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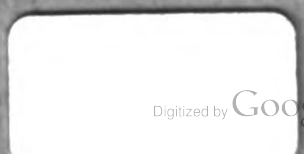


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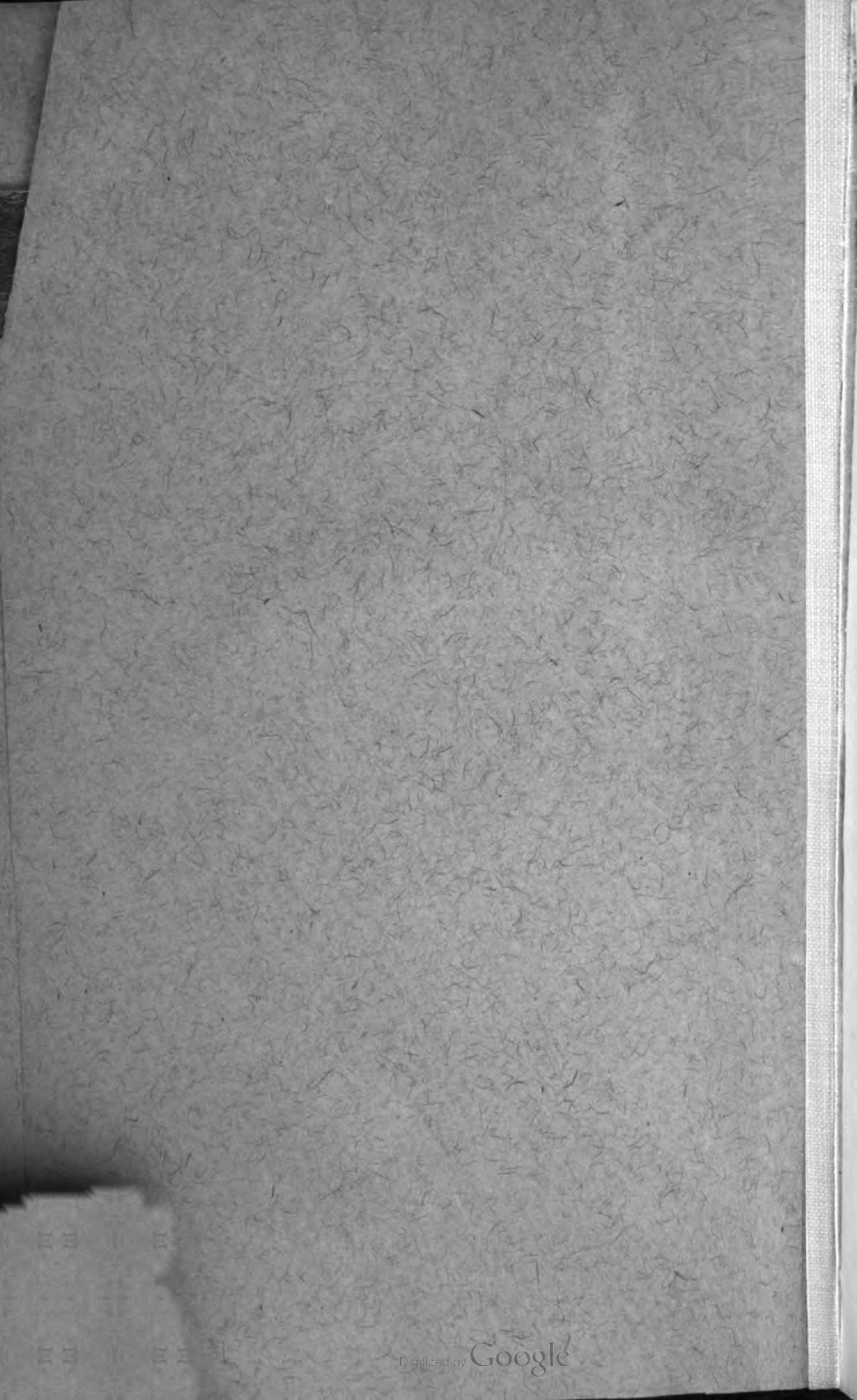
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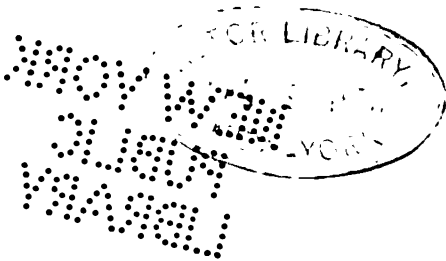
Volume

Nº 1.



