his enterprising exertions, if he is not thwarted by the jealousies of those South American States, will amply succeed. He deserves your best support,* Mr. Editor, for the cause is that of humanity,—that of benefiting the human race.

With respect to foreign matters abroad on the ocean where the Nautical as “an aquatic bird is free to fly,” and “Argus” can throw a glance, matters have an unsettled appearance. Our ships in the West Indies have enough to do with the French blockade of Mexico, and in the Mediterranean the union of the Turkish and British squadrons is talked of as something *new*; true it may be so; people you know like something new now and then; and a novelty it was, no doubt, to see Admiral Sir Robert Stopford and the Captain Pacha (with his flag of two tails) reviewing their respective corps of Marines in company. The Royals, amounting to a thousand men, made a goodly show on that occasion, Mr. Editor, as they always do.

The question of communication with India seems to be progressing, as Jonathan has it. They appear to be stirring themselves in the neighbourhood of Alexandria, and the steamers for the way by the Cape are getting forward. Lieut. Kendall starts about the end of the year in one called the Queen of the East, as the first boat. By the bye this Queen of the East is fitting at Glasgow, by the side of the British Queen, fitting for the New York line, to be ready in the spring. Since my last, old Neptune has got a new plaything. What think you of an iron *ship*, as well as an iron steamboat. A report of her behaviour under canvass, Mr. Editor, would be a desirable thing for the Nautical, the twistings and strainings produced by the action of the masts, with the pressure of the *drapery* on them would be curious. They say she is as tight as a bottle and buoyant as a cork. Her name is the *Ironsides*, appropriate enough, you will say. Why shouldn't England have her “*iron walls*” as well as her “*wooden walls*.” She was built in Liverpool, that emporium of British enterprize, by Messrs. Jackson, Gordon, and Company, and as a model is a beautiful thing. Somewhat American about her bows, plenty of beam and a fine run. I give you her dimensions, as she is a curiosity, being the first of her kind entirely of iron, excepting her decks. She sailed about the middle of November

* We have received Mr. Wheelright's pamphlet, and in our volume for 1837, recorded our opinion of the plan &c., See p. 255.

for the Brazils.—Tonnage 271, old measure, beam 24 feet 6 in., depth of hold 13 feet 10 in., keel 99 feet.

It is said that the compass question in these vessels has been settled by the Rainbow; Mr. Airy, the Astronomer-Royal, having devised a method by which he has annihilated it. Can you inform me where I shall find an account of his process? as the variable nature of local attraction, according to localities, for instance being near the equator, as well as high northern or southern latitudes, renders the measure, if effectual, desirable to be known.* The Rainbow, by the bye, is making rapid passages between London and Antwerp, doing it in fifteen hours. The distance is about 190 miles I think, which would give her a rate of about twelve knots. Has the question of speed between American sea steamers and the Great Western been tried yet?† Mr. Redfield's flying squadron, I mean, mentioned in one of your recent numbers.

So the light of a steamer was actually mistaken for that of Dungeness, the other day, by a vessel coming up the channel. I saw something of the same kind about the Trinity-House yacht, in one number. Pray, Mr. Editor, lend your powerful aid in getting some law passed to regulate this matter in the course of next session. It is really too bad that matters of such importance should be left to caprice and whim, and that in one part of Great Britain one mode should be adopted, and another in another part, just because it is the fashion. You have already *shown up* some of their *glaring* defects. Talking of lights, only think of the Old Club-house at Cowes being lit up with a harbour light—this is not bad either—quite in keeping with the spirit of improvement which belongs to the present day: may be it will serve the amateurs of the yacht club on a pinch to light their cigars at!

Come, Mr. Argus, you will say, no *badinage*, if you please, on such a *luminous* matter; it is a useful measure. So it is, Mr. Editor, and Cowes harbour will rejoice in its brightness; so I send you the compass bearings‡ from it for the benefit of your readers. There is a new light at Lough Larne Harbour, and another somewhere in the Cattedag, the island of Hirtsholm I believe.

The severe weather which we have experienced in the course of this month has not been without its ill effects. On the eastern coast of England several fishing boats have been lost with their crews and a boat proceeding to the shore from the breakwater at Plymouth, was capsized in Catwater, by which twenty men were drowned, leaving widows and children to mourn their loss. The cause of humanity has not been pleaded in vain at these places; and it is right to mention that the twenty men at Plymouth being artificers, the Lords of the Admiralty have sent a hundred pounds to be distributed among their widows. Admiral Warren too, with a proper feeling of humanity, has given directions that in entering boys for the ordinary, the preference should be given to their children. How truly is it said "in the midst of life we are in death," and how often are we overtaken when we least expect it.

Your devoted ARGUS.

*We have no doubt an account of the Astronomer Royal's method will appear in the transactions of some learned Society in due time.—ED. N.M.

† We have not heard of any such trial of speed yet.—ED. N.M.

‡ Caleshot Castle N. by E. † E; buoys off the Brambles in the bearing N.N.E. White buoy off Old Castle Point, E. by S.

P.S. I have met with a paragraph in the daily papers, said to have been taken from an obscure country print, that I had no doubt would be contradicted before your December Number could be published, and so it is. But as such an injurious statement, as it contains, may remain uncontradicted where the *Nautical* reaches, I trust you will insert the following extract from the *Times*:—

In reference to a paragraph which was copied from the *Hampshire Independent*, describing a supposed mutiny on board of her Majesty's ship Sulphur, we have ascertained that there is no foundation whatever either for that statement or the imputations against Captain Belcher, the commander, which appear in that statement. The circumstances which have occurred on board of that ship, and out of which the statement seems to have arisen, are as follows:—On the voyage of the Sulphur from Realejo to Lima, where she arrived in the beginning of July, some circumstances occurred between Mr. Collinson and the captain, which led to the former being placed under arrest; and similar conduct took place on the part of the surgeon, which led to the same result; and both gentlemen, on their arrival at Lima, applied for a court-martial, which the Admiral on the station was not able to grant, but a court of inquiry was appointed, which ended in a justification of Captain Belcher. The surgeon having expressed his contrition, was reprimanded; Mr. Collinson was superseded, and is to be sent home. The voyage having been a long one, there was some discontent among the crew on account of a scarcity of provisions, and they desired a court of inquiry into the captain's conduct, which was allowed, but the evidence of the parties proved that the captain had been kind and humane in the exercise of his duty. The court honourably acquitted him, and the Commander-in-chief issued his public order to the squadron, to be read on board each ship, fully exonerating him. These facts are stated in a letter from Captain Belcher himself, which we have seen.—*Times*.

It is due in justice to Capt. Belcher, to confirm the above public proceedings resulting from the courts of enquiry which were held at Callao, and to add that the Commander-in-chief deprecated in strong terms the conduct of the parties implicated by them, and directed them after being severely punished to be discharged from her Majesty's service in *disgrace*. *Fiat justitia*, says ARGUS.

MASULAH BOATS AT MADRAS.

THE melancholy accidents which occurred at Madras, on the 27th and 28th May, 1837, when Mr. Phillips, officer of the *George the Fourth*, was drowned in the surf on the first occasion, and Colonel Passmore, his servant, and Mr. Queros, on the second occasion, have given rise to some animated and very trite remarks in the local papers, on the build and safety of the Masulah boats. One person recommends that rewards should be offered to any one who would undertake to *improve* the building of these boats; whilst another asserts that a remedy is already at hand by the *present* construction of these boats. He says, that they have all the qualifications which can be expected for taking the surf, and which is proved by their having stood the trial in crossing with whale-boats and others of a different build, when the former were found not so liable to broach to and ship water as the latter, which, either half filled with water, or capsized and broke

to pieces during the experiment. Another person suggests, whether Masulah boats would not ply across the surf with more ease and safety, if a rope (long enough to reach to the outer surf) were fastened to the boats, and attended by a number of persons stationed on the shore, to haul the boats in hand over hand instead of using oars. I presume it is not meant to pull the boats out by a line as they are much better worked, and under greater command by oars; besides, there is less danger in a boat going out *head* on to the surf, than if running on shore *before* it. Another person affirms, that if a rail was in some degree, *elevated and fixed all round the stern sheets* of the boat, the steersman would run less risk of being hove from his post. And again, another asserts, that if the Masulah boats were built *longer* and not so broad, or so deep, they would be much lighter and better adapted for the *usual* surf, and pull faster; and he recommends boats of a larger size, to be used when the surf is *high and dangerous*.

The present boats have about $3\frac{3}{4}$ feet flat bottom, and the whole of planks are sewn together with coir twist. The average dimensions of an accommodation boat, (which is a little larger than a common, or cargo boat) are as follows:—length over all, 31 feet 8 inches, breadth, 9 feet 2 inches; depth, 4 feet 5 inches; an accurate model of which, is in the possession of Sir F. Adam; (late governor of Madras,) or at the United-Service Museum, where a model paget, I believe, been presented by Captain Hall, of the Sir Edward Paget, as well as a model of a catamaran.

J.F.M.

CURRENTS OF THE OCEAN.

NOTWITHSTANDING the loose conclusions to be arrived at regarding the Currents of the Ocean from bottle papers, there is a degree of interest attending them, which confers on them a value, even if it were only from the circumstance of their travelling across many miles of the ocean, in their frail and brittle cases. Doubtless, however, they give the general direction of the prevailing surface current at the time of their periods. The following are some which we have lately picked up in the *Mariners' paper*—the “*Shipping Gazette* :”—Cork, Aug. 7.—A tin canister close sealed, was thrown in at Miltown Malbay in the last week, and the following memorandum found within it:—“New York packet Virginia, latitude 42 12 N., longitude 19 15 W., June 16, 1838.” The course of this from the point of departure to that of arrival was N. 60° E., distance 800 miles; interval fifty-two days, rate about fifteen miles per day. This, however, requires confirmation.

“A sealed bottle was picked up at Nieuport, near Ostend, on the 15th instant, containing a writing in English, to the effect that it had been thrown overboard from the British Queen, on the 10th August, ten days from New York, in lat. 55 33 N., long. 44 23 W., in order to ascertain the current of the ocean. The bottle had, therefore, drifted about 1,500 miles in two months.”—*Galignani's Messenger*.

There is evidently a mistake here, which, if this meets the eye of the person who threw it overboard, from the British Queen, we request he will correct.

On the 22nd August, a bottle was picked up on the coast of L'Abbaye, near Brest; it contained a note in English as follows:—"Sunday, July 16, 1838.—Thrown overboard from the schooner *Corsair*, Cuming of Plymouth, from Leghorn for Liverpool, in lat. 10 N., long. 8 3 W., all well. This is to ascertain the current." The current, therefore, sets N.E., in case other circumstances have not influenced the course of the bottle, which seems likely, for it has been thirty-seven days coming eighty marine leagues.—*Memorial Bordelais*. The course of this bottle has been about, S. 45° E., 205 miles, interval thirty-seven days, rate about six miles per day; showing the southerly set at the entrance of the English channel.

A bottle was found on the 2nd instant, at Iramore, near Dunfanaghy, county Donegal, after traversing the Atlantic from the banks of Newfoundland, which contained the following note:—"On board the ship *Hercules*, Thomas Warth, of Chetteris, Cambridgeshire, and James Hatterpen, of Kingston, Cambridgeshire, England, from London for New York, are on the banks of Newfoundland. We have 198 passengers on board—they are all well. If this paper be found on any shore, by publishing it will oblige.—May 24, 1837." Thus after a voyage of 456 days, it crossed the Atlantic in safety; and although it is to be hoped that the friends of the two individuals mentioned above have received tidings of them through some other channel, yet this brittle voyager is not without its use, as it shows that the prevailing current of the Western Ocean runs in a north-easterly direction.—*Londonderry Sentinel*.

We record this in hopes that the author will specify the latitude and longitude where it was thrown into the sea. It coincides with several that we have already given, but its supposed course and rate of travelling without such data, are evidently unattainable.

Mauritius, July 18.—A bottle was found on the 16th of May last, on the north-east side of St. Mary's, (Madagascar.) at a short distance from the great reef, in which it had been carried by the current. It contained the following notice.—"Ship *Wellington*, of London, James Liddell, commander, from London, Madeira and the Cape, for Madras, Nov. 23, 1837, lat. 18 10 S., long. 85 50 E.

"This bottle is despatched for the purpose of throwing some light on the ocean current, and it is earnestly requested that the time and place of finding it may be publicly made known."

This is the first current paper we have recorded of the Indian ocean. The distance in a direct line, which it has traversed is about 2,030 miles in a direction about W. $\frac{1}{4}$ N. Some bottles thrown over to the S.E. of Madagascar, would perhaps serve to illustrate the extraordinary currents spoken of thereabouts.

The following which has been handed to us by the Secretary of the Geographical Society, also coincides with others which we have given, in showing the equatorial current. Its course has been S. 88° W., distance 2,410 miles; the interval 169 days, gives a rate of thirteen miles per day. The annexed letter gives its whole history.

Paradise, Quarter of Sacarigua,
Trinidad, 22nd September, 1838.

DEAR SIR,—The enclosed was picked up in a bottle within one of the reefs of the Union I., Grenadines, West Indies, on the 10th July last,

(by certificate of my manager Mr. Frederick,) having been thrown overboard from the ship William Lockerby, in longitude $25^{\circ} 10' W.$, on the previous 22nd of January. As a long reef extends N. and S. about eight miles to windward of Union Island, the bottle may have been laying there for some days before it came on shore at the place where it was picked up. Union Island is situated in about $61^{\circ} 18' W.$ longitude, and $12^{\circ} 37' N.$ latitude, showing a direction of the current nearly W.

I remain, Dear Sir,

Very faithfully yours,

O. W. SPAN,

Com. Washington, R.N.

Capt. Bengal Army on Furlough.

“The Ship William Lockerby, Capt. Parker, sailed from Liverpool for the Cape and Isle of France, on Thursday, 28th December, 1837. Was detained in the Irish Channel by adverse gales and boisterous weather until the 6th of January, when a south-westerly course was shaped from Cape Clear, with a head-wind, and heavy sea. The wind gradually veered round to the eastward, so that the ship preserved a direct course until the 32° north latitude, or the parallel of Madeira, and to the westward of that island about 8° , when the wind, though still fair, became light till the 16th inst., when in the parallel of Palma, the N.E. trade commenced hanging northward at first, and then becoming more easterly than usual, blowing strong and in heavy squalls till the parallel of Brava and Fogo. When in mid-channel, between the Azores and Portugal, a heavy sea stove in the starboard deadlights, and destroyed a bookcase on the opposite side of the after cabin tearing up the chronometer case, which was screwed securely to the top of a chest of drawers. On making the island of St. Antonio in the north-west range of the Cape Verds, we found the timepiece had not altered its rate. The trade has been more squally than usual, even sometimes boisterous. Within its limits the sky has frequently presented a very wild and fantastic appearance, halos round the moon and Jupiter; short morning rainbows, &c. In making St. Antonio it is advisable to keep some miles to leeward, as a vessel may be becalmed under the high land of the island. Have not been influenced by currents from the west during the voyage. Thermometer within the trade at 70° weather cold: warmth only now beginning to increase, barometer has stood since we reached $30^{\circ} N.$ at about $30\frac{1}{10}$. Troops of the flying fish, *exoctus exiliens*, seen to day for the first time: one dropped on board, length of the pectoral fins very remarkable. Temperature of sea 74° .

“PAT. ROLLAND, M.D.,

“Passenger per William Lockerby.”

“This bottle was thrown overboard from the ship William Lockerby of Liverpool, bound to the Cape of Good Hope, &c. in latitude $14^{\circ} 7' N.$, longitude $25^{\circ} 10' W.$, Monday, 22nd January, 1838. This is intended to ascertain the set of the North Atlantic currents: whoever picks up this bottle is requested to acknowledge it by publication.”

“J. PARKER, Master.”

“Picked up on the Union Island eastward Bay, on the morning of

the 10th July, 1838. The bottle must have been over a rough reef of coral from the spot in which it was seen floating near the shore.

“ F. O. FREDERICK, Manager of said Island.”

MURDER OF THE CAPTAIN OF THE SIR DAVID OGILBY, AT THE FEGEE ISLANDS.

THE English brig Sir David Ogilby, arrived and anchored in Rover Harbour, in the island of Beta Lil, on the 28th April, 1838. She sailed from this harbour on Monday, the 30th, sea account, at P.M. for Beretta, a town on the same island, and arrived and anchored at this port on the same day, at 10, A.M. On Tuesday, the 2nd of May, about 11, A.M., an affray commenced with the natives, concerning which are the following particulars, viz. —

Captain Hutchins had made preparations to establish a fish-house at Beretta, and had landed one pot for the purpose, and had the trade chest filled, and muskets and powder for the establishment, on deck ready to send ashore. A man called Rover Jack was to go ashore to take charge of the establishment and carry it on while the vessel was on a cruise. She was in the act of getting under-way—anchor apeak, and hoisting the fore-topsail. A great number of natives on deck, and still more in canoes around and alongside. One hand was in the foretop overhauling the rigging, and Captain Hutchins was on the quarter deck, with his cutlass in his hand, and Funnowlangy, the chief of Beretta, behind him near the taffrel. It is supposed that the plot was conceived by the chief on the instant, for numbers of the natives had hold of the foretopsail halliards, and were otherwise dispersed about deck; and Funnowlangy had a club passed to him from a canoe astern, and just as Captain Hutchins sung out “belay” to the foretopsail, he was struck by the chief with this club on the head, and fell dead instantly. The chief immediately jumped down the cabin, thinking that as the Captain was dead, possession was certain. The mate (Mr. White) seeing the captain fall, ran to his assistance, unarmed, when some of the natives took Captain H.’s cutlass and attacked the mate, and severely wounded him in several places on the head; he fell on the dead body of the captain. One hand (William Brooks) jumped overboard, and was killed in the water by the natives. There were muskets and ammunition in the arm chest in the foretop, and the man in the foretop stationed there to over haul the rigging, commenced a fire on the natives on deck. Two others gained the foretop by the forestays; one (Rover Jack) being wounded in the foot with a cutlass in the act of going up. The cook was knocked down. Some of the hands jumped below for arms, (there being none on deck save the captain’s cutlass, which was in possession of the natives,) and attempting to regain the deck were met by the natives’ clubs, and wounded. The natives now had possession of the decks. Those below, however, aided by those in the foretop, succeeded in killing some of them, which frightened the rest, (seeing some of their number drop,) and they jumped overboard. All this was transacted in between five and ten minutes. During this time the chief was in the cabin rummaging for trade, thinking the natives were finishing what he had so effectually begun. John Hunter jumped on deck from below, and seeing the decks about clear, went aft and saw the chief in the cabin, and jumped below with nothing in his hand but a

hammer. The chief made a blow at him with his club, which he partly warded off with the hammer but received it on his head. They then clenched, and during the scuffle, Hunter stabbed the chief between the eyes with a knife, the blade breaking off in his hand about an inch from the handle. This, however, did not kill him, he fought hard, and was at last shot by the people from off deck, down the skylight. Thus ended the affray, (the people having regained possession of the decks,) during which the natives had taken the boat which was towing astern, and muskets and powder which were on deck at the commencement. The vessel was immediately got under way for Leebooker, and got out of Motorique passage before dark, and into Leebooker the next morning, Thursday, 3rd of May, with the anchor hanging at the bows. The chief was hove overboard on passage. Another wounded chief was found in the fore-castle, who had crawled there during the affray, and was finished and hove overboard during the passage to Leebooker.

We, the undersigned, affirm that the above particulars are (as near as can be remembered) strictly true.

SAMUEL HICK,
EDWARD STEVENS,
JOHN MARSHALL,
JOHN PETERSON,
THOMAS M'CULLEN,
JOHN HUNTER,

} Shipped on board the
Ogilby at Sydney.

his
JOHN X JONES
mark,

} Shipped at the Islands.

commonly called Rover Jack,

Witnesses to the foregoing signatures,

WILLIAM CROSS,
J. H. EAGLESTON,

Wesleyan Missionary.
Of brig Mermaid.

DIRECTIONS FOR SAILING FROM WOAHOO, TO KARA KA KOOA BAY, OWHYHEE, BY THE SOUTHERN ROUTE.—By Mr. R. Thompson, Master of H.M.S. Imogene.

LEAVING Woahoo, steer S.E. by S., 160 miles, when Kara Ka Kooa will bear N.E. 40 miles; here you will probably be becalmed, if towards the evening, but the morning breeze (about E.S.E.) will carry you to the anchorage.

The Bay is rather difficult to distinguish, but by standing close in the native chapel, which is a large white building, having several cottages near it, will be seen on the hill in a northerly direction.

The points of the bay are low, having cocoa-nut trees on them. Immediately under the hill the land is nearly perpendicular, and has a very dark appearance. It is only necessary in going in to keep on the west side of the bay, to avoid some foul ground on the opposite. The shores are steep to with good anchorage, in twenty fathoms sand, with the extremes of the bay, from S. by E., to W.S.W. In this spot, the before-named dark cliffs will be about a quarter of a mile from the anchorage. The off-set would prevent a vessel drifting, should the wind come from S.W., which it very rarely does; There is a pilot residing here, a native of Bravo (Cape de Verds,) he will go off eight or ten miles in a canoe to bring a vessel in, for

which his charge is six Spanish dollars. Supplies are plentiful, consisting of bullocks, pigs, poultry, sweet potatoes, &c., all of moderate price. There is also plenty of fire-wood, water not in sufficient quantity for a ship; as it has to be carried five miles in calabashes.