JOURNAL OF PAPERS

IN GENERAL



THE
NAUTICAL MAGAZINE,
&c.

MARCH, 1832.

ADDRESS TO THE PUBLIC.

WHEN so many valuable Periodicals are floating about on the ocean of public favour, it may appear a bold enterprise to launch another among them; but the Proprietors of the NAUTICAL MAGAZINE believe, that they have marked out a course for their work that has been too long neglected by all, and therefore, that the cruising ground which they have selected will be distinct from that of every other.

The principal feature of the work will consist of the particulars of those hidden maritime dangers which are too often fatal to ships. As its name implies, the contents of the NAUTICAL MAGAZINE will treat on subjects relating to the sea; and the safety of seamen will naturally become its first care. Much information, of a nature highly valuable to mariners, is scattered about, destitute of any systematic arrangement by which it can be made available to them; but the pages of the NAUTICAL MAGAZINE will hereafter become the receptacle, in which it will be preserved for their reference.

The mere detail of rocks and shoals is not, however, generally interesting, and of this the Editor of the work will be found not to have been unmindful; therefore, in order to render the NAUTICAL MAGAZINE suitable to all classes of readers, and to raise it to that station in the opinion of the Public, which the Proprietors hope to find it assume, a department has been introduced into it, for the reviews of all interesting voyages, besides original sketches, the general character of which, they venture to believe, will be found entertaining.

In addition to these, the last department of the work will be a repository of varied and useful intelligence, of a nature calculated to interest most classes of society. With this view, the Proprietors of the NAUTICAL MAGAZINE submit their Prospectus, accompanied by the first result of their labours, to the clear and discerning judgment of the Public, satisfied that, at their hands, useful industry will meet with its just reward.

Prospectus.

The contents of the NAUTICAL MAGAZINE will be arranged under the following heads:—

I. HYDROGRAPHY.—This important and comprehensive subject will form the principal feature of the work, and will include the particulars of all MARITIME DISCOVERIES, whether Islands, Harbours, Rocks, or Shoals, with their positions, and the authorities on which they depend; together with statements of changes in light-houses, in the positions of buoys, and in the condition of channels, as they occur; with accounts of harbours recently constructed at home or abroad, and directions for entering them, besides notices relating to the tides, the variation of the compass, and indeed every particular which concerns the safety of a ship.

In this department of the work, the various supposed positions of reported dangers will be stated, with the view of attracting the attention of Seamen to substantiate or refute them.

II. VOYAGES.—The second department of the work will contain reviews of interesting voyages performed by foreigners, as well as by our own countrymen. From this source much information will become accessible to many readers, from whom it has hitherto been excluded by the high prices of the works in which it is to be found. Original sketches of this nature will also occasionally appear; and thus, it is hoped that the NAUTICAL MAGAZINE will assume an entertaining, as well as an instructive, character.

III.—NAVIGATION.—The third division of the work will be devoted to critical notices of all publications directly appertaining to navigation; especially of new charts, plans, and sailing directions. A copious Index of these publications will be given at the end of each volume, forming, in the course of time, an extensive list of all such as are interesting to the navigator.

This department will also include notices of all improvements in nautical instruments, as well as of any new invention important to navigation.

IV. NAUTICAL MISCELLANY.—The fourth department will contain statements of the arrival and sailing of ships in all parts of the world, according to the latest intelligence; accounts of wrecks, and information relating to shipping in general; notices of all intended or newly-established communications by steam-boats, the time of the departure of the foreign mails, and other intelligence of a miscellaneous and useful description.

The great object of the NAUTICAL MAGAZINE is the advancement of Hydrography by the diffusion of useful information, and on this ground the Proprietors of the work respectfully solicit communications on the subject, however trifling, from the numerous intelligent seamen of the royal and mercantile Navy of Great Britain. The Proprietors feel assured that MARINERS will derive incalculable benefit from the publication of the discovery of new dangers, as they are inserted in the *Admiralty Charts*, as also of similar information received at Lloyd's, all of which will be communicated to one of them, who is the agent for the sale of the above Charts; and they believe, that by these means the NAUTICAL MAGAZINE will not only be found useful to the seaman, but of great interest to all connected with him in this or in any other country.

The NAUTICAL MAGAZINE will be published in Monthly Numbers, at the price of One Shilling. This arrangement will enable the Proprietors to give early publication to communications, addressed to Mr. BATE, No. 21, Poultry, London

INTRODUCTION.

THE art of Navigation, like many others, has, in its infancy, been nothing more than the crude result of practical combinations—of experience, which has taught the advantages or inutility of various contrivances—of the knowledge of seafaring, and the constant observation of scientific, men—of the activity and energy of those passions which incite to the performance of great undertakings—and of casualty, which full often lays open to the consideration of man, things which had been concealed in obscurity. All these causes combined, have amplified and converted navigation into one vast science, the very essence of which is philosophy, and which, in its most comprehensive form, embraces the sciences of Meteorology, Astronomy, Geography, and Hydrography. Such is the energetic and concise definition which a modern author* has given of Navigation.

From the earliest stage of this art, its progress, and enlargement by Mathematics, Astronomy, Optics, and Physics, we might be induced to look with indifference on the works of its first authors, and to consider them as rude and uninformed, if reason and justice did not convince us, that the whole magnificent fabric of navigation, which in the present day fills us with surprise, and commands our veneration, is founded upon them; and that, considering the state of science during the sixteenth century, the authors who first reduced this art to one concise system, have more claims on our admiration than all the improvements which it has received in the present day, from the application of new theories and sublime mathematical truths.

The origin of Navigation, like that of other arts, is involved in the fabulous history of early times; but, according to the accounts of the most ancient historians, it was in the Mediterranean and Arabian Gulf that the first attempts were made in the art, and where commerce assumed an active character in the intercourse between the Egyptians and Phenicians. The former, who lived in a fertile land and a genial climate, which rendered them independent of the productions of other countries, devoted themselves to the cultivation of the sciences rather than to that of commerce, and, imbued with gross superstition, applied only a portion of their knowledge of astronomy to Navigation. But the Phenicians, whose country was unequalled in its beauty, less superstitious, and of a more active and commercial disposition, boldly extended their voyages, and established their colonies nearly in every country that was known. They improved the construction of their vessels, they forwarded navigation as much as the period

* M. Tomas. Elogio de Duguay Trovin.

admitted, and they became the teachers of this art to all nations, particularly to the Gaditanos (inhabitants of Cadiz) and the Greeks. The Carthaginians and Romans succeeded them; but although each in their turn improved their ships, the knowledge of Geography and Navigation, limited to the mere performance of short voyages, would have remained in its infancy, had not the progress of mathematics, and particularly that of astronomy, in modern ages, roused it from its lethargic condition.

Navigation at that period consisted only in the knowledge of coasts, and in making short voyages from one place to another, without losing sight of the land; and when by any unforeseen accident this became invisible, the motions of circumpolar stars, and the flight of birds,* naturally directed towards the shore, served as guides to the bewildered mariner. The configuration of coasts, and their mountains and principal headlands, with the use of the lead, formed another species of knowledge, for which the mariner was indebted to his experience in Navigation.

Until the properties of the magnet were discovered, followed by the invention of the compass, the progress of Navigation could not be otherwise than slow; and therefore, from this important period, which was about the end of the thirteenth century, the real advancement of this art towards perfection can only be dated. The valuable invention of the compass is equally involved in mystery, and its real discoverer is unknown. Lafiteau, in his history of the Portuguese discovery in the New World, says, that Vasco di Gama brought it to Lisbon from the coast of Africa, on his return from Melinda, where the Arabs then used it, and he believed the Portuguese to have been until then ignorant of it. Some attribute it to Flavio Gioja, of Amalphi, about the year 1302; while others again are of opinion, that the invention is due to the Chinese, and that one of their emperors, a celebrated astrologer, was acquainted with it 1120 years before the Christian era;† nor have others again been wanting, who have supported the opinion, that it was known in the time of Solomon.‡ The ancient Greeks and Romans are also supposed by some, to have used it, but the silence of Pliny on this subject, says Señor Navarete, “renders this doubtful.”

In the midst of so many opinions respecting the actual inventor of the compass, it may safely be considered to have been in general use among navigators about the middle of the thirteenth century, as the laws, called *Las Leyes de Partidas*, that were in force at that period, prove it, in the following words: “Es bien, asi como los marineros se guian en la noche obscura por el aguja, que les es medianera entre la piedra y la estrella, y les muestra por

* Cladera. Investigaciones historicas, sobre los principales descubrimientos de los Espanoles, p. 5. note 1. A native of Majorca: he died in 1814.

† Hutton's Philosophical and Mathematical Dictionary.