The natives are a fine race, very honest, civil, and well disposed. No spirituous liquor on the island.

AMSTERDAM ISLAND.—*Volcano*.—While on our passage from the Cape of Good Hope to Trincomalee, being anxious to keep the westerly winds, and to get a fresh departure from the Island of St. Paul's, (particularly as we had very rough weather after leaving the Cape, which we thought, with currents, might have affected our chronometers,) we steered for that island, and expected to make it at daylight this morning; but at 9h. 30m. last night, the weather being thick and hazy, the look-out man on the fore-yard reported a light-vessel a-head. Its first appearance was like a ship on fire, but on our nearer approach it extended so considerably that the ship was brought to, and the deep sea-lead hove over, but no soundings were obtained.

We filled again and ran nearer it, when with a night-glass, we could plainly see two vast craters of a volcano at its S.W. end, and a very bright chain of fire extending from them to the N.W., at least three miles being the whole breadth of the S.W. end of the Island of St. Paul, about forty miles distant from us. We lay to until daylight, and no description could do justice to the awful effect of this truly grand beacon-fire of nature seen thus on the remote ocean; nor indeed can imagination easily conceive the sublime grandeur of its appearance even at forty miles distance in a *hazy, starless, and moonless* night, after a run of 3,000 miles. When daylight came we made sail, and soon after made the island, and very plainly perceived the two great craters which were throwing up immense volumes of smoke to the top of the island. We ran round the N.W. end of the island by Horsburgh's directions, and stood off and on, while the cutter and jolly boat, with the master and myself, went into the great basin which we found about three miles in extent, very evidently the former crater of a volcano, more than three parts of it surrounded by perpendicular cliffs of 700 feet high. The other part, through which the sea has broken and formed a passage for ships, is about half a cable's length wide, leaving a bar with nine feet water on it, and outside of it the soundings increased from three, five, seven, ten, eleven fathoms into deep water. The best anchorage is to bring the great ninepin rock to bear W.N.W. three quarters of a mile, in twenty fathoms fine black sand. In the middle of the basin the depth is from twenty-seven to thirty fathoms, and fourteen fathoms very near the sides of the cliffs, black sand and mud. We had no opportunity of ascertaining the longitude by a lunar. The weather was also hazy, but we made the latitude one mile and a half off the entrance of the basin, 38° 41' S., longitude, as well as we could ascertain, 77° 25' E., while in the chart the latitude is laid down (of St. Paul's) 38° 31' S., longitude 78° 15' E.; by Horsburgh, latitude 38° 47' S., longitude 77° 52' E.

This island lies directly in the track of ships going to New Holland and Van Diemen's Land. We gave every mess in the ship twenty good fish, and left the island at 3 P.M. The variation of the compass 25° W. off the island, and the tide or current into the basin was about

two miles an hour. Every spring, hot and cold, was dried up; in one of them, six feet deep, were young birds, and before we left the basin the smoke from the craters nearly filled it so that we could scarcely see across it.

[A strange confusion of names appears to have crept into the charts with regard to this island, (which is that of Amsterdam,) and the island of St. Paul to the northward. Horsburgh tells us they were discovered by the Dutch navigator Vlaming, in 1697, who anchored off both; and we find in Sir George Staunton's embassy to China, a notice of this error, with a full account of the island, and a plan of the basin above alluded to, which was visited by the officers of H.M.S. Lion, the ship in which he went out. Our historians of voyages of discovery are silent on the subject of Vlaming's voyage, and until we can refer to it we are content with the authority which we have quoted, (confirmed as it is by Espinosa, whose chart agreed with the latitude found by the Favorite,) in concluding that Amsterdam is the southernmost island of the two. See also D'Entrecasteaux.]

COST OF STEAM SHIPS.—I propose to give an estimate of the cost of construction, machinery, &c., of a steam-ship of 2,400 tons. It is my firm conviction (and the reasons will be assigned to any one desiring them) that a ship of the same or double the size of the Great Western, will be more successful than one of intermediate dimensions. The usual charge for the best freight ships is about forty dollars per ton—and the spars and sails of a steam-ship are more than one-third less than those of a sailing vessel of the same tonnage; but as the cabins require much greater decoration, and the outfit is far more expensive, seventy-five dollars per ton will be assumed for the cost of construction.

Estimate of cost of hull, spars, tackling, sails, machinery, cabin furniture, of a steam-ship of 2,400 tons:—

Ship-builders' charge, say 75 dol. per ton, for hull, spars, sail, tackling, &c.	dol.	c
.....	180,000	0
Two engines of 250 horse-power each, including boilers, and Hall's Condenser, or Maudsley and Field's change water apparatus, &c., at 40 <i>l</i> . sterling per horse-power, put in	97,000	0
Coppering	15,000	0
Decorations, cabinet furniture, and incidental expenses	65,000	0
Cost	357,000	0

Annual expense of a ship of 2,400 tons, exclusive of fuel and fare of passengers	94,000	0
Six thousand tons of coal, at 7 dollars per ton	42,000	0
Fare of 180 passengers each trip, 16 trips per annum of 16 days each, at 1,50 dollars per day, each person	69,120	0
Port charges, incidental expenses, &c.	25,000	0
Ten per cent, on cost for wear and tear	35,700	0
	265,820	0

Cr.

By 2,380 passengers, (16 trips, 180 passengers each trip,) at 30 guineas, or 152,70 dollars each	439,776	0
By freight on 2,816 tons of merchandize, 175 tons each trip, at 40 dollars per ton	13,657	60
By postage on 80,000 letters (5,000 each trip) at 25 cents. per letter ...	20,000	0
	473,433	60

Annual expense of a steam-ship of 2,400 tons, including 10 per cent. for wear and tear	255,820	0
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Profit for twelve months	207,613	60
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In this estimate I have made the largest allowance against, and the smallest, for the ship. The number of passengers allowed, are about one half such a ship should carry, and the price so low as to cover children and servants. The coal is also estimated at a liberal price, for on every alternate trip, it could be procured at 379 dollars per ton, with the duties off, as Nova Scotia coal can be obtained in New York at 553 dollars per ton.

Of anthracite coal, as a fuel on long voyages, I have heretofore had my doubts, but I have ascertained that in the ferry-boats between New York and Brookelyn, where it is almost exclusively used, they raise the steam to eight pounds per square inch; and in the locomotives on the Chesapeake and Ohio railroad, to sixty pounds, with the aid of a fan for increasing the draught. The boilers of these locomotives, have from 108 to 116 copper tubes running through each. Anthracite coal can be obtained in Philadelphia for 525 dollars per ton, by the cargo.—*New York Paper.*

MR. SNOW HARRIS'S Lecture, held at the last Annual Meeting of the Cornwall Polytechnic Institution.

About 300 persons were present to hear Mr. Harris's lecture, who, on taking his place on the platform, was received with loud cheers.

Mr. Snow Harris began by observing, that the subject now about to engage their attention was one, not only of peculiar interest, as a branch of physical science, but of great practical advantage. It was of peculiar interest, inasmuch as it led us to the contemplation of certain invisible and secret powers of nature, far removed from the grosser apprehensions of sense; of great practical advantage, as having furnished us with a means of guiding our ships through the trackless ocean; of communicating ideas with the rapidity of thought, at immense distances; of measuring the thickness of a solid mass of matter, impenetrable except by violence; and, in all probability, still big with a variety of other results, of not less magnitude and importance. The secret forces to which he alluded, were those of gravity, electricity, and magnetism. The operation of the first is observable in the falling of a stone to the ground; the two latter, in the attractive force evinced by the common loadstone, and by vitreous and resinous bodies when subjected to a species of excitation by friction. The phenomenon of attraction appeared to be the first and most obvious indication of the existence of these powers. It was not requisite to know in what these forces immediately consisted; it being the province of physical science to trace more particularly their relations, and the laws of their action; thus Newton developed, by a profound geometry, the laws of gravity, though he remained ignorant of the real nature of this wonderful agency.—Mr. Harris proceeded to exhibit and comment on the natural magnet, or common loadstone, showed that the attractive force was greatest in certain points of it; explained its communicative property by which it could impart to bars of steel, of regular figure, properties similar to its own; thence giving rise to artificial magnets, of regular figure and homogenous structure; and enabling us to institute a variety of important inquiries into the laws of magnetism. This communicative property was illustrated, by suspending from the extremity of a magnetic bar, a series of iron balls and rings, which, taken apart, had no action on each other, but which transmitted

through each other the magnetic force, so as to link the whole into a connected chain by this wonderful, and apparently immaterial, agent. This result was known to the Greeks; and the celebrated Roman poet Lucretius had written learnedly concerning it. So far as Mr. Harris could see, he thought that Lucretius understood the nature of this action quite as well as we do at this present time.—Mr. Harris proceeded to explain the general properties of artificial magnets, showed that they might be of any form, and were in some cases bent in the form of a horse shoe, explained that the attractive force was greatest in their ends, and least at the centre; showed their directive tendency, or power of pointing near the direction of the meridian. The extremities were termed their poles, the line joining these, the magnetic axis, and the point of no attraction the magnetic centre.—He next illustrated by some striking experiments, the attraction of dissimilar poles, and the repulsive force evinced, when two similar poles were brought near each other. He showed that a bar of steel, previously balanced, would not remain horizontal when rendered a magnet, but would incline at a considerable angle in these latitudes. When a magnet was delicately balanced in a vertical position, and free to rotate, it would revolve rapidly if a current of electricity flowed from its poles to its centre, or from its centre to either pole.—The lecturer made some slight allusions to the theories of electricity and magnetism, and observed that most of the phenomena might be accounted for by assuming the existence of two distinct forces which exactly neutralized each other when combined, but which evinced active powers when disunited; these forces had been called positive and negative forces, in order to distinguish them. The celebrated French philosopher Ampere, had endeavoured to show that a common magnet was made up of currents of electricity, circulating about it in planes perpendicular to its axis, and of which the lecturer furnished a very interesting illustration, by causing a current to affect a spiral coil of wire, free to move in a horizontal plane, the extremities of this apparatus were perfectly sensible to the influence of common magnets, and were attracted and repelled precisely in the same way.

Mr. Harris now exhibited a measurement of the increase and decrease of the force between a magnet and a mass of iron, by means of a delicate instrument, which he had invented some years since, an account of which had appeared in the Philosophical Transactions; the force was made evident, and it was clearly seen that when the distance was decreased one-half, the force was increased four times as great: thus, in mathematical language, the force was said to vary inversely as the square of the distance between the attracting particles; a law similar to that which Newton had deduced from the action of gravity.—The lecturer now proceeded to apply these facts to the magnetism of the earth, which he supposed to be a spherical magnet of vast mass; and showed how, on this supposition, the phenomena of the dip and direction of the needle might be explained. The determination of the dip, and intensity in terrestrial magnetism, was a matter of no small difficulty; the construction of a perfect dipping needle, on the common plan, he considered as nearly impracticable; whilst the investigation of the intensity by the method of oscillation was liable to much uncertainty. The lecturer here alluded to an instrument, invented by our distinguished

townsman Mr. R. W. Fox, by which both the dip and intensity could be arrived at with considerable accuracy, and with comparatively little labour. He considered that science was under deep obligations to Mr. Fox for this valuable piece of physical apparatus.—Mr. Harris concluded his lecture with some interesting experiments depending on the reciprocal action exerted between magnets and wires, carrying electrical currents, and with an exhibition of the Electro-magnetic Telegraph. This last consisted of two bar magnets, each hung on a delicate axis in a long coil of wire, having its sides parallel to the needle. By means of a small electrical combination at a distant part of the room, about thirty feet, more bars could be deflected at pleasure, so as to point, either separately or conjointly, to certain signs on the board to which they were attached.

At the conclusion of the lecture, Mr. Basset moved, and Mr. Hull seconded, a vote of thanks to Mr. Harris, for his very interesting lecture, which, after a few remarks from Mr. Davies Gilbert, was carried with acclamations.—Mr. Harris very briefly acknowledged the compliment, and stated that he should at all times be happy to give his assistance in promoting the interests of the society.—(Cheers.)

PHENOMENON IN SEA-WATER.

Ship "Arabian," bound to China.—At Sea, June 30th, 1837.

SIR,—I hailed the first appearance of your much esteemed nautical publication, as the seaman's monitor, champion, and guide, and have ever since to thank you for your persevering endeavours to remedy the defective state of our merchant ships and seamen's discipline. I trust you will not allow the subject to drop until it meets due consideration in the proper quarter.

Perusing an interesting account of a phenomenon observed by Captain Wilson, of the "Barossa" in the Eastern seas, on the 19th September, 1832, I was struck with the remarkable coincidence of facts in my own observation on the same kind of phenomenon on the 20th September, 1836, and near the same place. I send you an extract from my private log, detailing the circumstances—at your disposal. If you should think it worthy of publicity, it may invite the observation of other navigators, but more particularly the notice of some of your scientific readers, who may be induced to throw out some hints of their opinions as to the cause of this very interesting, and in some cases, very alarming, phenomenon.

I am, Sir, your very obedient servant, J. H. B.

In the "Arabian," under my command, bound to China, at 1h. 30m. A.M., on the 20th September, 1836, I was awoke by the chief mate informing me that we had all at once come into discoloured water, and that he was afraid we were on a shoal. This was rather alarming news, but feeling tolerably confident of the ship's position, and having either heard or read of "white water," my first impressions were that it was something of the kind. I must, however, confess, that on my arrival on deck, these comfortable thoughts left me, and I could not help thinking that we were actually upon a coral shoal, and expected every moment that we should be "brought up all standing," as we were going at the time nine knots. All

hands were called, the studding-sails taken in, courses hauled up, main-yard thrown aback, deep-sea lead and line run forward, and, as soon as the ship had lost her way, hove—had the satisfaction to hear the “watch there watch” of the waistmen progress regularly aft ran out 90 fathoms—no bottom; took another cast, 110 fathoms of line out, (about 95 up and down,) with the same success.

I now began to breathe freely. The night was light and fine, stars appearing, but not bright, a hazy bank lay in the eastward, but the sea was as “white as milk,” and had the appearance of shoal water over a very white coral reef. It was a uniform whiteness, no reflection or sparkling emitted from animalculæ or phosphorescent matter, and it was as light as day about the decks. We drew some of the water and examined it. It was quite dark in the bucket, and emitted very little of the phosphorent sparkling when agitated: on examining it in a clean tumbler, it was apparently void of any animalculæ, and as clear as crystal. We then put a few buckets aside, and examined it by daylight with all the magnifiers I could muster, with the same result. Temperature of the water at the time, 77°, air 70°.

Being now satisfied that we were safe, and finding that we sailed as well in white water as in blue, we filled away again, but had not the courage to set studding sails until on “true blue” water, as it required but little stretch of fancy to imagine ourselves sailing over a yawning fiery gulf,* which illuminated the water beneath us. However, in half an hour the water began gradually to resume its usual colour, and at 3h. 30m. we had emerged from it. We must have run a distance of ten or twelve miles while crossing the “white water.” Our latitude, carried on from the preceding noon, was 3° 1' S., longitude 105° 13' E. at the lime of entering it. We steered N.N.E. until the following noon, when we observed in 1° 50' S., long. per chronometer, 105° 33' E.; steered then due N., and at 7h. 30m. P.M. made Christmas Island right ahead; had to keep away N.W. by W. to clear the island. At 10, P.M. the south end bore E., distant five or six miles. In thirty-six hours from this, we made Java head, and experienced a set of thirty-one miles to the westward during that time. On the 14th September, 1835, I crossed the same latitude a degree further westward, but saw nothing.

A trial was very recently made of throwing hollow shot from a sixty-eight pounder, placed on the beach near Southsea-castle. The principal object was to prove the usefulness and efficacy of a newly-invented metal tube, which screws into the shot, and is moreover secured by a cap screwed over it, which is removed when the shot is put into the gun, but when the cap is on, no accident can happen. The tubes were intended to burn eight seconds, and the powder was proportioned to make the flight of the shot exactly that period; and it was extraordinary to witness the exactitude of the calculation. The shot were well directed at a flag-boat moored at about a thousand yards from the beach, although with the early shots it was just as extraordinary to observe what power a brisk wind, at right angles with their direction, had upon

*The same idea has occurred to us, viz. that this white water is the effect of reflection from some submarine fire.

them; one shell burst immediately on quitting the gun, and its destructive powers were fully evinced by the great displacement of stones and sand for a considerable area in front of the muzzle of the gun; but the projectile force of the powder prevented any mischief to those in the rear of the explosion.—*Hampshire Telegraph*.

Mr. Amsinck, chief director of the Thames Haven Dock and Railway Company, has had interviews with the Minister of the Interior and Foreign Affairs, the Minister of Public Works, with the British Ambassador, the Baron Evain, minister of state; with M. Simon, at Liege, the chief engineer and director of our railroads, on the question of establishing that correspondence which is urgently called for, between the administration of our railway and that of the Thames Haven. We observe with much pleasure the solicitude of our new administration, which neglects no opportunity of increasing our means of communication for the interest of commerce, and especially for the transit of merchandize.—*Courier Belge*, Oct. 29.

QUARANTINE LAWS.—*From the Shipping Gazette*.—Among other ills that ship-owners and sailors are heirs to, the quarantine laws are not the least. That efficient regulations to prevent the importation of disease should be enforced by the government of every nation, is a matter beyond dispute; but it is also matter worth their enquiry, how far caution and scrutiny can be beneficially carried—in what instances they are needful, and in what cases superfluous. This would lead to a protection of those whose business in life causes their interests to be involved; which sometimes occurs to a considerable extent.

The letter in this number of our paper, addressed to the Governor of Malta, by some gentlemen travelling from Bombay, exhibits the personal inconvenience which is entailed by ill-considered quarantine laws; whilst another letter, signed "C. T. Sloman," (which appeared yesterday in our columns,) as clearly shows that injuries are inflicted upon commerce through the same means.

Than the latter case, perhaps a plainer could not be offered of the folly and mischief of the system, or what is as bad, the wilful perversity of persons appointed to carry it out. Captain Sloman had arrived at Falmouth, landed his papers, and commenced his stay of quarantine; when, having completed his eight days out of ten, the prescribed period, he sailed again for the port of his destination, Bristol; where, instead of obtaining his release, he is commanded to perform the whole process over again. It was a service with which the Bristol gentleman could in no way dispense—a ceremony due to his dignity as a quarantine officer, which could be discharged at no port in the United Kingdom, but Bristol; and the schooner would have been just in the same position if Captain Sloman had cruized round England till his crew were grey-headed. Now, if the quarantine officer had not overstepped his authority in this instance, (and we have no doubt he is prepared to show he has not,) we have but to ask whether the regulations under which this species of false imprisonment has been inflicted, are the most judicious that a government can hit upon for the protection of the national health, and the convenience and encouragement of commerce. The best, and certainly the truest, answer which can be made to this, is, that government has never thought the matter worthy of notice. Another instance may probably

enable us to prove, however, that it is not so insignificant a question, and that the quarantine laws require modification.

Suppose a ship arrived from a port said to be within the limits of a quarter sometimes unhealthy, she must serve out her time of precaution, whether disease should have prevailed there at her departure or not; whether the crew are half annihilated by pestilence, or are in the full enjoyment of health and vigour: this is their fortune, and they must bear it. The ship-owner must submit to the additional costs which are thus added to his voyage; and the merchant must suffer the loss of the interest on his invested capital, and take the chance into the bargain, of bringing his adventure to a market which, twenty or forty days earlier, would have repaid him for his risk, but now sets him down with a loss. We know that with the little fruit vessels, whose best hope is speed, this effect has frequently been produced. Neither are the insurers exempt: the risk of an underwriter is not discharged until after a ship shall have been secure in the port of her destination twenty-four hours; consequently, if she be wrecked while at anchor in a quarantine ground, or get ashore, or damaged while coming from it, the loss is with him.

There are here many interests involved, and without losing sight of what is due to public security, we are convinced that all parties concerned may be benefited by a judicious modification of our quarantine laws.

We have just (two o'clock) received the following communications, and have much satisfaction in complying with the request of Mr. Kerr, by giving them publicity through our columns. We hope to be able to-morrow to offer some remarks upon the subject of quarantine:—

“4, Great Winchester-street, Nov. 9.

“Sir,—I beg leave to enclose a copy of a letter from Captain Slocman, of the schooner Stamboul, by inserting which in your paper I think you may be serviceable to the commercial and shipping interests of this country. Our quarantine laws are sufficiently oppressive without having the inconvenience aggravated by ignorance or caprice, which is too often manifested in those by whose authority they are enforced. It is much to be regretted that there are not more officers in this department of government, possessing the spirit of the present excellent superintendent of Standgate Creek, who, though rigid in the performance of his duty, is always correct and consistent. I am, respectfully, Sir, your most obedient servant,

“NIVEN KERR.”

(Copy.)

“Quarantine Ground, near Bristol, Nov. 5, 1838.

“Sir,—On my arrival with the schooner Stamboul at Falmouth, on Wednesday, the 24th ult., I was informed by the superintendent of quarantine, and likewise by Messrs. William Broad and Sons, that if my papers were landed there, my quarantine of ten days would commence immediately, and if I left Falmouth before the expiration of that time, both that and the time expended on my passage here would also count. The weather proved so unfavourable it was impossible to get away before Wednesday the 31st of October, and I had hoped to have arrived here by the 2nd, when my quarantine was out. I had a dreadful passage here, having split our sails, and done other damage,

and did not arrive until yesterday morning, when I fully expected to be released immediately, instead of which I have this day received orders to perform another quarantine of ten days.