‡ Bochart, book I. Chanaam, chap. 38, refutes Fuller, who maintains this opinion.

do vayan, tambien en los malos tiempos como en los buenos," &c. : which translated is, "Likewise, as mariners steer in dark nights by means of the compass, which to them is the safeguard between the rocks and the stars, and shews them how to steer equally in bad weather as in fine," &c. Although the use of the compass was known in the thirteenth century, James de Vitry, who wrote in the commencement of that century, says, that it was common in France, and consequently throughout the Mediterranean, but that it was not used on the ocean until the fifteenth century. In Spain it was known in the commencement of the fourteenth century, according to a nautical inventory, preserved in the archives of Barcelona. "I have seen it painted," says Cladera,* "on a sea-chart, dated in the commencement of the fifteenth century, and on another, in the reign of Ferdinand and Isabella."

"But little avail would it be to the mariner," says Señor Salazar,† "to know the course which his vessel may make with respect to the sphere, or the means of measuring the distance she might sail, unless he possessed some method of referring or comparing his situation with reference to the various parts of the earth's surface, when alone and forsaken in the vast watery desert, where the eye can discover only sea and sky." In this condition, Astronomy is ready to assist him, and to afford him the means by which his latitude and longitude may be ascertained, and with these data he finds out the position he occupies on the globe. But even this is insufficient to enable him to shape his course in his lonely situation, surrounded on all sides by the element alone in which his vessel moves, nor can he yet direct her to the port he is seeking, or avoid the dangers he may meet in his way. The mariner, unless he knows the relative situation of the place to which he would go, must still be at a loss what to do; and to ascertain this, he must be informed of the contour and direction of coasts, their respective positions, the motions of the tides and currents, the gulfs, and depths of the sea, as well as the innumerable rocks with which it is scattered. Such are the important objects which constitute Hydrography; all of which, for the benefit of his safety and convenience, it affords him, in maritime charts.

The exact epoch is not known, within any probable degree of certainty, when seamen first made use of maritime charts, the ingenious invention and valuable guides with which Geography has furnished Navigation, and which, being gradually improved, have now arrived at that state of perfection which enables the navigator to traverse the ocean with the same confidence that a traveller would perform his journey across a country. According to Señor Capmani, in the second of his *Questiones Criticas*,

* Investigaciones historicas sobre los principales descubrimientos de los Espanoles en el mar oceano.

† Discurso sobre los progresos y estado actual de la Hydrografia en Espana, 1809.

it was generally known, that in the year 1286, in which Raymond Lulio wrote his work entitled, *Fenix de las Maravillas del Orbe*, that these charts were used by the Spaniards. This author says, that the navigators of that period had *instrument, chart, compasses, and compass, &c.*; and this perhaps, is the most ancient date that can be cited respecting the use of maritime charts. He also relates, that the galleys of Arragon used them in the year 1359; for in the naval instructions of that period it is directed, that every galley shall have on board charts for navigating thereby. In the archives of the *Maestre Racional*, of Catalonia, in a book containing the accounts of the treasurer of king James the Second of Spain, dated in 1323, there is an outlay of twenty-five Barcelona *sueudos*, the value of which is one hundred and sixty *reals*, or about thirty-four shillings, for the purchase of a book of Navigation, which Señor Capmani concludes, on very reasonable grounds, to have been no other than a collection of maritime charts.

The celebrated Prince Henry of Portugal, seeing the importance of advancing this branch of navigation, in the year 1417, founded an academy for pilots and mathematicians at Sagres, and established as the president of it, *Maestro Jayme*, an experienced pilot of Majorca, one who was well acquainted with such matters. This person instructed young Portuguese officers in the use of the astrolabe, and the method of finding the latitude by means of the sun's altitude, having previously constructed tables of declination. The use of the astrolabe succeeded that of the *ballestilla*, or *astronomical radius*, which was common among the navigators of the sixteenth century, as well as plain charts, which were used in the Mediterranean. Alonzo de Santa Cruz saw the errors which prevailed in the construction of these charts, when he was teacher of cosmography to the Emperor Charles the Fifth of Spain; and by the request of his master, in 1545, constructed one in which they were corrected.

Hutton, in his *Mathematical Dictionary*, says, that Ptolemy was the first to whom the idea occurred of varying the proportion of the degrees of latitude, and that Gerard Mercator, in 1556, published charts on the principle of those which now bear his name; but that Edward Wright was the first who conceived the true principles of constructing these charts, in 1599, and that Mr. Blundeville published an account of Wright's in 1594.

“Such was the state of navigation at the end of the fifteenth century,” says Señor Navarete, “when Columbus, well versed in the mathematical and astronomical knowledge of his day, and endowed with an extraordinary degree of intrepidity, boldly ventured across the ocean, traversed unknown seas, and, by discovering new countries, produced a total change in politics and science. In his first celebrated voyage, he discovered the variation of the needle, a phenomenon which, to his companions, appeared so wonderful, that, fearful of its losing altogether the virtue of pointing to the north,

they imagined they must become victims to the ambition of this great man. The discovery of this phenomenon, which was then made, has been erroneously attributed to Sebastian Cabot; but the magnetic variation has been turned to account in navigation, and various theories on the cause of it have been advanced. On the subject of its discovery, Hutton says, in his *Mathematical Dictionary*, vol. ii. p. 550, 'For it seems there is in the library of the University of Leyden, a small manuscript tract on the magnet, in Latin, written by one Peter Adsiger, bearing date the 8th of August, 1269, in which the declination of the needle is particularly mentioned. Mr. Cavallo printed the chief part of this letter in the Supplement to his *Treatise on Magnetism*, with a translation; and it is to be wished he had printed the whole of so curious a paper,' &c.

The establishment of the *Casa de la Contratacion* in Seville, in 1503, Navarete tells us, and the opulence which that city gained from the intercourse of its people with the New World, gave rise to the pursuit of mathematics and navigation there, to a degree that till then was unknown. The Emperor Charles the Fifth established colleges in this city, wherein Sebastian Cabot taught these sciences. The result was, that a multitude of books on navigation were published, a list of which, with their various purposes, may be found in Navarete's historical work. Stimulants such as these, and their results, are alike in all countries, where they are protected by those in authority, and where the interest arising from them is properly divided.

But the safety of the navigator was yet imperfect, and a method was still wanted by which he might find his longitude at sea, and which, although it might not arrive at that degree of precision by which the latitude could be found, should at least afford an approximation to it. For this purpose, various methods were proposed, all grossly defective, until astronomy again came to the aid of navigation.

Hipparchus, the inventor of the use of longitude in charts, was acquainted with no other method of finding it, than by eclipses of the moon. Kepler added those of the sun, at the expense of a vast deal of calculation; but each requiring that the observer should remain stationary, their methods were of no service to the navigator. The first person to whom it occurred to find the longitude by means of lunar distances, was Pedro Apiano, in the year 1510; but his method was neglected, because it was deficient of the necessary corrections for parallax and refraction, in consequence of which it gave results that were even more erroneous than those obtained only from estimation. His cotemporary, Reynero Gemma, adopted the same method, but fell into similar errors.

To remove these difficulties, Philip the Third, in 1598, was the first to offer a considerable reward to the person who should discover a method of finding the longitude at sea, that would not only serve to determine the situation of the ship, but would also improve the state of the charts. The Dutch Government next

followed this example, and in 1714 the British Government voted £2000 to perform experiments, and a reward of £10,000 to the person who should find a method of ascertaining it within one degree of the truth; also £15,000 if it should come within two-thirds of it, and £20,000 should it come within half a degree; but if the method employed was that of the distance between the moon and sun, or stars, £5000 was offered to bring it within fifteen minutes of error in the distance, which is equal to seven minutes of longitude.*

With these encouragements, men of science applied themselves to gain the promised reward in Spain, France, and in England, as well as in other parts of the world. They invented various instruments and methods; but the results obtained did not fall within the proposed limits.

The application of Jupiter's satellites by Galileo, previous to this, for determining the longitude, was more effectual; but these observations, so valuable for places on land, were unavailable at sea.

The Spanish pilot, Andres de San Martin, in the voyage which he made with Magalhaens, had already employed the method with which Ruy Fallero† had supplied him, of determining the longitude by lunar distances; but the results he obtained, not being, as he considered, correct, with much discernment he attributed it to errors in the tables of the sun given in the almanack, satisfying himself, that while they remained so, the problem would never be determined. At the end of this century, Pedro Sarmiento de Gamboa, one of the most expert navigators of his day, obtained the longitude at sea by the lunar distances, which he measured with an instrument of his own making; and his results were so good, that he was enabled to correct the reckoning of his ship, which he ascertained amounted to 220 leagues of error.‡ But his invention was lost, as he did not make it known.

Gemma Frisius is the first who mentions the use of time-keepers; and, in 1665, the first experiment was made in a voyage to the coast of Guinea, by Major Holmes, with a watch made by Huygens. With this, the longitude of the island of Fogo was obtained with tolerable precision. Sully followed up the art, and, in 1714, published a work on finding the longitude at sea by means of chronometers, and continued his studies at Paris. Julian de Roy was his scholar; and the son of this latter, and M. Berthoud, carried on the subject with more success than had hitherto been known.