"I have therefore written to inform you of my unreasonable detention here, and to request you to use your influence at the Counsel-office to have me released per return of post.

"This affair certainly ought to be made public, that vessels may not be subjected to a second detention, after having been told by the officers stationed by government at the out ports what I have stated. Hoping to hear from you by return of post,

"I remain, sir, yours respectfully,

"C. T. SLOMAN."

To his Excellency Lieutenant-General Sir Henry Frederick Bouverie, K.G.C., &c., Governor of the Island of Malta and its dependencies, and a member of the Board of Health.

Sir,—Ten days have now elapsed since our disembarkation in Fort Manuel, and we are informed that we shall be detained here ten days more to complete what is termed a "quarantine." This delay in our journey will be increased still further to the extent of six days, because we shall not have an opportunity for leaving the island of Malta by a steam-boat for France till five days after our liberation; and this is neither more nor less than a loss to us, by quarantine detention, of twenty-five days, occasioned by our having passed over a portion of the country of Egypt where the plague often prevails. Though well entitled to indulge in dissatisfaction at this stoppage of our journey from India to Europe, yet it is less on our own account than on that of future travellers, that we beg permission to submit to your Excellency's examination, whether the rules under which we now suffer an imprisonment of twenty days are called for by necessity, and whether the means employed can possibly secure the end proposed to be attained of purifying travellers, so as to be certain that they have about them no infection of the plague, and shall be rendered incapable of spreading that disease in Malta, or in those countries of Europe they go to visit or inhabit.

To enable us to arrive at a just conclusion respecting the facts which bear on the question of quarantine, let us accompany a traveller, ourselves for instance, from India to Malta, and if it should be objected that such a case is one not generally applicable, we should reply, that the system is only the more intolerable and absurd that it admits of no reasonable exception. But our case is that of many others, and will in the future become that of very many more. We therefore solicit your Excellency to apply to our case the remarks we have to make on the present system of quarantine, and then to reflect whether so long a quarantine ought to have been awarded to us, or whether, in having been so, it is not striking us with a hardship indefensible on grounds of reason and experience?

We left Bombay on the 12th of September last, and on the 10th of October embarked at Alexandria for Malta in her Majesty's steam-vessel Blazer. Our journey at Bombay, till the time of our embarkation at Alexandria, occupied twenty-eight days, and we were of that time ten days in Egypt, six or seven of which we were travelling in a desert or on a river, where it was impossible to hold a promiscuous intercourse with the people of the country; and we were for three days

in a city, and then inhabiting clean and airy houses, either in Cairo or Alexandria. The plague, we are informed, had not been in Suez or Cairo for months before our arrival at those places; and the last case at Alexandria occurred thirty-seven days before the day of our embarkation. How, then, we would respectfully ask your Excellency, is it possible that we should have acquired the infection of a disease which did not exist, and which had totally disappeared from the country for so long a period before we entered or left it? Yet here we are doomed to suffer restrictions which, it appears to us, can only be called for, and that to a less extent even than these, when the plague is actually raging at the time the traveller quits Egypt. We would ask your Excellency if it is not quite absurd that we should undergo imprisonment for the very same period, as if thousands were dying daily when we left Alexandria? Might we be permitted to offer an opinion, we should say that there ought to be three scales of quarantine: one of the longest period for persons leaving Egypt when the plague is epidemic, and which should not exceed twenty days from the day of departure; one-half that term when there are sporadic cases only, at or within fifty miles of the port of embarkation; and the third, amounting to six days, also to be reckoned from the date of departure from Egypt, when the plague has not prevailed, either as an epidemic, or in particular spots, or single instances, for twenty days previous to departure. This scale we firmly believe to be more than ample to satisfy the most scrupulous who shall open their eyes and attend to the dictates of reason. It has been suggested to us by the known fact that Europeans residing in Egypt (that cradle where the plague is nurtured by filth and malaria), when they wish to hire a domestic, while barricadoed within their houses, and the plague raging at its highest pitch, never require from him more than ten days' seclusion before admitting him to their house. Are Europeans residing in Egypt less scrupulous about their lives, and less vigilant in averting dangers which might threaten their existence, than their countrymen in Europe? And have they ever suffered from such a custom? In so far as we can discover they have never suffered. Their conduct must, therefore, be deemed to be shaped by experience, and fitly adapted to facts and circumstances. It meets the fact that the plague is contagious, but it meets it reasonably, and without ridiculous fears. It looks the evil in the face, and provides with wise precision that which is certain to be suitable in warding it off. Through moral courage these men have ascertained what is physically necessary for their safety; and have for ever laid aside that terrific ghost which still haunts the imagination of their countrymen in Europe. They fearlessly risk the lives of all whom they hold most dear on the custom they have established. Then, when the disease is only heard of in sporadic cases, or when entirely abated, Europeans throw open their doors, and carry on the ordinary business of life and of intercourse with the natives of the country. How many of them have died of the plague from pursuing this course? We are given to understand that none who inhabit airy houses, and who do not mix with the dregs of society, have suffered. But if none have suffered, why should ships and their inmates leaving the country when there is little or no disease, and that, moreover, to reach any port in Europe, having a period of some days or weeks to spend in the pure air from the open sea, be subjected to any quarantine at all? They leave the birthplace of the

plague when no one in the country itself fears infection from his neighbour; and none acquire it but individuals exposed to some local malaria arising from the soil, or imbedded in personal filth, and who might rather be said to fasten upon the disease than it upon them.

The scale we have suggested has also strong ground of support, so far as regards clothes or articles exported from Egypt; in the experience of European ports, which receive the cotton wool of Mehemet Ali Pasha, commerce and self-interest have here set at rest a great deal of argument respecting the plague being communicated by things. We allude to the large bales of cotton, gathered and packed by those individuals most subject to plague, and among whom, and in whose clothes, it must lurk, if it is to be found so lurking and communicable at all in Egypt. Every atom of cotton in those bales is touched by such individuals. Nothing is said to be more liable to imbibe and retain the fatal virus than the fibres of cotton. Yet compressed bales of this article are received into European ports, after being pierced, and for forty days exposed, with two or three holes only, by way of allowing the air to circulate and disinfect the whole compact mass. When we reflect on this fact, and on its harmless consequences, and look round our chambers here, where every pocket handkerchief, every sealed paper, book, or parcel of papers, which had lain at the bottom of our wooden boxes, the outsides only of which were touched by Egyptians (and wood is said not to be liable to infection), are scattered to procure air for purifying them, we cannot but think there is a great degree of unnecessary mummery, annoyance, and evil-intentioned carefulness, at once discreditable to the science and intelligence of our country, and contemptibly mean and tyrannical, as exercised towards persons, and not to commercial bales of cotton.

We mean no disrespect to your Excellency, or the board of health here, in making these observations. Your Excellency, we are fully aware, is only fulfilling those duties imposed upon you by government, and perhaps government finds them, to a certain extent, imposed upon itself by the inveterate prejudices of other potentates, who either cannot, from defect of intelligence, or wickedly will not, examine the quarantine system. But the question is a great one, and that ignorance of others which obstructs the well-being of mankind, generally ought to be dispelled by the more intelligent powers of Europe. Would that it were the law, as it is the interest of nations, to settle such questions by general rules, that should be binding upon those who are unreasonable terrorists, and obstinately prejudiced.

We must afford our testimony to the kindness of disposition of Signor Cardoni, the superintendent of the quarantine establishment, and to the excellence of the arrangements generally for the accommodation of the prisoners here. Everything seems to be done to alleviate the hardship of what appears to us a tyrannical imprisonment, because it is of benefit to nobody but traitors, guardians, and government individuals, appointed to superintend it. By frequently agitating the reasons for and against quarantine, as it now exists, something, it is to be hoped, may be done to men's understandings; and that this farce, in which we are at present playing so tragical a part, will, before long, be abandoned; and we pray your Excellency will make such a use of this representation as you may deem best suited for aiding in what ought to be the object of all sensible men—the reduction of quarantine to the term suggested by known facts and

sound reason, divested of prejudice and ridiculous fears. In concluding, we have to offer apologies to your Excellency for occupying your attention with a subject which at Malta, and to your Excellency, must be a trite one.

We have the honour to be, with sentiments of great respect, your Excellency's very obedient servants,

H. D. ROBERTSON, Major of the Bombay Army,

W. PURVIS, Lieutenant of the Bombay Army,

JAMES SINDRY, } Merchants from Bombay,

G. ADAM, }

C. POULAIN, Merchant from Pondicherry.

Fort Manuel, Malta, Oct. 24.

The following is from the *Times*.—"The letter addressed to Sir Henry Bouverie, the governor of Malta, details as severe a case of suffering and inconvenience from the operation of the quarantine laws, as we recollect to have fallen under our observation, especially as the circumstances render it doubtful, whether in this instance, the parties should have been subjected to its provisions at all. Without adopting the doctrine of the non-contagionists, it may be safely affirmed, that these regulations are made, in a great majority of cases, uselessly harsh and oppressive, and that there is no subject to which enlightened nations can more properly direct their attention than the remission or the relaxation of them, so far as may be compatible with public safety. Nothing can tend more to retard the cause of civilization, and to keep nations from a just estimate of each other, than these vexatious laws; and if we turn from this to the commercial question, the injury inflicted by them upon all nations is still more palpable. The letter referred to is signed by two military officers and three merchants."

THE HAGUE, November 6th.—As a confirmation of what we have lately mentioned respecting the present quarantine regulations in the Baltic, we add the following statement:—Copenhagen, October 30th.—The rigour with which the quarantine regulations are at present enforced here, with respect to vessels navigating the Baltic, is a very serious grievance to navigation. An English ship with a cargo of cotton, for instance, the captain of which had neglected to ask for a certificate at Elsinore, obtained permission on arriving at Cronstadt to wait till he had obtained it; but on his application to the director of the Danish quarantine establishment, he was answered that according to the regulations, he must appear in person at Elsinore, so that he was obliged to return to that place.

CASE OF THE NAVAL LIEUTENANTS.—To the Most Noble, the Right Hon., and the Hon. Commissioners appointed by our Most Illustrious and Benevolent Queen, "to inquire into the several modes of promotion and retirement, now authorized and granted to the officers of Her Majesty's Naval and Military Forces, for ascertaining the comparative situation of the officers in each branch, and for reporting whether, due regard being had to economy and to the efficiency of the service, it may be practicable and expedient to make any, and what, changes in the present system."

The Memorial of the Lieutenants of Her Majesty's Fleet most humbly sheweth—

That your memorialists beg leave most gratefully to express their gratitude for the benevolent intentions of Her Most Gracious Majesty, in the appointment of your Right Hon. Board, upon whose impartial consideration of their various grievances they rely with entire confidence.

Your memorialists complain that they possess no right to promotion, let their services be ever so long or brilliant; nor can they claim employment, be their abilities ever so efficient. Coronation and general promotions, so far from being a benefit, have proved the fruitful source of extensive annoyance; in fact, the naval officer is the only servant of the Crown who is unable to maintain a right, or claim a privilege; whereas the captains in the army, who do not purchase their commissions, have constantly in view the rank of general officer, of which nothing can deprive them but the visitation of Almighty God; and their rights and privileges are so clearly defined as to defy mistake.

Your memorialists also complain of the anomalies attached to their retirement; only the first hundred upon the list of lieutenants, out of 3,159, are allowed to retire with the rank of commander, the junior of whom had held his commission 42 years, independent of previous servitude—some for long periods of years in the inferior grades; and they are amongst the oldest officers in the navy, not even excepting the flags; yet they receive the smallest half-pay given to any commander, less than the youngest brevet major; and their widows receive 10*l.* per annum less pension than either.

By the King's order in Council of the 1st November, 1830, it was provided that 300 of the senior lieutenants might retire with the rank of commander; but only 179 have availed themselves of this extraordinary boon, the junior of whom has been thirty-three years upon the list of lieutenants, besides previous servitude in inferior grades. These 179 officers still continue upon the half-pay list of lieutenants, thereby depriving 358 lieutenants of one shilling per diem, directed to be paid by the King's order in council, at the close of the war. These retired commanders receive the half-pay of the youngest captains in the army, and their widows 20*l.* per annum less than the brevet major. It has been assumed by men in authority, that these retired commanders obtained what they asked for, viz., rank without pay—this we deny and challenge proof. Out of the next 800 lieutenants, there is only one employed in the line for promotion. During the whole of the war the commands of small vessels were always given to old officers, and your memorialists could name a goodly list of those who obtained promotion for the successful discharge of their duties while so employed. Of this advantage the old war officers have been deprived during the last six years; besides which, the lieutenants in command have been deprived of one-half their emolument without one single penny as an equivalent.

The comparative situation of your memorialists with their own rank in the army is so anomalous, that it could not be accredited without examination. The Naval Lieutenant is constantly upon guard—the safety of the ship and lives of the crew depend nightly upon his watchful eye and ever-ready resources, which experience alone can afford in the moment of difficulty. When he requires leave of absence from sea-going ships, he must go upon half-pay; if overtaken by disease—the effects of excessive duty in a sickly climate—he is immedi-

ately invalidated upon half-pay, and must incur considerable expense ; when in action, or shipwrecked, with the loss of everything, he is not remunerated nor paid one penny for his loss : when recovered, it may be years before he can get another ship—if an old officer, never. He is unable to provide for a son in his own profession from the great expense and the insuperable difficulties he has to contend with in obtaining for him a commission, and his deprivation of his gratuitous education and clothing at the Naval College.

For many generations naval officers suffered a deduction of three-pence out of every twenty shillings received from the Government, whether upon full or half-pay, to be appropriated exclusively to a pension for their widows ; this deduction has been discontinued ; but the lieutenant must be ten complete years as such before his widow can receive one penny, even should he die whilst employed in the most unhealthy climates. It becomes important, then, that the navy should have some statement of this accumulated wealth, and know how it has been expended ; for the captains in the army, who do not purchase their commissions, never subscribe one shilling for a pension to their widows, nor undergo one day's probation to entitle them to it.

Captains in the army can always be upon full pay, and obtain one, two, or three years' leave of absence at a time, enjoying their full pay ; and when returning from our colonies through ill health, their comforts are attended to, without expense on their part : every loss by battle or shipwreck is fully paid for ; with very little difficulty, comparatively, they can obtain commissions, in their own corps, for sons who may be qualified ; and if obliged to retire from the service for a few years, they can return to it again, with the advantage of every brevet which has taken place during their absence.

The full as well as the half-pay of naval lieutenants is divided into three classes, viz., when first line of battle-ships, 150*l.* per annum ; all others, 120*l.* ; and when serving with a flag, sixpence per diem flag pay ; when employed in civil departments of the navy, 200*l.* per annum is about the maximum ; whereas the captain of marine artillery, with the rank of brevet major, when embarked on board a line-of-battle-ship, will receive 237*l.* ; when the first lieutenant of the marine artillery, seven years' standing, is embarked on board a frigate, he receives 143*l.* ; the naval first lieutenant of the same ship, his superior officer, only 120*l.* ; captains of marines, who hold the situations of assistant deputy adjutant-general, receive 538*l.* ; paymaster, 428*l.* ; barrack-master, 319*l.* ; first lieutenants of the marine artillery, when above seven years' standing, receive as adjutants, 262*l.* ; quarter-masters, 228*l.* All captains in the army of 1825 are brevet-majors.

Captains of marines have received honorary distinction for their services in the navy—the naval lieutenants, their equals in rank and seniors on board ship, never.

With respect to half pay, the first class, whose junior is of thirty-three years' standing, only receive seven shillings per diem ; the second class, whose junior is twenty-six years' standing, receive six shillings ; the remainder five shillings, many of them after a servitude of twenty years as midshipman and mate.

Your memorialists will not enter into the details of the many minor grievances to which they are subject, but conclude with a hope that

your right hon. board will be impressed with the belief that the true efficiency and economy of the naval service can never exist apart from justice; and they humbly pray that the lieutenants of Her Majesty's navy may be placed in all respects on an equality with officers of the rank in the Royal Marines, Artillery, and Engineers.

And your memorialists will ever pray.

At a numerous meeting of Lieutenants of the Royal Navy, held at Devonport, on the 30th of October, 1838, Mr. George Field Somerville, Lieutenant, R.N., in the chair.

Moved by Charles M'Kenzie, Lieutenant, forty years, seconded by Lieutenant Digby—

It was resolved,—That as our illustrious and benevolent Queen has, in her Majesty's wisdom, seen fit to appoint a commission to inquire into the several modes of promotion, retirement, and comparative situation of each branch of Her naval and military forces, it therefore becomes the duty of the naval lieutenants to furnish the commission, by memorial, with a statement of their most prominent grievances.

Moved by Lieutenant W. H. Symons, senior mate of Lord Nelson's ship at Trafalgar; seconded by Lieutenant R. Coates:—

It was also resolved,—That the memorial now laid before the meeting be adopted, as calculated to attain the objects we have in view; that printed copies be transmitted by our chairman to the Right Hon. the Earl of Minto, G.C.B., and to each of the other Commissioners of the Admiralty, respectfully and earnestly soliciting their lordships' support of its prayer.

That the chairman be requested to transmit to the Secretary of the Commission, as soon as convenient, a copy of the memorial, signed by himself, in behalf of our brother officers who may approve of it by their signatures.

That printed copies be circulated amongst our brethren as freely as possible; and that the memorial, so signed, be presented to the commission by the Lieutenant who may be summoned before them for examination.

Several Lieutenants who assisted in the battle of Trafalgar were present.

MR. BALLINGALL.—The following testimonial has been presented to James Ballingall, Esq., Kirkcaldy:—

We, the subscribers hereto, inhabitants of Kirkcaldy and neighbourhood, cannot allow you to leave the country of your birth, without offering to you our best wishes for your future happiness and prosperity in the rising colonies of Australia, to one or other of which you have determined removing yourself and family.

Those of us who have been partners in the Kirkcaldy and London Shipping Company, of which you have been manager ever since its commencement, (now about thirteen years,) have considered your conduct in the management of that concern, as highly honourable to yourself, and in every way satisfactory to your employers.

Many of us, conversant in shipping property, well know the deep interest you have taken, and the zeal you have manifested in the improvement of the mercantile navy of Great Britain, having for your

object the saving of human life and mercantile property, by the more secure and substantial construction of trading vessels, as illustrated in your publications on the subject, and as exemplified in the sailing smacks you have had under your charge.

In presenting to you this voluntary written testimonial of our respect for you as a gentleman, and a member of our community, we hope you will receive it as a proof of our friendship and sincere wish that your success in the country to which you are going, may be equal to your own expectations, and to your merits, in whatever line your exertions for the benefit of your family may be directed.

We even indulge a hope, that this document may not prove of a transient nature, but that thereby, your children's children, to a late posterity, may be proud of being enabled to trace in another quarter of the world, the respect in which their common ancestor was held in his native country.

Given at the Royal Burgh of Kirkcaldy, North Britain, in the month of June, A.D. one thousand eight hundred and thirty-eight.

Signed by the Provost, Bailies, and thirty-seven other gentlemen.

London, June 23d, 1838.

I cordially concur in the sentiments expressed in this testimonial; the whole points embraced in it being consistent with my own knowledge. And I have great pleasure in bearing testimony to the great respectability of the persons whose signatures are hereto adhibited.

ROBERT FERGUSON, M.P., and Lord Lieutenant of the county of Fife.

STATEMENT OF THE PACKETS.

British Postage of a Single Letter to or from				PALMOUTH STATION.	Last Packets sailed.	Next Packets due.
Lon.	Falm.					
2s	6d	1s	7d	Lisbon	Every Saturday. Liverpool Nov. 19	Royal Tar, Nov. 25
2	7	1	8	Madeira		
2	2	2	2	Spain		
2	6	1	11	Gibraltar	Every 2nd Sat. Tagus, Nov. 12	
2	6	2	3	{ Malta, Greece, and Corfu. }		
				{ Egypt & India ... }	Every 4th Sat. Braganza, Oct. 29	
2	7	1	8	Madeira	1st Tuesday in each Month. H.M.B. Seagull, Nov. 9	Opossum, Nov. 23
3	6	2	7	Brazil		
2	2	1	3	America	1st Wed. ditto. H.M.B. Reindeer, Nov. 10	Skylark, Nov. 10
2	2	1	3	{ Jamaica, Leeward Islands }	1st Day in every Month. Lord Melville, Oct. 3	Lord Melville, Dec. 26
				La Guayra		
3	1	2	1	Mexico & Havanna	—15th ditto..... H.M.B. Peterel, Nov. 17	Swift, Nov. 21
2	2	1	3	{ Jamaica, Leeward Islands }	—15th ditto..... H.M.B. Tyrian, Nov. 17	Magnet, Dec. 10
				Carthagena		

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

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

TABLE XXXVIII.