In 1726, Mr. Harrison produced a chronometer, the error of which did not amount to one second in the space of ten years. In 1736, it was sent to Lisbon, and corrected the reckoning on the voyage as much as a degree and a half. Thus encouraged, he made successively three watches, which were completed in the years 1739, 58, and 61; the last being so excellent, that the Govern-

* Hutton.

† Herrera. *Decadas de Indias*.

‡ Sarmiento. *Viage al Magallanes*, 1579, y 80.

ment offered to send it on a voyage to the West Indies. The island of Jamaica was fixed on, and his son embarked in 1761 with the chronometer; and, on his arrival, the longitude shown by it did not differ from that obtained by astronomical observation more than a minute and a quarter.* Among those who have done most towards bringing these machines to perfection, are Kendal, the next to him is Arnold, whose modern improvements have been justly the theme of admiration; and Mudge, Earnshaw, and others, have each operated with success.

It is said that the first person, who recommended the method of finding the longitude by the lunar distances of the stars, was John Werner, of Nuremberg, who printed his first work on the Geography of Ptolemy, in 1514. But the invention of the quadrant by Hadley, and the corrections which the tables of the stars had received from Mayer, of Gottingen, brought it to that state, which it had been the object of centuries to attain. The astronomers of Europe continued their improvements of the tables of the sun, moon, and Jupiter's satellites, as well as the position of the stars, which they have at length brought to the high degree of perfection in which they now are. With the assistance of these, the navigator crosses the ocean, and reaches his destined port with nearly as much certainty as the traveller on land, differing only from him in expedition.

With the progress of these auxiliaries, Hydrography continued improving, but not to that extent that it should have done. This delay arose from a fear of spreading the knowledge of coasts, the surveys of which were preserved in manuscript. Charts were printed of every known coast, as matter of speculation, with different dates, copied from each other, excepting a few alterations here and there, that were sometimes fatal; till, at length, the various maritime states of Europe, finding where their real interest lay, and aware of the benefit that would result to humanity, in perfecting Hydrography, despatched expeditions with this object, and established depots, where the results of their operations might be analyzed; and thus has Hydrography arrived at a state of perfection, which it could not possibly have attained but by such means. Much, however, yet remains to be done; but the interest is so general, and more particularly in this country, that we venture to hope for its completion. To effect so desirable a purpose, we contribute our humble endeavours, satisfied, that if the zeal be continued with which other countries, as well as this, have of late years followed up this important subject, we shall soon see completed, that great object, which it has been the constant solicitude in former ages to accomplish.

* Hutton.

[The above Introduction for this work, is translated from the Spanish MS. of Don Felipe Beaza, late Hydrographer at Madrid, Foreign Member of the Royal and Geographical Societies, and Associate of the Astronomical Society of London.]

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

1. THE VIRGIN ROCKS, *Bank of Newfoundland.* LATITUDE
 46° 26' 15" N. LONGITUDE 50° 56' 35" W. *Soundings*
 4½ *fathoms.*

THAT the situation of these rocks should have remained uncertain, and even that their existence should have been doubted, to a very recent period, affords an instance of one among the many difficulties with which hydrographers have to contend in the construction of charts. Although repeatedly sought for, they were known only to a few fishermen, who frequent the Banks of Newfoundland, until the enlightened views of Vice-Admiral Sir Charles Ogle, Bart., for the safety of our North American traders, led to their complete discovery. To the laudable exertions of this officer, while commander-in-chief on the North American station, navigators are indebted for ascertaining their correct position, besides various other important and valuable observations on that coast. In the month of July, 1829, the Inspector, tender, under the charge of Mr. Edward Rose, Master in the Navy, accompanied by His Majesty's Sloop Manly, Lieut. (now Comd.) Bishop, were sent by Sir Charles Ogle, to look for and determine the position of these rocks.

His Majesty's Sloop Inspector was anchored about one hundred fathoms to the north-east of the shoalest part of the rocks, in the above position. The observations were made with a circle by Worthington and Allen, and two chronometers, the latter with a rate six days old from Halifax. Their meridian distance from Halifax was found to be 12° 42' 6" E. and the longitude of the rocks depends on Halifax dock-yard, which is supposed to be in 63° 38' 41" W. of Greenwich. The Inspector lay at anchor forty-eight hours, during which time the above result was obtained from a series of observations with a well-defined horizon and favourable weather.