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

1 Carlsrona Foot = 0.9926033333 English Feet.

1 English Foot = 1.0074517850 Carlsrona Feet.

Carlsrona or English feet.	English feet, and Dec. parts.	Carlsrona feet, and Dec. parts.	Carlsrona or English feet.	English feet, and Dec. parts.	Carlsrona feet, and Dec. parts.	Carlsrona or English feet.	English feet, and Dec. parts.	Carlsrona feet, and Dec. parts.
1	0.993	1.007	40	39.704	40.298	79	78.416	79.589
2	1.985	2.015	41	40.697	41.306	80	79.408	80.596
3	2.978	3.022	42	41.689	42.313	81	80.401	81.604
4	3.970	4.030	43	42.682	43.320	82	81.393	82.611
5	4.963	5.037	44	43.675	44.328	83	82.386	83.618
6	5.956	6.045	45	44.667	45.335	84	83.379	84.626
7	6.948	7.052	46	45.660	46.343	85	84.371	85.633
8	7.941	8.060	47	46.652	47.350	86	85.364	86.641
9	8.933	9.067	48	47.645	48.358	87	86.356	87.648
10	9.926	10.075	49	48.638	49.365	88	87.349	88.656
11	10.919	11.082	50	49.630	50.373	89	88.342	89.663
12	11.911	12.089	51	50.623	51.380	90	89.334	90.671
13	12.904	13.097	52	51.615	52.387	91	90.327	91.678
14	13.896	14.104	53	52.608	53.395	92	91.319	92.686
15	14.889	15.112	54	53.601	54.402	93	92.312	93.693
16	15.882	16.119	55	54.593	55.410	94	93.305	94.700
17	16.874	17.127	56	55.586	56.417	95	94.297	95.708
18	17.867	18.134	57	56.578	57.425	96	95.290	96.715
19	18.859	19.142	58	57.571	58.432	97	96.283	97.723
20	19.852	20.149	59	58.564	59.440	98	97.275	98.730
21	20.845	21.156	60	59.556	60.447	99	98.268	99.738
22	21.837	22.164	61	60.549	61.455	100	99.260	100.745
23	22.830	23.171	62	61.541	62.462	150	148.890	151.118
24	23.822	24.179	63	62.534	63.469	200	198.521	201.490
25	24.815	25.186	64	63.527	64.477	250	248.151	251.863
26	25.808	26.194	65	64.519	65.484	300	297.781	302.236
27	26.800	27.201	66	65.512	66.492	350	347.411	352.608
28	27.793	28.209	67	66.504	67.499	400	397.041	402.981
29	28.785	29.216	68	67.497	68.507	450	446.671	453.353
30	29.778	30.224	69	68.490	69.514	500	496.302	503.726
31	30.771	31.231	70	69.482	70.522	550	545.932	554.098
32	31.763	32.238	71	70.475	71.529	600	595.562	604.471
33	32.756	33.246	72	71.467	72.537	650	645.192	654.844
34	33.749	34.253	73	72.460	73.544	700	694.822	705.216
35	34.741	35.261	74	73.453	74.551	750	744.452	755.589
36	35.734	36.268	75	74.445	75.559	800	794.083	805.961
37	36.726	37.276	76	75.438	76.566	900	893.343	906.707
38	37.719	38.283	77	76.430	77.574	1000	992.603	1007.452
39	38.712	39.291	78	77.423	78.581			

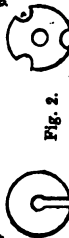
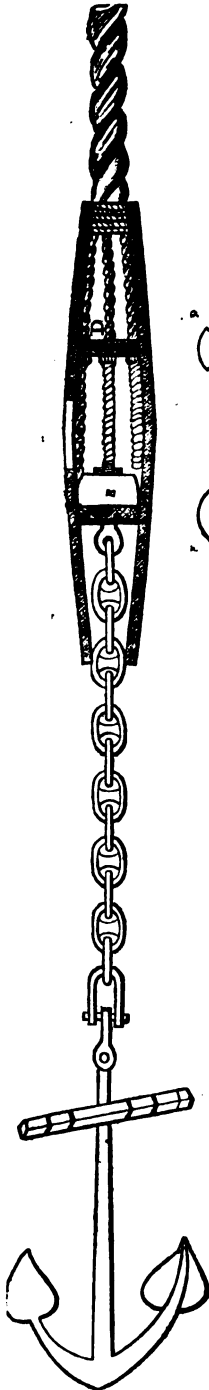


Fig. 2.

Fig. 1.

IMPROVED FRENCH CABLE.—A combination of the hempen with the chain cable has been introduced into the French navy with some success. The chain cable is affixed to the anchor in the usual way, in length from twenty-five to forty fathoms. The object of this arrangement is to allow the chain to drag along the bottom and prevent abrasion to the hempen cable. Thus it is supposed that greater elasticity is produced than can be obtained by a chain cable alone, and the durability of the hempen cable is insured for a greater length of time; the cable being tighter and more manageable, is more favourably adapted for the revolutions of the ship either in casting or weighing anchor, likewise for kedging. The advantages of lightness are evident. Many other points of recommendation will present themselves to parties interested in this subject besides cheapness.

M. Fouque, the inventor of the method by which the chain and hempen cables are united, has designated his contrivance with characteristic French vanity "fouquiere." This consists, as will be perceived by reference to the plate, of a kind of barrel shaped ferrule, F, of metal, into one end of which is inserted the end of the hempen cable A, and into the other the corresponding end of the chain B. These are prevented from withdrawing from the ferrule by two conical glands D, E, one inserted within the strands of the cable, and the bolt of the chain passing through the other, so that when the chain is extended, the glands jam fast within the ferrule, and are of course held the faster the greater the strain on the cable. For the purpose of fixing and disengaging the two cables, holes are left in the ferrule by which the glands are withdrawn, which are easily loosened by drawing the ferrule forward when upon the deck.

Description of the engraving Fig. 1, is a section of the ferrule showing the connection of the two cables. Fig. 2, are plans of the glands D and E. A, hempen cable; B, chain cable; C, ferrule; D, E, glands; F, hole in ferrule for withdrawing the glands; the gland E, for the chain is made with a slit to pass the bolt of the chain into the centre, as the stud is fixed upon the bolt with a rivet fastening; and the gland D is made with three or four slits or grooves to receive the strands of the rope which are tied in knots to prevent their slipping through.

Another method is to substitute a broad

ring instead of the ferrule, and unite both chain and cable into one joint, by passing the bolt of the chain through the centre hole of the gland for the hempen cable, and then wrapping the strands and chain with a wrapper and binding the whole with yarn in the usual way.

We lay the foregoing before our readers as a novelty from the pages of that valuable monthly publication "the Civil Engineer and Architect's Journal." The seaman, we apprehend, however, will not be so well satisfied with it, as the inventor and ingenious though it may be, we suspect it will be found but an awkward companion either on deck or in the hawse when letting go the anchor or when *heaving in*. It is obvious that the hempen cable will suffer at the end of the ferrule where it will not long hold together. Indeed it is so clumsy an affair that we are surprised to find that any success has attended it, and expect to hear little more about it. Those who know what a chain cable flying through the hawse is, particularly in deep water, will see the reasons which have guided us in our opinions.—ED. N. M.

REPORT ON THE HARBOUR OF PORTHDYNLLAEN. *By Lieut. W. L. Sheringham, R.N., surveying the Coast of Wales.*

Return to an Order of the Honourable the House of Commons. dated May 7, 1838 ;—for,

COPY of a Report on the Harbour of Porthdynllaen, made in pursuance of the Report of the Select Committee appointed to inquire into the existing communication between London and Dublin, and to consider what improvements could be made therein.

Porthdynllaen, in the south part of Caernarvon Bay, is formed by a narrow rocky projection of the coast from sixty to 100 feet high, the north extreme point of which bears

	Compass.	Geo. miles.
From Bardsey Island	N.E. by E. distance	14
Holyhead (South Stack Light-house) S. by W. $\frac{1}{2}$ W.		22 $\frac{1}{2}$
Caernarvon Bar (entrance to Menai Strait)	S.W. by W. $\frac{1}{2}$ W. ..	12 $\frac{1}{2}$
Liverpool via Holyhead		87
Liverpool via Menai Strait		67
Smalls Lighthouse	N.E. by E ...	80
Kingstown Harbour, Dublin		65
Wicklow		58

In an easterly direction, from the above extreme point, Porthdynllaen Bay is about 2,240 yards wide, and its greatest extent at right angles to that line of direction is rather more than 1,000 yards.

The bay is generally clean, with the exception of a large rock, called Carrig-y-Chwislen, which is bold to, and uncovers the last quarter ebb. The dimensions of this rock are, from east to west, its longest extent, 100 feet; and its breadth, from north to south, about fifty feet. It lies E. by compass from the extreme point above-mentioned, leaving a clear sound, with five fathoms depth between it and the point, and distant therefrom 1,280 feet.

The depth of water in Porthdynllaen Bay at low water springs, is 4 $\frac{1}{2}$ fathoms sand over clay, that depth decreasing gradually to the sandy beach which bounds it.

The extent of the bay, at least that portion of it which may be made available for shipping, contains an area of about 110 or 115 acres, throughout the whole of which space the least water would be two fathoms at low water springs.

The general set of the tide in the bay of Porthdynllaen is from the eastward along the eastern shore, and through the sound above-mentioned, continuing at least nine hours of the twelve. In the sound at spring tides the stream has a velocity of about three knots, but in the bay itself little or no tide is felt, vessels riding flood with their heads to the northward, only during the first two hours of the tide.

It is high water at Porthdynllaen at 8h. 30m. on full and change days, and the rise at springs is sixteen feet.

On the west side of the bay convenient quays and a pier might be built, where large steam-vessels, drawing fifteen feet water, might always lie afloat, to the number of eight or more, provided these quays were protected by a breakwater connected with the above-mentioned rock "Carrig-y-Chwislen," and so placed with relation to the pier, that a clear channel should be left through the sound for the passage of vessels into and out of the harbour without exposing them to any body of sea. With such protection I have no doubt that vessels lying alongside of the quay would invariably be in smooth water.

As there would be no backwater or scouring action of the tide, except through the sound to seaward, which would be favourable, there is reason to conclude that the quays would be constantly kept clear from silt or deposit; a consideration of great weight in the formation of a harbour.

This harbour will be peculiarly easy of access or departure, as the Rivell Mountain would ensure a good land-fall, as from the nature of its approach and its excellent shelter steam-vessels would leave and arrive at their moorings in smooth water, and as in stormy weather they might make a slant out instead of being obliged to stem a heavy breaking sea.

In the event of any accident happening to the engines, the harbour might be regained with facility under canvass.

Having thus described Porthdynllaen, and pointed out its peculiar advantages of approach and departure, its excellent shelter, its clean anchorage, and the facility it affords for the construction of quays and piers, I may venture to give my opinion that it is well calculated for a Packet station, and that there is no other port on the west coast of Wales which could be so well or so economically adapted to that purpose.

The foregoing advantages must also have great weight, when considering it in the light of a harbour of refuge. The whole coast of Wales included between Milford and Liverpool presents no place of safety for which a vessel in distress can run in bad weather; St. Tudwall's Roads being by no means, under many circumstances, a safe roadstead, and all the ports being bar harbours, to be taken only in the day time near the top of high water, and then with some difficulty; if, therefore, it be desirable that the trade of St. George's Channel should have a harbour of refuge on this coast, then there is none so well adapted to that purpose as the bay of Porthdynllaen might be made. It is situated nearly midway between the Smalls Lighthouse and Liverpool; it has an excellent light (Bardsey) within 13 miles of it on one side, and second light (the Stack) within 23 miles

of it on the other side ; it has an approach perfectly free from shoals of any kind ; and the adjacent mountains being the most remarkable in North Wales, would serve as infallible marks to point it out.

As vessels navigating this channel usually draw under fifteen or sixteen feet ; ample room might be found in Porthdynllaen by a judicious harbour-master for 10 large vessels, while the smaller ones, such as the ordinary class of coasters, might either be anchored further in shore, a portion of the bay being set apart for that purpose, or they might take the ground in perfect safety.

As a refuge harbour, however, it would only serve on a small scale ; yet though not calculated for the reception or rendezvous of a very large number of vessels, there is no other place on this coast possessing similar advantages. It has also been urged against Porthdynllaen as a refuge harbour, that it is too deeply seated in Caernarvon Bay ; but such a condition appears to me in its favour, as it is more likely to meet the necessities of distressed ships, and it is not so deeply embayed as to prevent them from resuming their voyage with facility when required.

Porthdynllaen, even in its present state affords shelter to the coasters in most weathers ; it is open only to winds from north to east ; those winds do not bring with them a heavy sea, having a drift only of twenty-three miles, and several shallow banks break its force from that quarter.

The heaviest sea brought into Porthdynllaen is by winds from W. N.W. to N.N.W., against the effects of which it is absolutely necessary to guard ; this, however, would be effectually done by means of the pier and breakwater above alluded to, if properly constructed and judiciously placed by a good engineer.

(Signed)

W. L. SHERINGHAM,
Lieut. R.N. and Surveyor.

THE METEORIC SHOWER.—Sir, The night of the 12th of November being the time for the periodical display of an unusual number of meteors, I determined to locate myself in the delightful village of Richmond, Surrey, for the purpose of witnessing the annual return of these remarkable and hitherto unexplained phenomenon.

The wind blew fresh from N.N.E. and the night was consequently very cold. At 10h. 33m., a meteor fell without train from the star *Lyra*, and took its direction across the Milky Way. At 11h. another meteor fell from the star north of the *Pleiades*. At 11h. 48m., a large meteor with train fell from *Cassiope* and crossed the Milky Way at an angle of near 90 degrees. From 12 o'clock on the 12th, until 3h. 25m. on the 13th, nine meteors fell, crossing the Galaxy at angles, of from 70 to 80 degrees ; six were without trains and three with trains.

I now began to despair of observing the grand display seen in former years, but, recollecting that on some occasions, the "shower" did not occur till near four o'clock, I continued to direct my attention to the N.N.E. At 3h. 35m., nothing could exceed the beauty and grandeur of the north and eastern parts of the sky. From E. N.E. to north, meteors fell like a shower of bomb-shells in such rapid succession, as to defy every attempt to watch their particular direction and course among the stars, or to count their number. The whole heavens were illuminated by the light, such a prodigious

number of meteors diffused in their descent towards the earth, and a more magnificent sight could not possibly be conceived. At 3h. 55m. the "shower" ceased, and after four o'clock all traces of meteors were gone; the stars shone, however, without either diminution in number or brightness, and the atmosphere became remarkably clear.

The shower of meteors appeared to take their direction from N. N.E. and north, as if the course of their train was occasioned by the wind, which was blowing from the former point. The total number of meteors could not have fallen short of from four to five hundred. On the whole, we may conclude that the "meteoric shower" was equal in interest and splendour to those of any former year.*

ROBERT CARR WOODS.

ROCKS IN THE CHINA SEA.

In our last number, (p. 721,) we gave an account of some newly discovered rocks in the China Sea. The following accounts of two more dangerous rocks in the same ocean, neither of which have appeared in the charts, are from the columns of the *Shipping Gazette*.†

"Calcutta, July 28th.—Capt. Foster of the brig *Corsair*, while standing on his course from Singapore for China, fell in with a rock in the China seas not noticed in the charts. The following are the particulars:—May 2, 1838, at noon, by correct observation, was in latitude $9^{\circ} 48' N.$, longitude $108^{\circ} 28' E.$, steering N. by E., with a moderate breeze at E. by N. At P.M., saw from the maintop a rock bearing E. by N. $\frac{3}{4}$ N. distance off about one-and-a-half or two leagues, about twenty or twenty-five yards in length, and about fourteen feet above the water, of a white appearance when first seen. Was then in twenty-four fathoms, having run from noon seven miles N. by E., which will place the rock in latitude $9^{\circ} 54' N.$, longitude $108^{\circ} 35' E.$, allowing the island of Pulo Cecir de Mar to be in longitude $101^{\circ} 58' E.$, (this must be $108^{\circ} 58' E.$,) which island we were within three miles of the next day at noon.

Brig Corsair.

"J. G. H. FOSTER."

IMPORTANT TO MARINERS.—A newly discovered shoal by the ship *Rob Roy*, Captain Edward Rosetter, on her passage from Canton to New York. On Friday, 11th May, 1838, at $8\frac{1}{2}$ A.M., West Island, bearing S. half W., distance $7\frac{1}{2}$ or 8 miles, saw coloured water—put the helm down immediately, and while in stays, saw the rocks under the ship's bottom; I am quite sure there could not be more than from seventeen to eighteen fathoms water; sounded after the ship was about, had seven feet of water. The rocks could then just be seen under the ship. While in stays they appeared near the water's edge. West Island is in latitude $2^{\circ} 44' N.$, longitude $108^{\circ} 40' E.$, which will place the shoal in latitude $2^{\circ} 50' N.$, and longitude

* Last year we had no "meteoric shower," but a beautiful electrical display, an account of which will be found in our number for January last.—ED. N.M.

† These notices give additional value to the *Shipping Gazette*, and in point of naval foreign information, we have always found this paper ahead of every other.—ED. N.M.

108° 41' E. I consider the shoal very dangerous, and the discovery a very important one.

EDWARD ROSETTER.

The first of these rocks, that of the Corsair, lies in a S. W. direction from Pulo Cecir, and being so considerably above water, it is rather remarkable that it has not been seen by the numerous vessels which have followed the inner passage to China, or by Captain Ross while surveying the Catwicks, and Macclesfield shoal between which it lies. We shall, however, content ourselves with leaving it at present for the attention of navigators.

Of the latter, ships must be careful. It appears to form a part of the bank on which West and Flat Islands are situated, and which Horsburgh says is but "imperfectly known."

LARNE LOUGH HARBOUR LIGHT-HOUSE.—The corporation for preserving and improving the Port of Dublin, hereby give notice, that a Light-House has been erected at the entrance of LARNE LOUGH, Coast of County Antrim, from which a light will be exhibited on the evening of the first of February, 1839, and thenceforth from sun-set to sun-rise.

Specifications given of the position of the Tower, &c., by Mr. Halpin, the inspector of Light-Houses.

The Tower is built on Farres Point, at the eastern side of the entrance to LARNE LOUGH in lat. 54° 50' 55" N. and long. 5° 48' W. of Greenwich.

and bears from the Maiden Rocks	}	
“ North Light-house	}	.. S. W. $\frac{1}{2}$ W. dis. 5 sea miles,
“ Hunter Rock..		.. S. W. b W - $\frac{1}{2}$ W. 2 $\frac{1}{2}$ “
“ Curran Point..		.. N. E. b E. $\frac{1}{2}$ “

The Tower is circular, coloured white, having the lantern forty-seven feet over the mean level of the sea.

The Light is a *stationary* white light, showing to the Lough and seaward from S. to E. and in clear weather may be seen at a distance of eight miles.

Shelving rocks project from Farres Point for half a cable's length from the Light-house.

The bearings are magnetic. Var. (27° 30')

By order, H. Vereker. Sec.

*Ballast office, Dublin,
18th Oct. 1838.*

NEW LIGHT-HOUSE IN THE CATTEGAT.—The following has been received at Lloyd's from the Lords of the Admiralty, communicated by Her Majesty's Consul at Elsinore:—

Notice is hereby given, that from the first of November next, a revolving light will be shown on a quadrangular tower in the Isle of Hirtsholm, which lies on the western side of the Channel, between Lessoe Island and the coast of Denmark.

The light will consist of a lamp with three reflectors, and will revolve in about a minute and a half: it will stand forty-three feet above the level of the sea, and may be seen ten miles by an eye elevated ten feet.

From Easter to Michaelmas, the light will appear an hour after sun-set, and from Michaelmas to Easter it will appear half an hour after sun-set till sun-rise.

As the tower is intended to serve as a sea mark by day, it has been carefully whitewashed.

It is twenty-one miles distant from the light vessel on the Trindelen sand, on the north-east side of Lessee Islands.

COURT MARTIAL.—A Court-martial assembled on Friday, 19th, and Saturday, 20th, inst., on board the *Royal Adelaide*, to try Commander Richard Inman, late First Lieutenant of H.M.S. *Lily*, on charges preferred against him, by Commander J. Reeves, of the *Lily*. Commander Richard Inman was charged with being discovered, on the morning of 12th Aug. last, in bed with his servant boy, named Payne; and for being reported absent from the ship on the following day, and continuing so until the 19th, when he returned to the *Lily*. A number of witnesses were called, by whom the most material or criminal part was explained away; yet leaving blame enough to warrant the Court, as they thought, to come to the opinion and conclusion which they did. The defence of Commander Inman was, that on the 11th of Aug. he dined with some friends on shore, and having taken a good deal of wine during the evening, he was not perfectly conscious of what he was doing. He, however, returned to the ship and lay himself down to sleep, partly dressed, and never awoke until the morning, when the boy Payne (who had come into the cabin in a state of intoxication during the night, unknown to Commander Inman) was observed fast asleep, seated on a trunk on the outward edge of his bed. With respect to the charge of absence or desertion, Commander Inman said, that intimation having been brought to him, that a letter had come from the Admiral, stating that John Payne and himself were to be kept under close arrest until they fell in with the *Pelican*, on board of which sloop they were to be sent to England, to wait the commands of the Lords Commissioners of the Admiralty, he was advised to go on shore, which he did, and where he remained till the 19th, in a most distracted state of mind at the imputation cast upon his character. He then resolved to return to the ship and report himself, which being done, he was kept under close arrest for two months. The evidence having been duly considered, the Court passed the following sentence:—"That the Court is of opinion that the fact of the said Commander Richard Inman having been discovered on the morning of the said 12th day of August, 1838, in bed with his servant, (whose name is John Payne) has been proved; but there has been no evidence to satisfy the Court that the prisoner was conscious of that circumstance. And the court is of further opinion, that the charge of delivering himself up as a deserter has not been proved against the prisoner, Commander Richard Inman. But the Court is of opinion that the conduct of the said Commander Richard Inman on the said 12th day of August, was highly irregular and unbecoming the character of an officer; and the Court doth therefore adjudge the said Commander Richard Inman to be dismissed Her Majesty's Service. And the said Commander Richard Inman is hereby so sentenced accordingly. Signed by the Court."

Log Books—We request the attention of our readers to the following:—An order was issued to the royal navy in the year 1805, directing all log-books to be kept in *civil* time, instead of in *nautical* time. A few merchant captains follow the same rule; but the greater number still keep their log-books in nautical time. Since it is probable that such records will assume a new degree of importance as journals of the weather, and will be compared with one another, as well as with the observations made at the light-houses and other places on land, it is desirable that all should be kept in the same time. Those merchant captains who still use *nautical* time, are invited to conform to the custom of the world, by adopting that followed by people on shore, as well as our ships of war. The cause of this difference still existing may perhaps be traced to our navigation books and to those academies where navigation is taught. If there be no real advantage in using nautical time, it would be better to teach it no longer in schools.

W. R.

As for advantage, we can see none whatever in it, but we see great disadvantage tending to confusion, which occasioned the alteration in the logs of Her Majesty's navy. The matter, however, rests with ship-owners, and while our navigation professors publish books to perpetuate the absurdity, we must expect *their* example to be followed; but we do hope to see it gradually disappear. We annex the Admiralty order alluded to.

General Instructions to Captains in His Majesty's Royal Navy.

Admiralty Office, 11th, Oct. 1805.

SIR,—I have the commands of the Lords Commissioners of the Admiralty, to send to you herewith a form of the log-book, which is intended in future to be kept in all king's ships, and to signify their direction to you, to cause the log-book of the ship under your command to be kept according to the said form, observing that the calendar or civil-day is to be made use of, beginning at midnight.

It is their Lordships' further direction, that in future, you send a log-book instead of a journal to this office, and to the navy board, as directed by the general printed instructions.

You will observe that there will be no necessity for making any alteration in the manner of marking the log board, but when it is copied into the book, the part beginning at midnight, is to stand first in the page.

It is necessary to remark to you, that the private night signal for each day of the month, is to continue in force until day-light of the following day.

I am, Sir, your very humble Servant,

J. B.

To Captain commanding H.M. Ship.

Law Proceedings.

POLICE.—*Merchant Seaman's Act.*—The master of the ship, James Ray, Mr. Edward Grierson, summoned to answer why he had carried out one Thomas Calhoun,

without having entered into an agreement as to the wages the latter was to receive, and in what capacity he was to do duty, as required by the act, under the penalty of £10.

Admitted that Caliban, a boy, was taken to sea without signing articles, but not on day stated.—Ship was short of apprentices; going out of dock, Caliban's mother brought him on board, and entreated that he should be taken without any agreement as to wages—if he turned out well, he would be articulated on his return—Caliban turned out badly, and on return of ship, an insolent application from him for wages had been refused—hence the present proceeding—Caliban present at the bar, a youth of 14, had never been at sea before. The magistrate considered this a case of extraordinary hardship on the Captain of the vessel who had never dreamt of giving offence. On referring to the act of Parliament, (clause 52,) he told him 'I regret that you have been brought here.' I consider your conduct has been praiseworthy, but I am compelled by the words of this act to fine you for having done an act of kindness. However, it shall be the lowest the law allows me to inflict, that is £5, but I will not order costs.—Our merchant Captains will see in this case of base ingratitude what their course should be on such occasions, and even be aware of receiving from the hands of the mothers themselves, such abandoned urchins as the one in question—who appears to have been another of Shakspeare's 'Calibans.'

Wages.—Captain Jonathan Cooper, of the ship Confidence, summoned at the instance of John Forbes, a seaman for 12*l.* 5*s.* for wages for the voyage from Stockton to Petersburg, and back to London.

Forbes was serving a topmast stay with a mallet, and a boy in a frolic passed several turns of spun-yarn round his neck, for which, as he would not desist from doing, Forbes gave him a tap on his head, which proved more serious than intended. Ship arrived at Petersburg, and Forbes was handed over to Russian police, and imprisoned several days, till by the boy's evidence it was proved the lad was in fault, and the blow not premeditated. This alone liberated him—in the mean time, a surgeon had been employed by the captain, but the amount of the bill was not communicated to Forbes, and his wages had been withheld for its payment.

The magistrate ordered Forbes his full wages, 12*l.* 5*s.*, and the captain had to pay the costs.

Murder.—This is one of those cases which arise from the lamentable insubordination of the Merchant Service.—Samuel Evans, a seaman of the ship Dispatch, a Southsea whaler, was brought to the police office, charged with the wilful murder of Robert Day, the second officer of that vessel, on the high seas on the 30th of April last.—As it is possible that this case may occupy the attention of a court of law, we shall give the following statement of it extracted from the log-book.

"Extract from the log-book of the Dispatch, April 30, 1838. At 7 P.M., sent a boat with Thomas Johnson, William Freeman, Samuel Evans, John Smith, Antonio Joseph, on board the Woodlark Whaler, Captain Hardie to wait for the captain. At half past nine P.M., Captain May came on board, and went below, I told the boat's crew to drop astern and hook on. Mr. Day, the second mate, hearing me giving them repeated orders, came up out of the cabin; seeing they were in liquor, he went into the boat and hooked her on. While in the act of hoisting the boat up, Wm. Freeman came up and looked over the rail. I told him to go and assist in hoisting the boat up, which he would not, but gave me abuse. The Captain hearing him insolent, came up, and remonstrated with him, and ordered him to the fall. Not going, but being very abusive, the captain struck him several times with a walking stick. William Freeman then ran forward with the intention of getting a weapon, expressing himself that he would do for the captain. Captain May then got two cutlasses up, keeping one for himself and giving me the other, ordering me to follow him. William Freeman still being abusive, and using mutinous expressions, Captain May struck him with the flat of the cutlass. By this time the ship's company were on deck. The captain then went aft abreast the main hatchway, the larboard side. Samuel Evans came up to the captain, seized the cutlass, and endeavoured to take it away from him, by which he got his hand cut. William Robinson had hold of the cutlass, and endeavoured to keep Samuel Evans from getting it away from the captain. Mr. Jones and several others were trying to drag him away. Mr. Day going to the captain's assistance, a scuffle ensued, I was then endeavouring to prevent William Freeman from going to the captain, as he swore he would do for th

captain. Mr. Day passed by me, saying, 'Look, here Mr. Brannon, I am stabbed;' at the same time holding his hand upon his left thigh. I told him to go below. I heard William Rose, say, 'Oh I am stabbed.' While I was endeavouring to keep the people off the quarter-deck, I heard Mr. Day call me several times, I then ran below, and found Mr. Day lying at the foot of the companion ladder, quite speechless, Mr. Jones supporting his head, and Antonio Joseph with his hand upon the wound, the blood flowing very fast. The captain was then getting a tourniquet, which he brought, and put on. It stopped the blood. Sent for the doctor of the Woodlark—it was then 10 P.M. In a few minutes the doctor came along with Captain Hardie. Mr. Day was then sinking fast. The doctor said nothing further could be done, as the tourniquet was on, and the wound bandaged. After removing Mr. Day into the cabin, and administering everything possible, he kept gradually sinking till twenty minutes to eleven P.M., when he expired. During this time the captain went on deck. Joseph Robinson told him for God's sake not to go forward. Captain May then came below, and sat up in the cabin all night with the doctor. Captain Hardie and myself at daylight called all hands; at six P.M. put William Freeman and Samuel Evans in irons, and stationed them aft by the traffrail. May 1, 1838.—The wound being examined in the presence of Captain May, Captain Hardie, two officers belonging to Badagoda, the doctor of the Woodlark, myself, and ship's company, William Rose said that he was trying to get Samuel Evans away, when Mr. Day came up for the same purpose, and accidentally run upon the cutlass. THOMAS BRANNON, chief mate."

The vessel was lying at the time in Badagoda Bay, on the coast of Timor.—In this affair which had taken place in consequence of the insubordination of the prisoner and another man, the mate fell in the defence of the captain, the femoral artery was divided and he bled to death. A point of law was raised by the prisoner's solicitor, by which, the right of the captain to bring out the cutlass was questioned, and it was eventually decided, that he had no right to strike the prisoner either with the walking stick or the cutlass; the fatal blow also was considered to have been given by the captain who it was insinuated having been on a visit, had had liquor enough to excite him. This was denied, but the affair for the present terminated in the *release* of the prisoner, whose solicitor considered the whole affair a *dexterous invention* of the captain to justify a series of cruelties for which he would be made to answer! So much for the support which the discipline of the merchants' service received, and the *consideration* entertained for the difficult and arduous duties of the merchant captains. We sincerely hope this case will go further, and that the *original cause* of the mischief will meet with due punishment.

Assault at Sea.—The master of the ship Branches, Mr. Hugh Mackenzie, from St. John's New Brunswick, appeared to answer a charge of assault on Thomas Combs, his cook. It appeared that the captain had been in the habit of beating his cook, a negro, with a broomstick; and had treated him very brutally on the occasion for which he now appeared, chasing him fore and aft the vessel. The captain in his defence said, the man was negligent, and with allusion to his crew, he added, "if we didn't touch them up a little sometimes, the insurers at Lloyd's would suffer." This is a novel kind of argument.

The captain was fined eighteen shillings, and the cook left the office trembling to return to St. John's with him, which he was obliged to do by the act of parliament; as the captain had threatened to kill him and throw him overboard on the passage. British seamen should know that such proceedings are not suffered in men-of-war.

Wages.—Three seamen summoned the owner of the Brig Ariel for their wages, 4*l.* 5*s.* for a voyage from Newcastle to Schiedam and back; seamen had signed articles with a provision that if required, they were to leave the ballast at sea, on being paid the customary rate of the port. At the entrance of the Brielle, coming home, brig grounded, and was compelled to return to Rotterdam, surveyed and ordered to be hove down, to be repaired for voyage home. On brig's arrival at Rotterdam, the three seamen refused all duty, stating "the brig was safely delivered into agent's hands and was under average, *that thenceforth they must be paid* for their work by agreement." Captain refused entering on terms with them and employed three Dutchmen in their stead.

The seamen were lodged and provisioned at the expense of the brig, during ten days while she was heaving, and aggravated their conduct by coming down to the vessel while under repair; by using irritating language to the mate and two of the crew, who had remained by the ship endeavouring to excite them to follow their

example, in which however they failed. It was decided that the seamen had acted contrary to the articles which they had signed, and that in deducting the wages of the Dutchmen employed in their stead, from what was due to them, they were dealt most leniently with in return for their brutal insubordinate and mutinous conduct.

The case was decided at Newcastle, the names of the seamen being, William Brown, Nicholas Hutton, and Andrew Sparr.

THE SARNIA.—*Salvage.*—Claimed by the crews of two boats the *Hero* and *Kent*, from the owners of the *Sarnia* schooner, for services rendered to her on the night of the 2nd of June last. *Sarnia* (74 tons) value 1500*l.* from Guernsey, was off South Foreland, on evening of 2nd of June, heavy fog came on, got on a rock, boats put off, services of *Hero* offered and accepted, and with *alleged* exertions of *Kent*, got *Sarnia* off—Tender of 10*l.* rejected. The court determined that no agreement for the service of the *Kent* had been made, that those of the *Hero* were sufficient to meet the exigencies of the case. Reward offered was commensurate with labour employed, but such was not the principle recognized by the court. It was right to encourage men to look out for vessels in distress, and 30*l.* with costs was therefore awarded.

WRECKS OF BRITISH SHIPPING—CONTINUED FROM THE SHIPPING GAZETTE.

(Continued from page 671.)

VESSELS' NAMES.	BELONG TO.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICU LARS.
Adventure	Newcastle	Bell			Abandoned	13 Oct	Crew saved
Africa		Skelton	London		C. Ceylon	18 July	
275 African			Guyaquil	Bayonne	C. France	8 Nov	Four saved
Albion					K. Knock	29 Oct	Crew saved
Atlas	Berwick		Memel	Berwick	Spittal P,	5 Nov	Crew saved
Avalon	St. Johns	Crow			Rovers Isld.	7 Sept	
Bloom Schooner	Dysart	Mealy	Bangot		St Johns F	23 Oct	Three Lost
Bridget	Liverpool		Liverpool	Africa	Nuna	28 June	Crew saved
280 Bridget	Liverpool	Turner reported by	the Commo.	Decter		Oct	
Broughty Castle	Dundee		Swanage	Gibraltar	ran foul of	6 Oct	Crew saved
Catherine		Heasley	Belfast	Donaghda	Forland	9 Nov	Crew saved
Charlotte	Sunderland			Beaumaris	Beaumaris	31 Oct	Crew saved
285 China		Vaughan	St. John	Dublin	Abandoned		Cw ad & Ind
Earl Dalhousie		Fallen in	with off	Hogland	Abandoned	11 Oct	at Plymouth
Edward			Drogheda	Lancaster	Lytham	15 Oct	Crew saved
Eliza	Glasgow				Pentland	Oct	
Elizabeth		Thomas	Bristol	Madras	B Bengal	9 Jan	
290 Friendship	Sunderland	Bowman	Leaham	London	off Scarbor	28 Oct	Some saved
German		Spencer	London	Petersburg	Gottenbrg	29 Oct	
Hutchinson	Sunderland					Nov	
Hope St.					Long Sand	Oct	Two saved
Isabella	Sunderland	Penman			Whitby	17 Oct	Crew saved
295 Ivanhoe			Monrose	Newcastle		2 Oct	Crew saved
Java	Liverpool		Callao	Liverpool	Long Isld.	22 Oct	Crew lost
Lady Charlotte					Hartland	Oct	
Lively	Towey	Gates		Tibermoray	Sandy I.	11 Oct	Crew saved
Maria	Tobermoray	Henderson		Montrose	At Sea	12 Oct	All lost
300 Mary and Ann	Montrose	Dempster	Newcastle	abandoned	in N. Sea	20 Oct	
Niagara	Newcastle	Fallen in	with				
Northern Yacht	Steamer						
Rainbow	St. Johns	Walsh	Calcutta		Rovers Isld	7 Sep	
Rajah Rance		Phillips		Liverpool	Hoghy	1 Aug	
305 Rankin	Glasgow	Mitchell	China	Newfoundland		14 Sep	Crew saved
Ruby			Liverpool	Bombay	J. Ocean	22 Jun	Crew saved
Stranger		Serrehold	Yarmouth	Dundrum B	Abandoned	at sea.	
Swallow		Haring		Hull	W Mouse	27 Oct	
310 Trafalgar St.	Dublin	Freeling			Abandoned	29 Oct	Cw ad by Hy
Usa	Dartmouth	Prowse	Torquay	Miramichi	Abandoned	19 Sep	Crew saved
Victoria			Iceland	Querc	Gaspé	29 Oct	

PROMOTIONS AND APPOINTMENTS.

APPOINTMENTS.

ACTEON, 26.—*Midshipmen*, O. F. Crewe. **ANDROMACHE, 28.**—*Mate*, C. Moore. **BRITANNIA, 120.**—*Assistant-Surgeon*, W. P. Banks; *Mate*, W. F. Robinson; *Clerk*, F. Siddal. **CAMELEON, 10.**—*Lieutenant*, M. Hunter; *Second-Master*, H. Webb, *Assist.-Surgeon*, J. Chambers. **DAPHNE, 18.**—*Capt* J. W. Dalling; *Lieut.* E. G. Farnshawe, J. B. Massie; *Master*, H. Webb; *Pur.*, H. Brenton; *Sec.-Master*, J. R. Duncan,

GANGES, 84,—*Commanders*, W. Griffen; *Lieutenant*, N. Norway; *Master-Assistant* G. Dawe; *Mate*, W. Bouchier; *Vol.*, F. Woolcombe; *Clk.* S. Pole; *Mate*, P. Coles, T. Davies; *Midshipman*, H. Vansittart. HASLAR HOSPITAL,—*Head-Mate*, B. Horsburgh. LILY, 16,—*Assist.-Sur.* H. Edmonds. MALABAR, 74,—*Lieutenant*, G. W. Winlo. MÆGERAL, 16,—*Second-Master*, G. Horwood. MELVILLE, 74,—*Assist.-Sur.* G. D. Gordon, S. Allen, A. A. Mackey. NIMROD, 20,—*Midshipman*, G. D. Gordon. PELO-
RUS, 16,—*Purser*, H. A. Vaile. RACER, 16,—*Lieutenant*, W. Chambers. ROVER, 18,—*Midshipman*, W. Thomas. RUSSELL, 74,—*Purser*, J. A. Nichols. SAN-JOSEF,
—*Midshipman*, J. Hawkins.

Dr. Benjamin Browning of the Navy, has been appointed Surgeon of the new Juvenile Prison Establishment at Parkhurst. We are not aware of any gentleman more fitting for the situation from his experience, professional talent, and universal attainments; and still more, from his possessing a kind disposition, joined to a steady and inflexible perseverance in the execution of his duty.—*Hants Telegraph*.

MOVEMENTS OF HER MAJESTY'S SHIPS IN COMMISSION.

AT HOME.

ÆTNA, 6, St. V., Capt. A. T. E. Vidal, 19th Oct., arrived at Portsmouth from Africa; 13th Nov. paid off. BLAZER, St. V., 28th arrived at Plymouth, from the Mediterranean. CAMELON, 10, 15th Nov., commissioned at Portsmouth, by Lieut. G. M. Hunter. CHAMPION, 11, Capt. G. H. Vincent King, 23rd Oct., arrived at Portsmouth from North America; 24th sailed for Plymouth; 31st arrived to be paid off. CLEOPATRA, 26, Hon. Capt. G. Grey, 12th Nov., at Sheerness from Cronstadt. DAPHNE, 18, 16th Nov., commissioned at Portsmouth by Capt. Dalling. EDINBURGH 74, Capt. W. H. Henderson, 21st October, sailed from Portsmouth for West India. LILY, 16, Com. J. Reeve, 11th Nov., sailed from Plymouth for Coast of Africa. METEOR, St. V., Com. D. Pritchard, 14th Nov. at Falmouth, from Pembroke on way to Sheerness. NIGHTINGALE, commissioned 13th November, fitting at Devonport. PILOT, 16, Com. G. Ramsay, 20th October, sailed from Plymouth for North America, having put back in a gale. PIQUE, 36, Capt. E. Boxer, 28th October, sailed from Plymouth for North America. RALIEGH, 16, Capt. M. Quin, 27th Oct., paid off at Sheerness. RAVEN, 4, Lieut. Bedford, 29th October, arrived at Portsmouth from Africa; 30th sailed for Woolwich; 8th Nov., paid off. ROSE, 18, Lieut. G. Larcom, 25th Oct., sailed from Portsmouth for Spain. ZEBRA, 16, Captain McCrea, 27th Oct; paid off at Sheerness.

ABROAD.

ALGERINE, 10, Lieut. Thomas, 25th June arrived at Singapore, from Penang, 5th July remained. BLAZER, St. V., 10th October sailed from Alexandria for Malta. BRISK, 3, Lieut. A. Kellett, 25th August at Sierra Leone. CARYSPORT, 28, Capt. Sir B. Martin, 8th October, arrived at Malta, remained 18th. CASTOR, 36, Capt. E. Collier, 25th October sailed from Valentia for Barcelona. CEYLON, 2, 15th October at Malta. CHARYBDIS, 3, Hon. Lieut. Gore, 29th Sept., arrived at Halifax and sailed for Bermuda. CLEOPATRA, 26, Hon. Capt. G. Grey, 27th October arrived at St. Petersburg. COLUMBIA, 2, 15th Sept., Grenada. COMUS, 18, Com. Hon. P. P. Carey, 19th September at Jamaica, from St. Jago de Cuba; 21st sailed for Morant Keys; 23rd at Jamaica. CONFIDANCE, 2, Lieut. Stopford, 26th, Sept., at Malta; 10th October, sailed from Cutania and Syracuse. CONWAY, 28, Capt. C. R. Bethune, 16th June, arrived at Sydney; 5th July arrived at Fejee Islands. DIDO, 18, Capt. L. Davies, C. B., 16th October, sailed from Malta. ECHO, St. V. Lieut. James, 22nd September, at Jamaica from Barbados. ESPOIR, 10, 17th October, arrived at Lisbon from Oporto. FAVOURITE, 18, 3rd July sailed from Madras, for Vizigapatam; 5th arrived. FIREFLY, St. V., Lieut. J. Pearce, 10th October, arrived at Gibraltar from Malta; sailed same day; 17th at Malta. FORRESTER, 3, 30th sailed from Simon's Bay to the wreck of the Duke of Northumberland. HARLEQUIN, 16, Com. J. E. Erakine, 11th October, at Malta from Palermo. HARRY, 10, 27th September, at Bermuda. HASTINGS, 74, Capt. H. Shiffner, 13th October arrived at Gibraltar, with Queen Dowager; 1st. Nov., arrived at Malta. HERCULES, Capt. T. F. Stephens, 12th October, sailed from Gibraltar for Barbados. HERMES, St. V., Lieut. Blount, 17th October, Mediterranean. INCONSTANT, 36, Capt. D. Pring, 5th October, arrived at Quebec from Bermuda. LARNE, 18, Com. P. Blake, 3rd June, arrived at Canton from Madras; sailed for Manilla. MADAGASCAR, 46, Capt. ——— 16th September, arrived at Jamaica from Bermuda; 23rd sailed for North side of the Island. MEDEA, 4, St. V., 6th October, arrived at Quebec from Halifax. PEARL, 20, Capt. Lord C. Puget, 27th Sept., at Halifax. PELORUS, 16, Com. F.