Mr. Rose describes the rocks as extending in an irregular chain, or cluster, 800 yards in the direction of N. E. by E. and S. W. by W., their breadth varying from 200 to 300 yards. They were distinctly seen under water, particularly a large white mass of rock, in 4½ fathoms, having 5 and 6½ fathoms round it. The shoal was traced in 7 fathoms, on detached rocks, near the edge of it, having

deeper water between them. On the southern edge of the shoal, from S. E. to W., the depth increases gradually to 30 fathoms, at the distance of half a mile from the shoalest part. The same depth was found to the N. W. and N. E. of the shoal, at the distance of one-third of a mile, and also between N. E. and S. E. at the distance of one mile.

The bank on which the Virgin Rocks are situated, was found, by Mr. Rose, to extend four miles and a quarter, in an E. by S. and W. by N. direction, and two miles and three-quarters in its broadest part, the depth being regular from 28 to 30 fathoms. Beyond these limits, the depth increased suddenly to 39 and 43 fathoms. The current was found setting to W. S. W. at the rate of one mile per hour over the shoal, with a confused cross-swell.

The Manly, whilst at anchor on the bank, was obliged to strike her top-gallant masts; and the swell was so considerable, that the vessel rolled the muzzles of her guns under water. The Manly remained at anchor one night, and, on getting under way in the morning, the chain cable broke in the middle, owing, it was supposed, to the violent friction which it had undergone against the rocks. In an easterly gale, which would be attended with the whole swell of the Atlantic ocean, no vessel could pass over these rocks. They lie in the direct track to Cape Race, Newfoundland, the point which vessels, bound to Quebec, generally endeavour to make.

The following accounts of the VIRGIN ROCKS, previous to their discovery by Sir Charles Ogle, afford some further particulars relating to them:—

By Captain Cummings.

"Lat. $46^{\circ} 27'$ N. lon. $51^{\circ} 8'$ W. Soundings were had in 23 fathoms, one mile to the northward. Captain Cummings states these rocks to be of a triangular shape: breakers very heavy. The bearings from Cape Broyle S. E. $\frac{1}{2}$ S. 80 miles."

By Captain Kemp.

"Lat. $46^{\circ} 30'$ N. lon. $50^{\circ} 51'$ W. Cape Broyle, S. E. $\frac{1}{2}$ S. 84 miles."

By Mr. Moore, of Ferryland.

"Mr. Moore has frequently been on the shoals, and had vessels fishing on them. E. S. E. from Cape Race, by compass, are the Virgin Rocks, near and around which you will have 40 fathoms. Immediately on them he has, in his long-boat, held one end of the kelp in his hand, while the other end was fast on the ground, in about $2\frac{1}{2}$ or 3 fathoms water. From Ferryland Head the course is S. E. by E. by compass, 75 or 80 miles: E. S. E. by compass, distant 3 or 4 leagues from them, are the Scotch rocks. This information, I trust, will enable you to ascertain their particular situation; a thing which, when the bank fishing was prosecuted extensively from hence, was as well known to the masters of the bankers as any particular part of the coast; and indeed appears to have been their general and invariable resort during the months of June and July; that is, the caplin season."

By Captain Codner

"The Virgin Rocks lie in lat. $46^{\circ} 33' N.$, and from 68 to 71 miles east of Cape Race, as nearly as possible. These rocks are three in number, and lie about three-fourths of a mile from each other. One is a white, and the other two black rocks, with their kelps up on the water's edge. The water upon them, when low, is $3\frac{1}{2}$ or 4 fathoms."

By Mr. Michael Haley, of St. John's.

"From Ferryland always steered S.E. by E., by compass 81 miles; anchored in 27, 15, or 12 fathoms. Saw them break heavily once when I was a little to the eastward of them: observed the shoal to break about the length of 5 or 6 miles. The shoals seem to extend about N.E. and S.W.; blowing hard at the time from the N.W.; was in a vessel about 50 tons, a banker. The Trepassey fishermen, who constantly fished on them, always took their departure from Cape Race, and steered about E.S.E. by compass: knew when they were among the rocks, both from the shoalness of the water, and from the chain-cables coming up much brightened. Sixteen years ago I was there, and fished on them constantly for seven or eight years. Have heard numbers say, that they have frequently anchored in five fathoms water among the rocks. The shoal appeared, from the breaking of the sea, not to be of much breadth."

2. THE PRINCESS ELIZABETH SHOAL. *West of the Azores.*
 LAT. $38^{\circ} 16' N.$ Lon. $39^{\circ} 49' W.$ *No Soundings.*

Extract of a letter from Lieutenant Scott.