Harding, 5th July sailed from Sydney, for New Zealand. RACEHORSE, 18, Com. W. H. Crawford, 3rd Oct., sailed from Quebec. RANGER, 5th July sailed from Sydney, for Port Phillip. RATTLESNAKE, 28, Capt. W. Hobson, 21st Aug. arrived at Madras from Calcutta, and sailed for Trincomalee. RINGDOVE, 16, Com. J. Nixon, 12th Sept., sailed from Jamaica on a cruise. SATELLITE, 18, Com. J. Robb, 12th Sept., sailed from Jamaica for Havannah; 26th arrived. SCORPION, 10, Lieut. Com. E. Gayton, 15th October, Malta. SERINGAPATAM, 46, Capt. T. Leith, 27th August at Antigua. SERPENT, 16, Com. R. L. Warren, 12th Sept. sailed from Jamaica for Nassau. SNAKE, 16, Com. A. Milne, 28th August at Bermuda; 14th Sept. Jamaica; 18th sailed on a cruise. TRIBUNE, 24, Capt. Tomkinson, 17th October, arrived at Lisbon from a cruise. VESTAL, 26, 27th September at Bermuda. VOLAGE, 28, 13th August, arrived at Madras. VOLCANO, St. V., 25th October, arrived at Gibraltar, and sailed again. WANDERER, 16, Com. T. Bushby, 20th Sept., at Jamaica. WASP, 16, Lieut. Crozier, 4th October sailed from Malta for Gibraltar; 25th arrived. WEAZLE, 10, Com. J. Simpson, 25th October sailed from Valencia for Castellon de la Plana. WELLESLEY, 74, Capt. F. Maitland, 5th July at Singapore. WIZARD, 10, Lieut. Com. E. L. Harvey, 16th Sept., arrived off Bahia. WOLF, 18, Capt. E. Stanley, 30th August sailed from Madras for England.

Births.

On October the 20th, at Pen Tamar Cottage, Stoke, Plymouth, the lady of Captain W. Wm. Walker, R.N., K.T.S., of a daughter.

Marriages.

At Edgeworth Town, Ireland, on the 8th Nov. Capt. Francis Beaufort, R.N., to Honora, daughter of the late Richard Lovett Edgeworth, Esq.

On the 31st, Oct. at Old Marylebone Church, the Rev. Wm. Palmer, M.A., of Worcester College, Oxford, to Sophia, eldest daughter of Capt. Beaufort, R.N., Hydrographer to the Admiralty.

On the 12th June, at St. David's Church, Hobart Town, John Price, Esq. third son of the late Sir Rose Price, Bart., to Mary, eldest daughter of the late Major Franklin, and niece to his Excellency Sir John Franklin.

On the 1st November at St. Andrew's Church, Lieut. S. Fowell, R.N. son of the late Capt. Fowell, R.N., to Charlotte, daughter of Mr. J. Row, apothecary, Cornwall-street.

On the 5th November, Capt. P. D. Bingham, R.N., to Jane, widow of the late Capt. Howard, of the Hon. Company's European Regiment, Calcutta.

At Hellenville, Upper Canada, Captain Robert Stevens, 37th Regiment, to Helen, relict of Captain Benj. Street, R.N., daughter of the late J. Fogo, Esq. Edinburgh.

At St. James's, Captain the Hon. Edward Wodehouse, R.N., to Diana, only daughter of the late Col. Thornton, of Falconer's hall, Yorkshire.

Lately, Ambrose Haynes, Esq., of

East Street, Red Lion Square, to Jane daughter of the late Captain C. Pollard, R.N.

Lately Edward Nairne, Esq., of Lambeth Terrace, to Elizabeth, daughter of Captain Guyon, R.N., of Richmond, Surrey.

Deaths.

At the Royal Naval Hospital, Stonehouse, Oct. 31st Captain John Pole, son of the late Rev. Dr. Pole, of Burford, Wilts, and nephew of the late gallant Admiral Sir C. Maurice Pole.

At Marshall Hall, Dublin, on the 31st October, aged 50 years, Captain Thomas Monck Mason, R.N., son in law of the late Honourable Sir George Grey, Bart.

At his house, Alexander-square, Brompton, on the 23rd of Oct. Edward Knowles, Esq., Chief Clerk of the Transport Department, Admiralty. He was a faithful public servant for 42 years, and is deservedly lamented by a large circle of friends.

At St. Hilliers, Jersey, Commander George Bettesworth, R.N., aged 63 years.

At Swansea, on the 21st October, Commander John Langdon, who lost a leg when serving in the Endymion, in the memorable forcing the passage of the Dardanelles.

On the 30th October in Belgrave-square, Elizabeth Favell, wife of W. K. Dehany, Esq. and daughter of the late Vice Admiral M. H. Scott.

At Madras, Lieutenant John Ramsay, H.M.S. Favourite.

At Jersey, on the 2nd October, of dropsy, Commander Reuben Paine.

Lately, at Edinburgh, Lieutenant John Coxetter Shell, R.N.

At Sheerness, on the 17th October, Mr. Joseph Bassan, Assistant Surgeon, R.N.

On the 19th October, at her father's residence, in Cold Harbour, Gosport, Mary, eldest daughter of Rear Admiral Carter.

At Moretonhampstead, on the 14th November, Lieut. William Hooper, R.N. in his 54th year.

At Richmond, Surrey, Henry S. Butt, Esq., Commander, R.N. in his 69th year.

At Ryde, on the 1st November, retired Commander William Bush, aged 77 years.

At Kingston, on the 19th October, Lieutenant Cookson, R.N., aged 45.

At Bletchingly, Thomas, son of the late R. Allan, Esq., Surgeon, R.N., in his 17th year.

At Jordanstone, Perthshire, George W. H. Knight, Captain, R.N. Inspector General of the Coast Guard in Scotland.

METEOROLOGICAL REGISTER,

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

OCTOBER, 1838.

Month Day.	Week Day.	BAROMETER, In Inches and Decimals.		FAHRENHEIT'S THERMOMETER In the Shade.				WIND.				WEATHER.	
		9 A.M.	3 P.M.	9 A.M.	3 P.M.	Min.	Max.	Quarter.		Strength.		Morning.	Evening.
								A.M.	P.M.	A.M.	P.M.		
21	Su.	In Dec.	In Dec.	0	0	0	0	S.W.	S.W.	1	1	Od. (2)	O.
22	M.	30.16	30.10	57	60	55	63	S.	S.	1	1	O.	Bcm.
23	Tu.	29.96	29.86	55	57	53	60	S.	S.	1	2	Og.	Og.
24	W.	29.72	29.84	53	58	52	59	S.W.	S.W.	2	2	Bcp. (1)	Bc.
25	Th.	30.11	30.04	48	57	43	58	S.	S.	1	2	Bc.	O.
26	F.	29.77	29.81	55	56	51	59	S.W.	S.W.	4	5	Or. (2)	Bc.
27	S.	29.90	29.76	48	54	39	57	S.	S.W.	4	6	Qbc.	Qor. (3) (4)
28	Su.	29.60	29.56	50	54	49	58	S.W.	S.W.	2	4	Or. (1)	Qbc. (4)
29	M.	29.34	29.55	47	49	44	51	W.	W.	10	6	Gr. (1)	Qor.
30	Tu.	29.73	29.74	44	50	38	51	S.W.	S.W.	3	3	B.	Bc.
31	W.	29.82	29.76	42	41	39	43	N.E.	N.W.	4	4	Ogr. (2)	Bc.

OCTOBER—Mean height of the Barometer 29.977 inches; Mean temperature=51.0 degrees; Depth of Rain fallen = 1.80 inches.

NOVEMBER, 1838.

1	Th.	29.41	29.32	46	46	36	49	W.	S.W.	2	2	Or. (1)	Bcp. (3)
2	F.	29.32	29.26	40	44	35	47	S.W.	N.W.	3	4	B.	Bcp. (3)
3	S.	29.44	29.31	36	44	31	45	S.W.	S.	1	2	Bcm.	Or. (4)
4	Su.	28.85	28.80	44	52	40	53	S.W.	S.W.	1	1	Bc. (1)	Bc.
5	M.	29.15	29.24	44	45	40	49	S.W.	N.W.	2	2	Od. 2	Bcm.
6	Tu.	29.70	29.70	38	47	35	47	S.W.	S.W.	2	2	B.	Bc. (4)
7	W.	29.46	29.46	53	47	44	59	S.W.	S.W.	6	6	Qor. (1) (2)	Bcp. (4)
8	Th.	29.55	29.55	48	52	47	54	S.W.	SW.	4	5	B.	Or. (4)
9	F.	29.36	29.42	44	48	43	49	S.W.	S.W.	2	2	Or. 1 (2)	Bc.
10	S.	29.68	29.72	39	44	36	46	W.	S.W.	2	2	Bc.	Bc.
11	Su.	29.63	29.57	32	40	30	42	N.	N.E.	1	2	Of.	Od. (3)
12	M.	30.08	30.18	36	44	34	45	N.	N.	4	4	B.	B.
13	Tu.	30.40	30.38	34	43	32	45	N.E.	N.E.	2	2	B.	B.
14	W.	30.22	30.12	32	42	30	44	N.E.	N.E.	3	4	Bc.	O.
15	Th.	29.90	29.82	40	44	38	45	N.E.	N.E.	2	1	Ofd. (2)	O.
16	F.	29.67	29.63	41	44	39	46	N.E.	N.E.	1	2	Gof.	Gof.
17	S.	29.72	29.71	40	43	38	44	S.W.	N.W.	1	1	Of.	Bcfr. (4)
18	Su.	29.64	29.64	44	45	24	46	N.E.	N.E.	3	5	Or. (3) (4)	Or. (3) (4)
19	M.	29.55	29.48	39	38	38	40	N.E.	N.E.	6	5	Qor. (1) (2)	Qor. (3) (4)
20	Tu.	29.63	29.63	37	39	36	40	N.E.	N.E.	3		Ogr. (1)	Og.

Errata in September, 1838, Mean temperature, for 88.9 degrees, read 55.9 degrees; and in Errata under October, for 19th day of May, read 14th day of that month.

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

INDEX TO VOL. II.,

ENLARGED SERIES.

HYDROGRAPHY.

- Accident at Plymouth 835
 Actæon Islands, Pacific, Discovery of, with a chart, 13.
 Actæon, Voyage of H.M.S. in the Pacific, 73.
 Agger Channel, notice of its condition, 217.
 Alien and Quarantine Laws 797
 Allas, Observations on Strait of, 218.
 Alloy of zinc and copper 833
 Alta Vela I., remarks on by E. H., 11.
 Alacran, description of, 804.
 Ambrose I. and Felix, position of and directions for, 582.
 Amsterdam Island, 842.
 Arenas Cay, Gulf of Mexico, 723.
 Arroas Isles, Proas of, 795.
 Arrowsmith's Bank, position of, 366.
 Avis Islands, remarks on, by E. H., 11.

 Ballingall, Mr. testimonial to 856
 Bally, peak of, 219.
 Barbados, anchorage off, 433.
 Barlow Mr. W. H. on illuminating light houses 806
 Barrow J. visit to Geysers 818
 Bay of Fundy, on its navigation, 438.
 Beachy Head Light, on its position, 511.
 Beagle Bank, position, 682.
 Beata Island, remarks on, by E. H., 11.
 Belle Island, currents of, 76.
 Bellinghausen Island, position of, 738.
 Bermuda to Barbadoes, passage, 433.
 Belcher Capt. notice of 836
 Boulogne, Port of, description and directions, 145.
 Bonin Islands, anchorage off, 797.
 Bookit Battoo, position of, 793.
 Brazil, bank off the north coast of, 221.
 Bristol Channel, notice of new buoys in, 639.
 Browse Shoal, position, 683.
 Bruas river, anchorage off, 794.
 Buenos Ayres, on the anchorage of, 222.
 Buoys, entrance of River Dec, 295.
 Buoys, manacles, 294.

 Callaro, strait of, remarks on, 793.
 Campeche, on anchoring on the bank of, 506.
 Canea Bay, Candia, 758.
 Candia, on approaching, 759.
 China, Cochin, remarks on coast, 796.
 China Sea, rock at entrance, 796.

 China Sea, new shoals in, 721.
 China Sea, rocks in, 386.
 Christina Island, Marquesas, notice of, 74.
 Clark's Island, Pacific, 651.
 Claudius Rock, St. Senida, 151.
 Corsair rock, China sea, 386.
 Corsair Rock China Sea 386
 Curacoa, notes on, 363.
 Current between Monte Video and Rio, 577.
 ——— in Gulf of Mexico, 505.
 ——— in Pacific Ocean, 583.
 ——— of the St. Lawrence, 75.
 ——— of the ocean, Atlantic, 859.
 Currents of the ocean, 837.

 Dee River, buoys at entrance to, 295.
 D'Entrecasteaux channel, 635.
 Dulce Gulf, notes on, 817.

 Eustatius, St., Island, 436.

 Falkland Islands, on passing them, 579.

 Gale in Gulf of Mexico, indications of, 506.
 Governour Rock, off Donaghade, 62.
 Graham Shoal, Mediterranean, account 150.
 Grenadine Islands, notes on, tides, 434.
 Grey Shoal, position, 683.
 Gulf Stream, weather in, 436.

 Harrison, Capt. I., on Rio Grande, 297.
 Herradura, rock in port of, 443
 Honolulu, position of, 655.
 Hook of Margate buoy, 553.
 Horn, Cape, a winter passage round, 577
 Horn, Cape, on passing it, 580.

 Island, rocky, new one, 797.

 Jacquet Island, notice of, 366.

 Karakakooa Bay, directions for, 841.

 Laguna, Gulf of Mexico, directions for, 508.
 Lighthouse, Cowes, 835.
 Liverpool, alterations in the buoys of, 9.
 Local Attraction, in St. Lawrence, 84.
 Lombock, peak of, 219.

- Loo Choo, short visit to, 796.
 Lurcher Shoal, notice of, 439.
- Macao Roads, notice of, 795.
 Madagascar shoal, its position, 510.
 _____, description and position of, 589.
- Magdalena Island, Marquesas, notice of, 74.
- Malacca, sand bank in strait, 793.
- Manacles, buoy on, by Trinity House, 294.
- Marquesas Islands, voyage to, 73.
 _____, voyage to, from Valparaiso, 584.
- Masabello Bay, Candia, 759.
- Mexico, Gulf of, remarks on its navigation, 505.
- Midgley shoal, Atlantic ocean, 587.
- Min River, anchorage off, 795.
- Morgan Rock, Australia, 147.
- Navigators' Islands, harbour in, 119.
- Otaheit, passage to, from Owhyhee, 737.
 _____, appearance, 738, 741.
- Pacific Islands, Ascension, strong, pleasant, 514.
- Papiété Harbour, 739.
- Partridge Island, light on, 440.
- Paulo San Bay, anchorage in, 578.
- Plata River, navigation of, 222.
- Pondicherry Roads, notice of, 277.
- Port Novo Coromandel, notice of, 275.
- Pulo Varela, resources of, 794.
- Ramitara Island, position of, 738.
- Resolution Bay, Marquesas, notice of, and position, 74.
 _____, Marquesas, 584.
- Retimo, Port, 760.
- Rio Grande, bars of, changes in, 267.
- Rio Janeiro, weather at, 577.
- Rob Roy rock, China Sea, 386.
- Rock off Candia, 445.
- Royal George shoals, E. channel, 511.
- Rurutu Island, position of, 738.
- Sable Island, 445.
- Saguenay River, anchorages in, 568.
- St. Anne harbour, Curacao, directions for, 364.
- St. Catharine's Point, light on, 295.
- St. George's shoal, position of, 637.
- St. John's visited by H.M.S. Cornwallis, 440.
- St. Lawrence, remarks on its navigation by Captain Bayfield, 1, 75.
 _____, on the currents of, 75.
 _____, geographical positions in, 83, 148, 226.
- St. Thomas Harbour, Virgin Islands, 151
- Salines Point, anchorage off, 435.
- Siak, strait of, remarks on, 793.
- Sisal Bank, description and position of, 589.
- Seal Island, notice of, 439.
- Shoebury-ness buoy, 553.
- South Sea Islands, directions for, from Chili, 225.
- Standia Island, Candia, 759.
- Staten Land, its appearance, 579.
- Suda Gulf, notice of, 759.
- Suda Port, 760.
- Sumbawa Island, notice of, 219.
- Tadousac Harbour, directions for, 567.
- Thompson, Mr. Richard, Master, R.N., 580.
- Torres Strait, inner passage to, 296.
- Valparaiso, weather at, and best anchorage, 581.
- Vera Cruz, directions to vessels bound there, 505.
 _____, on mooring there, 508.
- Wareham Rocks, notice of, 73.
- White water phenomenon, 846.

LAW PROCEEDINGS.

- Alarm, wages, 570.
- Belgrave, salvage, 427.
- Carolus, collision, 65.
- Carron, salvage, 427.
- Charles Cain, manslaughter, 353.
- Claude, pilotage, 784.
- Colonist, salvage, 280.
- Columbia, salvage, 570.
- Commerciant, salvage, 64.
- Dantzic Packet, salvage, 65.
- Dredging steam, Salvage, 137.
- Flora, salvage, 137.
- Gladiator, collision, 354.
- Grainger and Bain, libel, 281.
- Helena, salvage, 137.
- Hersey, bottomry, 66.
- Hope, salvage, 280.
- Howard, salvage, 426.
- Iris, wages, 137.
- Isabella, salvage, 427.
- Isabella, collision, 643.

James, salvage, 784.
 Laing and Forster, charter, 280.
 Macdonald, wages, 642.
 Magnus, wages, 65.
 Margate steamer, salvage, 64.
 Maria, salvage, 64.
 Martha, salvage, 784.
 Meg Merrilies, salvage, 65.
 Milby, salvage, 427.
 Monarch and Apollo, collision, 784.
 Nelson Village, collision, 137.
 Nelson, lien, 642.
 Ocean, salvage, 709.
 Percy, bottomry, 137.
 Perth, steamer, collision, 279.

Providence, salvage, 427.
 Rapid, salvage, 211.
 Richmond, collision, 281.
 Spheroid, salvage, 784.
 Suffolk, refusal of duty, 66.
 Thomas Moulden, salvage, 426.
 Transit, collision, 35, 211.
 Union, salvage, 709.
 Velocipede, salvage, 427.
 Victory, collision, 65.
 Waring, &c. collision, 138.
 Whigston and Bywater, a ship, 211.
 Yeates and White, insurance, 211.

LIGHTHOUSE AND VESSELS.

Ardglass, commencement of, 549.
 Baltic, near Rugenwalde, 566.
 Bristol channel, off Minehead, 639.
 Cape Brune, Van Dieman's Land, 635.
 Cape Frio, Brazil, 53.
 Cape of Good Hope, by Argus, 416.
 ————— Grinez, 133, 365.
 ————— La Hoguc, 133.
 Cherbourg Harbour, 554.
 Demerara, by Argus, 415.
 Demerara, Light vessel at, 422.
 Elsinore, Light vessel at, 422.
 Enskar, Gulf of Bothnia, 637.
 Gibraltar, Foundation laid, 419.
 Gull stream, 53.
 Great Skerry 696.
 Hirtsholm, Cattegat, 864.
 Isle Penfret, Glenan Islands, 634.

Killibegs Harbour, 698.
 On Lakes of Canada, 696.
 Lough Larne Harbour, 864.
 Menai Strait, 295 553.
 Pembrey Harbour, 269.
 Pondicherry, 277.
 Porkala & Kanning, Gulf of Finland, 637
 Pultney Town, 696.
 Rocken end light, 132.
 St. Katherine's Point, I. Wight, 295.
 St. John's Point, 549.
 Sunderland Harbour, 131.
 Teesmouth, 131.
 Valparaiso on the Baja Rock, 649.
 Waterford Harbour, 367.

RECORDS OF WRECKS.

Ann, 429.
 Benwell, 261.
 Brandywine, 282.
 Briton, 429.
 Canton, 428.
 Ceres, 429.

Charles Potts, 428.
 Comet, 282.
 Cordelia, 283.
 Cornwallis, 66.
 Defiance, 282.
 Delight, 282.
 Douglas, 428.

Dumbarton Castle, 429.

Edgar, 428.
Elvira, 67.
Emerald, 67.

Forfarshire, 710.
Fortitude, 67.
Friends, 428.

Harmony, 138.
Hebe, 282.
Hope, 428.
Howard Castle, 711.

Indian Chief, 67.
Industry, 282.
Industry, 428.
Isabella, 67.

Jane sloop, 138.
James, 428.
John and Eliza, 429.
John Stamp, 281.

Killarney, 211.
Killigrew, 67.

Leda, 67.
Liberty, 428.
Lyra, 428.

Martha, 288.
Mary, 282.
Mary, 428.
Medora, 211.
Midas, 428.

Oak, 428.
Olive Branch, 283.
Orelia, 68.
Paragon, 429.
Providence, 428.

Rainbow, 281.
Robert, 281.
Rose, 283.

Sir F. Burton, 281.
Sir Robert Dick, 211.
Sydney Packet, 283.

Thetis, 283.
Thistle, 211.
Tiger, 67.
Townsend, 428.
Trio, 428.

Victoria, 427.

Wansbeck, 429.
William, 138.
Wolf, 282.

REFERENCE TO NOTICES OF THE DEATHS OF COMMISSIONED AND OTHER OFFICERS OF THE ROYAL NAVY.

ADMIRALS.

Daniel, W. H., 431.
Grey, Hon. Sir G., 431.
Hayes, John, C. B., 359.
Malcolm, Sir P., G. C. B., 575.
Mansel, Rt., 143.
O'Brien, R., 359.
Pearson, R. H., 143.
Quinton,—431.
Rodd, Sir T., 792.
Tobin, G. C. B., 359.
Tower, John, C. B., 71.
Winne, John, 575.
Wodehouse, R., 359.
Wolley, 143.,
Worsley, R. 359.

CAPTAINS.

Barclay, S., 359.
Davis, R. P., 143.
Douglas, Hon. G., 719.

Greenaway, John, 359.
Haynes, Henry, 359.
Jervoice, W. C., 72.
Knight, George, W. H. 2
Losack, W., 648.
Monck, Thomas 871
Norman, T., 431.
Parkinson, 359.
Paterson, W. 503.
Peyton, Sir J. P., K. C. H., 431.
Pulling, G. C. 431.
Pole, John, 871
Robinson, George, 575.
Selsey, Lord, 359.
Shepherd, Lewis, 431.
Simpson, W. 719.
Southey, 359.
Street, B. 648.
Templar, H. 432.

COMMANDERS.

Barrow, 431.
Bettesworth, George, 871
Clayton, John, 360.

INDEX TO VOL. II., ENLARGED SERIES.

Butt, Henry S., 872
 Bush, William, 872
 Crosdale, T. P., 719
 Dixon, G. F., 359.
 Edwards, John, 288.
 Good, John, 719.
 Langdon, John, 871
 Lindsay, 72.
 Mallet, W., 287.
 Notter, W., 360.
 Pryn, P., 431.
 Payne, H., 720.
 Paine, Edwards, 871
 Simmonds, J., 287.
 Southey, Thomas, 288.
 Spencer, C., 360.
 Timmins, T. S. 360
 Wing, 791.
 Wynne, P. S. 648.

LIEUTENANTS.

Arlett, W., 359.
 Barber, J., 431.
 Blair, D., 431.
 Brooking, A., 504.
 Browne, John, 288.
 Coxetter, John, 871
 Deschamps, H. P., 432.
 Dick, T. G., 575.
 Fortescue, G., 575.
 Foster, James, 431.
 Glinn, R., 503.
 Hooper, William, 287.
 Huberfield, Isaac, 360.
 Harvey, Lyne, 288.
 Kinnaird, Hon. G. H., 432.
 Lesley, W., 504.
 Mc'Ghie, James, 576.
 Millar, Adlard, 504.
 Mills, W., 216.
 Mudge, G., 648.
 Owen, E. E., 288.
 Ramsay, John, 792.
 Robinson, T., 432.
 Warren, W. S., 648.
 Welch, Arthur, 288.
 Young, Tobias, 576.

MASTERS.

Burstall, R., 648.
 Jelfer eys, N., 16.

Keith, J., 576.
 Pinnix, R., 575.
 Spencer, Ed., 720.
 Turner, R., 719.
 Weir, R., 144.

MIDSHIPMEN.

Heyman, 432.
 Innes, W. F., 575.
 Pitcairn, R., 431.

MATES.

Barrow, 720.
 Field, J. S., 575.
 Millar James, 791.
 Taplen, T. M., 576.
 Watson, 575.

SURGEONS.

Cole, 720.
 Donaldson, W., 360.
 Fisher, Alex., 72.
 Gilfillan, Alex., 359.
 Heath, John, 431.
 McKinnel, M.D. 792.
 Morgan, G. B., 288.
 Scott, James, 72.
 Stirling, John, 216.
 Tenant John, 216.
 Threshie, A. O. H., 575.
 Walker, 143.
 Weymouth, John, 359.
 White, Alex., 360.
 Williams, H., 792.

PURBERS.

Best H., 719.
 Clyde, J., 216.
 Hawker, M., 503.
 Henderson, J., 143
 Hood, W., 791.
 Marchant, J. M., 143.
 Marsden, M., 575.
 Simpson, T., 648.

ORIGINAL PAPERS AND NAVAL CHRONICLE.

- Aberdeen lights noticed, 350. }
 Accident at Plymouth, 835.
 Accidents, steam-boat, 279.
 Actæon, H.M.S. voyage of, 73, 469, 514.
 Adams, James, of Rainbow, discharged, 549.
 Address of ship-owners at Quebec, 548.
 Adelaide, Australia, arrivals at, landing of the first governor, 53.
 Adelaide, H.M.S. view of, 202.
 Adelaide, Queen, departure of, 772.
 Adele, a tale of France, 501, 569.
 Admiralty, duties of first Lord, 202.
 Allen, Capt. on local attraction, 637.
 Alacran, description of, 804.
 Alien and Quarantine laws, 797.
 Alloy of zinc and copper, 833.
 Ambuscade, H.M.S. on raising, 101.
 American expedition by Argus, 416.
 America, steam navigation, established with, 491.
 American steam boats, 536.
 Amsinck Lieut., on lights at mouth of Thames, 207.
 Anchor, plan of a jury one by Captain Milne, 344.
 Anchor proposed by Mr. Ross, 610.
 Anchor Lieut. Rogers, 638.
 Andrew White, brig case of, 777.
 Antarctic voyage, 779.
 Anti-chimera, letter of, 492
 Apollo and Waterwitch, operations on, 481.
 Appointments, 69, 141, 213, 286, 356, 429, 501, 571, 645, 717, 789.
 Archimedean steamer, launch of, 774.
 Arenas Cay, Gulf of Mexico, 723.
 Argo on H.M.P. Ranger, 270.
 Argonaut on mean level of sea, 199.
 Argonaut on sea snakes, 528.
 Arnold Lieut., by Argus, 415.
 Arnold Lieut., see Coalwhippers, 622.
 Arrowsmith's bank, position of, 366.
 Ascension, sickness at, 487.
 Ascension, command given, 549.
 Astrolabe and Zelee, voyage of, 182.
 _____, notice of, 695.
 _____, arrive at Conception, 772.
 _____, voyage of, to south pole, 779.
 _____ voyage to the south considered, 781.
 Atlantic navigation by steam, report on, 24.
 Atlantic steamers arrival at New York, 425.
 Atlantic dangers, 479.
 Australian surveys, Torres Strait, 200.
 Australia, establishment on northern shore, 487.
 Ayscough, Lieut., dismissed his ship, 550.
 Back, Capt., presented with medal of Geographical Society, 63.
 Back, Capt. Sir George, expedition of Terror, 644.
 Bain, Capt., by Argus, 414.
 Bally, coin current at, and measures, 220.
 Ballingal, Mr., tribute of respect to, 857.
 _____ testimonial to 856.
 Bankside steam-boat pier, 770.
 Barlow, W. H., on illuminating light-houses, 806.
 Barbadoes appearance of, 433.
 Barges, the reason of their sinking in river, 771.
 Barrow, Sir John, life of Howe, 139.
 Barrow, J. Visit to Geysers, 818.
 Bars of harbours, cause of, 100.
 Bars of Harbours, 97.
 Barrow, Com., by Argus, 411.
 Bate, Mr., of Pelican, heroic act of, 627.
 Bate, Capt., R.M. death of, 487.
 Bate, Mr., his ruling machine, 787.
 Bateson, Mr., by Argus, 410.
 Beagle, report on her lightning conductors, 309.
 Beagle, arrival of, in Swan River, 549.
 Beagle, H.M.S. proceedings of, 679.
 Beechey, Capt., on the Governor rock, 62.
 _____, refutation of Capt. Duperry's remarks, 237.
 Belcher, Capt., notice of, 836.
 Bennet, Mr. sermons of, 501.
 Bermuda, winter at temperature, 433.
 Biddlecombe, on the Actæon Islands, 13.
 _____ directions for south-sea Islands, 225.
 Bidford, Port of, Capt. Denham's improvement of, 499.
 Biden, Capt., return from China with petition, 488.
 Births, 71, 142, 215, 287, 358, 431, 503, 575, 645, 717, 791.
 Blossom's voyage, Duperry's remarks, 237.
 Blunt, Messrs. on American lights, 549.
 Boat on proper time to send from a ship under way, 450.
 Boulogne, port of, 145.
 Boulogne steamer discontinued, 697.
 Bowditch, Dr., by Argus, 411.
 Berwick harbour improvements, 773.
 Boyd's tar paint noticed, 353.
 Braganza brig, case of, 703.
 Brandreth, Capt., by Argus, 416.
 Brenton, Capt., life of St. Vincent, 354.
 Briscia, loss, notice of, 347.

- Briseis, by Argus, 415.
 Bristol committee, report to on navigation, 24.
 Bristol channel, changes in sands, 693.
 Britannicus on qualifications of officers of Merchant shipping, 399.
 British association, meeting of, 623.
 British Flag in India, 264.
 British gratitude, Ship, 227.
 British Queen, by Argus, 413.
 British Queen steamer, 551.
 Brongniart on vegetation, 314.
 Brooke, Mr., his intended voyage, 772.
 Brougham, Lord, on his speech on slavery, 170.
 Brown, Capt., J. H., account of shoals in China Sea, 721.
 Brown, Lieut. T., paid off, 772.
 Brown, Capt., medal presented to, 135.
 Buenos Ayres, port charges and pilot charges, 223.
 Bulow Baron, on Prussian merchant ships, 193.
- Cable, improved French, 859.
 Cærnarvon bar, light proposed for, 293.
 Cairn point light, noticed, 350.
 Caisson, Capt. Ramsay's remarks on, 266.
 Caledonian, account of her crew saved, 227.
 Camden, late packet notice of, 348.
 Camden, notice of, 627
 Canada expedition, notice of, 350.
 Candia, repairs of public works at, 760.
 Cape light, by Argus, 416.
 Cape Jetty, at by Argus, 416.
 Copper sheathing on protecting, 624.
 Capper, Colonel, on storms, 713.
 Carrick, Mr., his feeder for steam-boilers, 34.
 Carrick, Mr., on his paddle-wheel, 114.
 Carter, Lieut. T., by Argus, 410.
 Catamaran, Mr. Cunningham described 303.
 Caves of Socotra, 731.
 Chads, Capt. plate presented to, 410.
 Chagres and Panama on communication between, 834.
 Charlton, Mr. Consul at Sandwich Islands, 655.
 Charts, new of Admiralty, 284, 285, 501, Chasing, on by Lieut. Raper, R.N., 446.
 Chesney, Colonel, presented with Geographical Society, premium, 554.
 Chester, Port of Sir John Rennie, on 123.
 Chronometers rated at the Cape, 134.
 ———— rated at Madras, 278.
 ———— rates on obtaining, 374.
 ———— rates, magnetic influence on, 386.
 ———— accuracy, 402.
- Civil servants, of East India Company, 330.
- Claxton, Lieut. his account of the proceedings of the Dygden, 227.
 Clementine brig, case of, 613.
 Coal, on the qualities of different, by Mr. Laird, 28.
 Coals, expenditure of, at Atalanta, and Berenice, 93.
 Coals formation treated on, 314.
 Coalwhippers of London, case of, 622.
 Cockney aquatics, 355.
 Codrington, Sir Edward, plate to, 486.
 Coin, current at Bally, 220.
 Colliers boilers, considered, 379,
 ———— remarks on in defence, 473.
 Collingwood, intended monument to, 773.
 Columbus steamer, view of, 202.
 Commission, naval and military proceedings of, 487.
 Committee of officers, 422.
 Communication &c., 'Boats,' 450.
 Condensation, Mr. Symington's mode of 89, 638.
 Cook, Captain, Monument at Sandwich Islands, 656.
 Cooper, Lieut., case of, in wounding a waterman, 483.
 Corney, Mr., Curiosities of Literature, 787.
 Cornwallis, H.M.S., passages of, 433.
 Coromandel Coast, weather on, 289.
 Coronation of Queen Victoria, 544.
 Court Martial on Lieut. Mottley, 211.
 Cornwall Institution, lecture at, 844.
 Cowes, light at, 835.
 Cramp, Mr., Philosophy of Grammar, 786.
 Crichton, Scandinavia, 355.
 Crimps at Madras, 487.
 Cunningham, Mr., his Life-boat, 179.
 ————, Mr. his Catamaran, 303.
 Curacoa, Notes on, 363.
 Curtis, Mr. on Simplicity of Living, 284.
 Custom House Regulations, a Skipper, on, 30.
- Darling, Grace, rewarded, 772.
 David Ogilby, ship, murder of her captain, 840.
 Davy, Mr., on Cornwallis's proceedings, 433.
 Deal, Pier at, proposed, 268.
 ————, notice of, 349.
 Dean and Abbinett, their diving proceedings, 697.
 Deaths, 71, 143, 215, 287, 359, 431, 503, 575, 645, 717, 791.
 Dee River, Sir John Rennie, on, 123 249
 Demerara Light, by Argus, 415.
 Denham Capt., thanks to, for improvement of Bideford, 499.
 Denham, Capt. on the buoys of Liverpool, 9.

- Dent, Mr., on Longitude of Paris, 402.
 Discipline, mode of obtaining, 830.
 Dulce, Gulf of, notes on, 816.
 Dick, Dr., Celestial Scenery, 283.
 Dickey, Com., death of, on coast of Africa, 549.
 Discipline of Merchant Service, 668.
 Distance, money for pilots, 764.
 Downes, Com., Annular Scuppers, 62.
 Dreadnought ship, notice of, 36
 ———, by Argus, 415.
 Durham, Earl of, his landing at Quebec 546.
 D'Urville, voyage of, to South Pole, 779.
- Eastern Seas, seamen wrecked on, 59.
 Engineers Admiralty uniform regulated, 135.
 Eimeo Island, population of, 740.
 Engineers, papers on subjects connected with their duties, notice of, 569.
 Engineers, naval, Admiralty order, 611.
 English, character of, at Socotra, 608.
 Epsley, Mr., his theory, Sir John Herschel's opinion of, 784.
 Equator, on crossing, 469.
 E. S. on Provisioning Merchant Ships. 114.
 Europeans in India, observations on, 326, 392.
 Euphrates Expedition, short sketch of, 556.
 Evans, Mr., on Holyhead as a packet station, 104.
 Examination of officers of Mercantile marine, 157.
 Expedition America to Pacific, 302.
 ———, Scientific, one of U. S. 696.
- Falkland islands, visit there, 471.
 Falmouth, as a packet station noticed, 348.
 Feeders for Steam Boilers, by Mr. Carrick, 34.
 Fires in metropolis, 130.
 Fische, Mr. his well gauge, 409.
 Fisher, Mr. G. on horizontal magnetic force, 91.
 ——— on magnetic influence on chronometer rates, 386.
 Fish, during rain fall of in India, 683.
 Fitz Roy, Capt. on the Beagle's lightning conductors, 309.
 ——— river, Australia, explored, 681.
 Flag British, in India, 264.
 ——— merchant, 660.
 Floriade, notice of Galapagos, 96.
 Fog signals, Capt. Smith's, 133.
 Forbes, Mr. the American missionary, 657.
- Forfarshire, wreck of sold, 833.
 Formulæ, on use of, 716.
 Freight money, paid to Greenwich, 131.
 French laws, see French, 14.
 Fuel, compressed of Mr. Oram, 624.
 Fulton, Mr., by Argus, 412.
 Funchal, query concerning, 206.
 Fundy Bay, canal from to St. Lawrence, 775.
 Funeral obsequies, in Socotra, 731.
- Gaimard, M. his return from Spitzbergen, 773.
 Galapagos, notice of, 96.
 Galbraith, barometric tables, 355.
 Garrett, Admiral, plate presented to, 409.
 Geographical Society, medal to Capt. Back, 63.
 ———, notice of, 208.
 ———, premiums, 554.
 Geysers of Iceland, 818.
 Gibraltar, lighthouse, foundation laid, 419.
 Glamorgan lighthouse blown up, 480.
 Glamorgan and William, expense of blowing up, 628.
 Glascock, Capt., landsharks and sea-gulls, 715.
 Glow-worm steamer, launch of, 486.
 Gorgon steamer, description of, 563.
 ———, vindication of her character, 700.
 ——— passage of to Plymouth, 702.
 ——— steamer, notice of, 774.
 Granton pier, by Argus, 414.
 Graves, Lieut. T., presented with a pipe, 772.
 Great Western, notice of, 347.
 ——— by Argus, 412.
 ———, arrival at New York, 425.
 ———, 2nd departure of, 478.
 ——— voyages of, 550.
 Grant, Capt., on fish falling during rain, 683.
 Green, Lieut. P., boat of, 697.
 Greenwich Hospital, freight money received by, 131.
 ———, steam-boat docks at, 279.
 ——— docks, notice of, 348.
 Grevelink, Lieut., on Curacao, 363.
 Grenada, appearance of St. George town and bay, 435.
 Grey, Lieut., notice of, 695.
 Grinez, light noticed, 349.
 Ground tackle of ships of war, 345.
- Half-pay, origin of, 28
 Halifax Whaling Company, 487.
 Hanalac, Sandwich Islands harbour, 615.
 Harbours, on the bars of, 97.
 ——— of Refuge, Mr. Tait on, 707, 775

- Harris, Mr. on improvement of Seamen, 62.
 ——— on Lightning Conductors for Ships, 111.
 ———, on Lightning conductors for ships, in answer to Mr. Roberts, 304.
 ——— on Damage by Lightning, 590.
 ——— S., on Lightning, expense incurred by, 747.
 ——— S., lecture of, 844.
 Hastings, 74, fitting for Queen Adelaide, 549.
 Hastings, proposed Harbour at, 773.
 Hebelor, Mr., on the Mercantile Navy of Prussia, 535.
 Henvey, Com., Life buoy of, 774.
 Herschel on the longitude of Paris, 407.
 Herschel, Sir John, dinner to, 416, 485.
 ——— created a baronet, 552.
 ——— his opinion of storms, 715.
 ——— his opinion of the theory of hurricanes, 782.
 Hermione, see "Walsh," 466.
 Hiram on Collier's Boilers, 379.
 Hoe, Mr., invention of, 623.
 Holyhead Harbour as a packet station, 104.
 Hollow shot, experiments with, 847.
 Honolulu, position of, 655.
 Hoskins, Lieut., letter to, on speed of steamers, 673.
 Howard, Mr., Steamer, by Argus, 412.
 Huggins, Mr., views of, 787.
 Humane Society, medals given by, 133.
 Humanitas, on Australian surveys, 200.
 Hurricanes, observations on, by Stormy Jack, 35.
 ——— notice on, 133.
 ——— by ship, Eliza, 454.
 ——— and Typhoons, questions on, 460.
 ——— notice of, Colonel Reid's work on, 569.
 ——— Colonel Reid, on, 782.
 Hyman, Mr. of H.M.S., Wolf, killed by a snake, 529.
- Iberia, collision of, 771.
 Ice of the St. Lawrence, 3.
 Imogene, H.M.S., voyage of, 737, 651, 677.
 Impression, effects of, 662.
 Indian Navy, superintendent of, 273.
 India, on Europeans in, 326.
 ——— expense of passage to, 398.
 ——— steam to, by Cape of Good Hope, 697.
 ——— on steam to, 773.
 Inglis, Sir R. slavery, by Argus, 416.
 Ingestrie, Lord, motion in parliament on ships, 487.
 Ingestrie, Lord, his motion on naval architecture, 550.
 Investigation on the bars of harbours, 97.
 Irish miles, table for converting into English, 417.
 Iron Steam-boats, voyage of L'Egyptienne, 105.
 Iron ship, notice of first, 834.
 ——— compared with-timber, 255.
 Ivison, Mr., his patent concerning smoke, 696.
- Jones, Mr. Charles, on the French maritime laws, 14.
 Jaquet Island, notice on, 366.
 James, Mr. presented with a sextant, 410
 Jeffcott, Sir John, address of, to the grand jury, 55.
 ——— by Argus, 411.
 Jersey, oyster fishery, boundary, 549
 Johnson, William, the American brigand, 546.
- Keats, Sir Richard, anecdote of, 462.
 Kendall, Lieut., on Nova Scotia lights, 362.
 ——— method for pumping ships, 773.
 Kennish, Mr., notice of, 347.
 ——— on concentrating fire of ships, 785.
 Kerigan, navigation tables, 354.
 Keys, Lieut., medal presented, 486.
 King sound Australia, explored, 680.
- Laird, Mr., iron steam-boats constructed by him, 105.
 ——— Expedition to Niger, 212.
 ——— on slave dealing 271.
 ——— his refutation of Dr. Lardner's reasoning, 492.
 Lane, Lieut., presented with a medal, 771.
 Lang, Mr., his mode of building steamers, 257.
 ——— benefit of his keel shown, 270.
 Lardner, Dr., notice of his theories on steam navigation, 87.
 Laws maritime on the French and English, 14.
 Level mean of sea, 421
 Libraries, nautical of France, 339.
 Life boat of Mr. Cunningham, 179.
 Lifebuoy, Commander Henvey's, 774
 Life rafts in case of shipwrecks, 461.
 Lieutenants, memorial of, 858.
 Lighthouses, on the modes of illuminating them, 806
 Lightning, lecture of Mr. Harris on, 844.
 Light of steamers, 835.
 Liverpool steamer, return of, 833.
 Lights, see Hydrography, 53.

- Lights of steam-vessels, 700.
 Lighthouses, American, 696.
 Lightning conductors, Mr. Harris on, 111.
 _____, in ships considered, 185.
 _____, report on those of the Beagle, 309.
 _____, illustrations of damage in Royal Navy, 590.
 Lightning vessels, and new mode of, 624.
 Lightning, cases of, H.M. ships damaged by, 747.
 Ligou, Capt., notice of his pamphlet, 347.
 Liverpool Steam-boats to New York, 697.
 Local Attraction of the compass, great in the St. Lawrence, 3.
 _____ of H. M. S. Princess Charlotte, 52.
 _____ in Iron Steamers, 637, 835.
 Logs of Merchant Ships, 698.
 Longitude, a mode of finding at sea, 236.
 Lowestoff-ness Harbour, 98.
 Lynch, Capt., reaches Kit, 548.
 Lardner, Dr. Lecture of, 492.
- Madras, passages to, from ports of India, 292.
 _____ light, remarks on, 487.
 _____ chamber of commerce at, 548.
 _____ watering place, at 548.
 _____ improvements at, 548.
 _____ Port Charges, at, 595.
- Magnetic force, horizontal, Mr. Fisher, on, 91.
 Majesty, the Queen, portrait of, 206.
 Marquesas Islands, notice of, 73, 515.
 _____ account of islands and natives, 584.
 _____ position of, labour of missionaries at, 585.
- Marriages, 71, 142, 215, 287, 358, 431, 503, 575, 645, 717, 791, 871.
- Marine Board of Sunderland, notice of, 162.
 _____ officers, origin of half-pay to, 208.
 _____ Insurance, exemplified at Wexford, 352.
- Marine registry at Madras, revival of, 487.
 _____ board, of Sunderland, 625.
- Mariner's chart, 663.
 _____ compass, on nature of, 203.
- Matavai Bay, caution, 740.
- Mates of merchant service, Admiralty circular to, 278.
 _____ meeting of, at Portsmouth, 497.
 _____ meeting, letter on, 562.
- Mc Call, Mr. on Wexford harbour, 269.
- Mutiny, and murder at sea, 703.
- Merchant ships, on the defective construction of, 810.
- Mercantile marine, examination of officers, 157.
 Mercator, on steam navigation in India, 86.
 _____ club, 368, 659.
 Marryat, Capt. burnt in effigy,
 Martin, Capt. on wells in steam-vessels, 45.
 Massey's sounding machine, 2.
 Master of a British merchant ship, on merchant seamen's dues, 244.
 Masters, origin of half-pay to, 208.
 _____ assistant Admiralty, order on, 350.
 Massulah Boats, notice of, 836.
 Mercator, on the defective construction of Merchant ships, 810.
 _____ on steamers as sailing vessels 190.
 Meteoric shower, 862
 Merchant seamen's society, yearly receipt of, 58.
 _____ dues, 246.
 _____ dues, Bideford, 522.
 _____ shipping, on qualification of officers, 152.
 _____ shipping, Prussian examination of officers, 193.
 _____ shipping, officers, of qualifications, 399, 733.
 _____ ships, on provisioning, 114.
 _____ shipping, on cause of losses of, 153.
- Meteorological society, proceedings, 63.
 _____ registers, 72, 144, 216, 288, 360, 432, 504, 576, 648, 717, 792
 _____ society, 421.
- Meteors luminous, Cornwallis, 442.
 Meteor, H.M.S., accident to, at Hamaraza, 482.
- Middleburgh feet to English, table, 468.
- Midshipmen, Admiralty order concerning their admission to navy, 270.
 _____ passed, 351.
- Military of the East India Company, 328.
- Mills, Mr., on Symington's condensation, 235.
- Milne, Admiral Sir David, on the collision of Monarch and Apollo, 61.
 _____, Capt., his plan of a jury one, 344.
- Minerva, H.M.S., account of her capture, 370.
- Miramichi river, notice of, 134.
- Mitchell, Mr., his self-register of ship's motions, 764.
- Monoa Roa mountain, height of, 656.
- Monarch and Apollo, on the collision of, 61, 186.
- Monsoon, S. W. remarks on, off Bombay, 86.
- Moore, Mr., yacht of, fired into, 549.
 _____ his affairs with coast-guard, 667.

- Monterey, visit to, 622.
 Morrison's bequest, 480.
 Mud flats of Indian seas, 794.
 Mulgrave Port, 617.
- Napier, Lieut., by Argus, 411.
 Nautical Libraries of France, 339.
 ——— Surveys, coast of Wales, 272.
 Naval and Military Committee, 422.
 Naval Changes, 533.
 ——— discipline, Mates' meeting, 562.
 ——— Officers, charge on, vindicated by
 Mr. Wood, Admiral Adam, and Sir
 Thomas Trowbridge, 352.
 ——— School Royal, Camberwell, re-
 marks on Annual General Meetings,
 484.
 Naval matters abroad, 834.
 Navigation, School of, in Prussia, 264.
 Navy List, Officers on, since, 1816, 132.
 Navy, on Manning it, considered, 524.
 ——— proposals of United Service
 Journal considered, method proposed
 for, 766.
 Negro Slavery, 170.
 Needles Light, on its discontinuance,
 775.
 Nelson Memorial, progress of, 346.
 ——— Memorial, first meeting on, 267.
 ——— Monument, subscription for, 483.
 ——— Monument, 773.
 Newton, Sir Isaac, report of, on Dr.
 Papin's proposal for Steam Navigation,
 599.
 New York Liners, 132.
 ——— steam to, 279.
 ——— distance of, from Land's End,
 491.
 Nichol, Sir John, death of, 710.
 Nicolai first destroyed by fire, 482.
 Night Signals, by Argus, 414.
 Nootka Village, account of, 618.
 North west expedition, 350.
 Norwegian feet, reduced to English, 338.
 Norwood, Capt. medal awarded, 628.
 Noss Head beacon, noticed, 350.
 Nova Scotia lights, notice of, 362.
- Observatory, intended one at Rome, 696.
 Oliver, Capt. appointed superintendent of
 Indian Navy, 273.
 Oeno Island, notice of, 745.
 Otahiti Islands, visited, 519.
 ——— production of, 739.
 Otway, Commander R. on steam, 140.
 Oyster fishery, of Jersey, limits of, 625.
- Pacific Ocean, geographical position in,
 239.
 ——— on exploring, 300.
 ——— navigation of, 301.
 ——— American expedition to,
 302.
 Paddles, on unshipping and disconnect-
 ing, 47.
- Packets sailing of, 712, 785.
 Paington Harbour, by Argus, 414.
 Palmer, Mr., medal awarded to, 834.
 Papin, Dr., proposal for steam navi-
 gation, 598.
 Paris longitude of, by chronometers, 402.
 ——— means of finding it by
 signal, 407.
 Paris, on communication to, 833.
 Parker, J., Master of Mr. Lockerby
 letter of, 839.
 Parthenon, 501.
 Passages of New York Liners, 29.
 ——— ships in India, 292.
 Patents, new, 207.
 Paumban passage, Ceylon, 130.
 ——— state of, 274.
 Peacock, Mr., by Argus, 411.
 ——— medal awarded, 627.
 ——— on raising sunken vessels,
 776.
 Pembrey, light at, 269.
 Percussion locks in French navy, 549.
 Perry, Capt., by Argus, 412.
 Peyton, Sir John, by Argus, 410.
 Phenomenon at sea, 846.
 ——— near Equator, 824
 Philo-Nauticus, on the losses of mer-
 chant shipping, 156.
 ——— on merchant officers,
 733.
 Phoenix, Boulogne steamer, by Argus,
 414.
 ——— Carrick, 114.
 ——— on unshipping, and dis-
 connecting, 334.
 Pierson, Com. W. H., by Argus, 410.
 Pilot, H.M.S., launch of, 436.
 ——— launch and dimensions of, 550.
 Pilotage Bill considered, 543, 688.
 Pilotage Bill, a skipper in, 827.
 ——— soundings on, 761.
 Pincher, H.M.S., loss of, 273.
 ——— raising of, 481.
 Pirates, account of, various, 694.
 Pitcairn Island, notice of, 520, 742.
 ——— population of, list, 743.
 ——— position of, 745.
 Plate, presentation of, to Lieut. Tudor
 R.N., 64.
 ——— presented to Capt. Tane, 131.
 ——— presented to Capt. A. Russel,
 135.
 Plants, instructions for preserving, 164.
 Plymouth Breakwater, effects of gales
 on, 423.
 ——— Breakwater, longitude of, 610.
 Polish Feet, Table for reducing to En-
 glish, 513.
 Polytechnic Institution, notice of, 628.
 Port Charges at Madras, 595.
 Port Etches, visit to, 616.
 Port Novo, Coromandel, notice of, 275.
 Portdynllaen, report on, 860.
 Portsmouth Floating Bridge, 774.
 ——— Docks, 774.

- Prinsep, Mr., account of fish falling in rain, 686.
- Pritchard, Lieut. R., verdict of Coroner's Inquest, 4
- Mr., appointed Consul a Otaheiti, 739.
- Promotions, 69, 141, 212, 286, 356, 429, 501, 571, 645, 717, 789.
- Propeller for Steamers, 551.
- Provisioning Merchant Ships, 114.
- Prussia, School of Navigation in, 204.
- Merchant Ships, Examination of Officers, 193.
- Mercantile Navy, tonnage of, 535.
- Qualifications of officers of Merchant shipping, 399.
- Quarantine Regulations, a Skipper, on, 30.
- Quarantine laws, thoughts on, 797.
- letters on, 848.
- Quays, Public, at home and abroad, by Quid, 40.
- of the Thames, compared with others, 261.
- Quid on Timber and Iron Steamers, 255.
- Raft, Navigable, in case of Shipwreck, 266.
- Rainbow, Iron Steamer, 423.
- Marine of, discharged for firing into wherry, 549.
- Ramsay, Capt. on Steamers as sailing vessels, 47.
- Capt., remarks on his Caissoon, 266.
- Capt., on paddle-wheels, 334.
- Random Rambles, 368, 462, 659.
- Ranger Packet, notice of, 202.
- H.M.S., on shore at Falmouth, 270.
- notice of, 348.
- Raper, Lieut., R.N., on Chasing, 446.
- Rapid, loss of H.M.S., 488.
- Court Martial on, 627.
- Redfield, Mr., on speed of Steamers, 673.
- his explanation of Storms, 713.
- Refrigerating Steam Condensement, 235.
- Reid, Colonel, on Storms, 712, 713.
- Rennie, Sir John, on River Dee and Port of Chester, 123.
- Report of, on River Dee, 249.
- Rigaud, Mr., on proposals for Steam Navigation, 597.
- Rio Janeiro, Longitude of, 244.
- Riou Point of Vancouver, 617.
- River Thames, noticed, 349.
- Rivers, plan of deepening beds, 717.
- Roberts, Mr., on Lightning Conductors, 185.
- Lieut., presented with plate, 550.
- Robinsen, Lieut. R., by Argus, 410.
- Roebuck Bay, Australia, explored, 630.
- Rogers, Lieut. Small Palmed Anchor, 638.
- Rohde, Capt. on St. Thomas Har., 15.
- Roman Feet, Table for converting to English, 631.
- Rooke, Mr., Geology as a Science, 787.
- Rose Island, Vancouver omits, 615.
- Ross, Mr., his Anchor, 610.
- Royal George Yacht, report on, 483.
- Royal Navy in commission, 70, 141, 214, 286, 357, 429, 573, 717, 789.
- Royal Society, retirement of the president, 697.
- Russell, Capt. A., plate presented to, 135.
- Russell, Lord E., by Argus, 410.
- Rye steamer, notice, 349.
- Sable Island, changes in, 445.
- Sacramento river, account of, 620.
- Saddler, Mr., on raising vessels, 736.
- Sailing match between Dido and Clío, 205.
- Sailor's Asylum, proceedings at, 491.
- Shipwrecked Asylum, meeting at, 553.
- St. Ann harbour Curacoa, directions for, 364.
- St. Helena, its freedom from storms, 714.
- St. John's Point, light noticed, 350.
- New Brunswick, 440.
- St. Lawrence, on former charts of, 1.
- Remarks on its navigation, by Captain Bayfield, R.N., 1.
- Sandwich Islands, Pacific, 516.
- appearance of, 612.
- state of affairs at, 613.
- King's yacht, 614.
- Catholic religion not allowed in, 627.
- Imogene's visit to, 654.
- San Francisco Port, state of, 619.
- San Juan Baptista Island, position of, 742.
- Sapeias, Chinese value of, 220.
- Savery, Capt., proposals for steam navigation, 600.
- Scarlett, Mr., South America & Pacific, 284.
- Scotch miles, table for reducing to English, 699.
- Scuppers, Annular metal, by Com. Downes, 62.
- Sea, mean level of, 199, 421.
- Seamen wrecked in the Eastern seas, 59.
- Seamen, British at Quebec, 547.
- Seamen's Dues, appropriation of, 376.
- mutinous at Quebec, 625.
- on making, 665.

- Seaman on Asylums for, 830.
 Seringapatam, accident to pinnace, 834.
 Skipper, on Pilotage Bill, 827.
 Shambler, Lieut. receives an order, 711.
 Shepherd, Capt., Argus, 410.
 Sheringham, Lieut., R.N., on Light for Caernarvon, 293.
 Ship, movements of registered, 764
 Ship Owners and Shipwrecks, 401
 Sheringham Lieut., report on Porth-dynllaen, 866.
 Shipwrecks, to prevent, 401.
 Sierra Leone, W. R., on, 122.
 ——— Huggins, picture of, 133, 766.
 Signals, Rhode's universal, 133.
 ——— general, Com. E. Smith's, 135.
 Simmons, Capt., on heavy ordnance, 786.
 Sirius, arrival of, at New York, 425.
 ——— voyage of, to New York and return, 489.
 ——— runs to St. Petersburg, 624.
 Sitka, visit of Sulphur at, account of, 617.
 Skipper, on manning the navy, 524.
 Slave vessels, proceedings of, 171.
 ——— dealing, Mr. Laird on, 271.
 ——— vessels captured in 1836-735.
 ——— bounty on, 489.
 Smith, Lieut. Governor of Falkland Islands, 472.
 Smith, Mr., medal awarded to 834.
 Smoke, Mr. Ivison's patent, 696.
 Snakes, escape from one in Socotra, 609.
 ——— poisons of, antidote for, 528.
 ——— Sea, considerations of, 528.
 Societies, by Argus, 415.
 Socotra, Rambles among mountains of, 603.
 ——— weather at, 727.
 ——— temperature of, 732.
 ——— a ramble in, 725.
 Soult, Marshal, his reception in London, 545.
 ——— Anecdote of, 546.
 ——— departure of, 623.
 South, Sir James, discovers Euke's Comet, 699.
 Soundings on lighting Steam-v., 700:
 South Australian Settlements, 53.
 Speed, greatest on record, 64.
 ——— of Steamers on Thames, 770.
 Spey Packet, encounters a Hurricane, 35.
 Standard Royal, to denote presence of the Queen, 502.
 Stark, Lieut. R., plate presented, 486.
 ——— rewarded, 771.
 Steam-boat Companies injured by want of Quays, 41.
 Steam-boats of Iron, constructed by Mr. Laird, 105.
 Steam-boat Accidents, 163.
 Steam-boats of America, dimen 353
 ——— on speed of, 538.
 ——— American, dimensions of, 621.
 ——— law concerning, 677.
 Steamers as Sailing Vessels, by Com. Ramsay, 47.
 ——— as Sailing Vessels, 190.
 Steamer, Sir Robert Peel, burnt in Canada.
 Steam-boilers, American Government on, 626.
 ——— Apparatus, for cleaning, 627.
 Steamships, cost of, 843.
 Steam-vessels, on inspection of, 833.
 Sulphur, H.M.S., proceedings of, 83.
 Steam Intercourse with India, 50.
 ——— Navigation, Report to Bristol Committee, on, 24.
 ——— on the Parliamentary Report, 85.
 ——— early proposals for, 597
 ——— Spanish claims to 602
 Steam vessels, Langs mode of, 267.
 ——— large, on substitute for sailing vessels, 533.
 ——— French, remarks on, 545.
 ——— new mast for, 624.
 ——— deficiency of laws relating, 771.
 Steering of steamers, 348.
 Stevenson, Mr., on mean level of sea, 421.
 Stewart, Capt., an harbour in Tootooilla Island, 119.
 Stock, Capt., presented with medal, 550.
 Stokes, Lieut., R.N. on longitude of Breakwater, 610.
 Stopford Sir Robert, at Toulon, 546.
 Storms, Colonel Reid on, 712.
 Submarine Volcanoes, 361.
 Sugar, cultivation of at Otaheiti, 739.
 Sulphur, H.M.S., proceedings of, 611.
 Sun, spots on their character, 715.
 Sunderland harbour light, 131.
 Sunken vessels, on raising, 101.
 ——— on raising, by Mr. Peacock, 776.
 Symington Mr., his condensation, 89.
 ——— steam condensation 235.
 ——— condensation, 638.
 Tahiti, port regulations at, 418.
 ——— See Otaheiti, 519.
 Tait, Mr. on harbours of refuge, 707.
 ——— on deepening beds of rivers 717.
 Taylor, Captain, on waves, 627.
 ——— his plan for propelling steamers, 696.
 Table for reducing Norwegian feet to English, 338.
 ——— Irish miles to English, 417.
 ——— Middleburgh feet to English 468.
 ——— Polish feet to English, 631.
 ——— Scotch miles to English, 699

- Table for reducing Roman feet to English, 631
 ——— Vienna feet to English, 788.
 ——— Carlsrona feet to English, 858.
 Temperance Societies, noticed, 462.
 Temperature, observations on, 132.
 Termagant, by Argus, 415.
 Terpsichore, French frigate, notice of, 202.
 Thames Haven, notice of, 349.
 ——— docks, 414.
 ——— Lights at mouth of, 207.
 ——— River and port of London, 260.
 Thompson, Mr. R. on river Plate 222.
 Tides, brief theory of, 632.
 Timber ships, causes of their destruction, 233.
 ——— and iron steamers compared, 215.
 Time at sea, on finding, 121, 236.
 Tinklar, Capt. R.M. appointed to Ascension, 549.
 Tonkin, Mr. on finding time at sea, 121.
 Tootooilla island Harbour, 119.
 Topography, see Bate. 787.
 Towing ship on the best means of, 323.
 Trinity, House, Deptford, history of, 388.
 ——— dinner, 415.
 Trinity House dues, return ordered, 488.
 Tubal Cain on coals, of Atalanta and Berenice, 93.
 Tudor, Lieut. R.N. presentation of plate to, 64.
 Tune, Cadr. plate to, 131.
 Tassaud, memoirs of, 500.
 Ure, do. Dictionary, 716.
 Osborne, Mr. accident to, 679.
 Valparaiso, longitude of, 243.
 ——— remarks on, 472.
 Vancouver, Capt. inscription of, 616.
 Variation in the St. Lawrence, 2.
 Vegetation nature of on surface of the earth at various periods. 314.
 Victoria steamer, accident to, 279.
 ——— bursting of boiler, 411.
 ——— on request, 551.
 ——— verdict of Jury on, 626.
 Volcanoes submartne, 361.
 Voador steamer, 561, 612.
 Walker, Mr. on towing ships, 323.
 Walsh Patrick the mutineer, account of, 466.
 Waterman's act, report on, 832 .
 Waterlogged ships, and British gratitude, 227.
 Waterspouts, their connexion with storms, 714.
 Weather, flags at ports proposed, 153.
 ——— on Coromandel coast, 289.
 Wellguage for ships by Mr. Fische, 409.
 Wells, in steam-vessels, by Captain Martin, 45.
 Wellstead, Lieut. J., on Socotra, 603.
 ——— account of Socotra, 725.
 Wexford Harbour, improvement of, 269, 274.
 Weymouth Harbour, by Argus, 414.
 Whalers, notice to, 206.
 Wharfs of the Thames, insufficiency of, 261.
 Whewell, Professor, lecture on tides 632.
 Whidbey, Mr., on raising H.M.S. Ambuscade, 101.
 Wickam, Capt., notice of, 695.
 William, brig, blown up, 480.
 ——— See Glamorgan, 628.
 Wilmot, Mr. A. E., account of Actæo's voyage, 469.
 Wolf, H.M.S., departure of from Calcutta, 269.
 Worthington, Lieut., on Dover Harbour, 716.
 Wrecks of British shipping tables of, 68, 213, 356, 283, 571.
 Wyre Harbour, notice of, 135.
 Yacht Club, northern, picture of, 135.
 Yarmouth channel, changes in sand, 693.

ERRATA.

- Page 137, line 14, for "Steltin," read "Stettin."
... .. line 24, for "Smack," read "Smacks."
... .. line 27, for "1,644," read "£1644."
... 138, line 22, and 11 from bottom, for "Tabius," read "Fabius."
... 139, line 26, for "Zabius," read "Fabius."
... 209, line 5, and 15, for "and," read "in."
... 211, line 39, for "Harborough," read "Hasborough."
... .. line 9 from bottom, dele "about 8, P.M."
... 209, line 31, for "him oppose," read "him to oppose."
... .. line 34, for "of be," read "be of."
... 208, line 30 from bottom, for "or," read "of."
... 212, line 3 from bottom, for "between it, its confluence," read "between it,
and its confluence."
Page 213, — in table of wrecks, against "Killarney," for "(3)," read "St. V."
... 214, lines 2, and 4, and 7 from bottom, for "Karbey," read "Karley."
... .. line 9, for "Moonsteven," read "Mountseven."
... .. line 18 from bottom, for "whiak," read "which."
... .. line 26, for "Fring," read "Tring."
... 95, line 7, for " $46.3 \times 7 \times 200.2$," read " $2,463 \times 7 \times 200.2$," not as
33,000. 33,000.
stated in last Errata.
... 218, line bottom, for "stait," read "strait."
... 225, line 11, for "them," read "to make them."