"On the 24th of April, 1828, at three o'clock P.M., I came on deck, and immediately observed the water round the ship very green, and with every appearance of being in soundings; and, on looking before the starboard-beam, saw under water, at the distance of about two cables, what evidently appeared, to the master and myself, to be a white sand-bank or rock, which the water did not then break on, but it appeared so very plain, that there could not be much water on it. In extent it was about one, or one and a half cable E. by N. and W. by S. (true bearings), and about half a cable in breadth. Immediately on observing the shoal, I ordered the lead and line up, but, ere it was ready, the colour of the water had changed to a deep sea-blue, when it was evidently no use to sound: at that time we were about a mile from the white spot; we had at the time a good breeze, but very little swell of the sea, for the Atlantic ocean. I obtained two sets of lunar distances the day before; and at noon on the 23rd had taken myself, with a sextant, the meridian altitude *very particularly*, in order to obtain the time correctly, for lunar distances, on the opposite side to those taken on the 23rd; and which I did obtain, and made the latitude of the shoal $38^{\circ} 16' N.$, and by the mean of the lunars, which differed very little, in longitude, $39^{\circ} 48' 49'' W.$ Owing to a defect in my chronometer, I was not enabled to bring forward the longitude by it, but every care and attention in my power has been taken to give its correct situation.

"EDMD. SCOTT,

"Commanding the Princess Elizabeth Packet."

3. THE DRUID ROCK. *N.W. of the Azores.* LAT. $41^{\circ} 19' N.$
 Lon. $41^{\circ} 35' W.$ *Supposed above water.*

Extract of a communication made by Mr. Treadwell, commander of the Druid, just arrived in the river from Montserrat.

"On the 12th of April, 1831, at 6 P.M. I passed a shoal on my starboard

side, not more than 30 yards distant. Its situation on my chart (Norie's) is lat. $41^{\circ} 24' N.$ and lon. $41^{\circ} 20' W.$ It being just after a calm, and having had a good meridian altitude, I consider its real latitude $41^{\circ} 19' N.$, and longitude, by my chronometer, which has always proved correct, $41^{\circ} 35' W.$ The shoal had the appearance of about seven or ten sugar-loaf heads, their whole length, from E.N.E. to W.S.W., from ten to fourteen feet. The west-end about seven feet, and the east-end about three feet high. The *Druid* was lying to the wind when she passed about 30 feet to leeward of it, having previously had a calm of two days' continuance, with a smooth sea."

4. *HARPY'S SHOAL. Near Porto Bello. Soundings. 6 fathoms.*

Notice of a shoal near Porto Bello.

"Point Manzanillo, S.W. by compass; Tambor Island, W. $\frac{1}{2}$ S. 4 miles; off shore, $3\frac{1}{2}$ or 4 miles. His Majesty's Ship *Harpy*, February, 1829, sounded in 6 fathoms, rocky bottom, and then hauling to the N.W. gradually deepened to 20 fathoms. "F. BEAUFORT, Hydrographer.

"Admiralty, 18th July, 1829."

5. *PORT ROYAL, JAMAICA.—Mark for avoiding the MIDDLE GROUND.*

A beacon, with a small triangle, about 50 feet above the level of the sea, has been erected on the palisadoes, between Great and Little Plum Points. When bearing N. by W. by compass, or in one with Kingston church, it will lead clear to the eastward of the East Middle Ground.—*See Admiralty Plan of Port Royal.*

6. *RANGER ROCK.—Pictou Island, Nova Scotia. Soundings 2 fathoms. (Ship struck.)*

His Majesty's Ship *Ranger*, commanded by Captain W. Walpole, in passing between Pictou Island and Caribou Point, (coast of Nova Scotia,) on the 18th of August last, struck on a sunken rock, while in stays. The rock lies in the fair-way between Pictou Island and Caribou Point, being distant about one-third the breadth of the channel, in a W. by N. direction from the western point of the island. The circumference of the rock is about 400 yards, and the tide was found to set over it at the rate of $2\frac{1}{2}$ miles per hour, the flood setting to the N.N.W., making high water at full and change at 9h. 30m. On its western edge, the rock has 4 and 5 fathoms close to it, and 5 to 7 fathoms on its eastern edge. The position of this rock renders it extremely dangerous to ships leaving Pictou harbour for the westward, as it lies immediately in the fair-way. The channel to the westward of the shoal is generally adopted, in which there is from $3\frac{1}{2}$ to 4 fathoms irregular soundings.

7. *LATITUDE OF BENGUELA. Western Coast of Africa.*

M. Dourville, a French traveller, lately returned from a journey into the interior of Africa, differs from Captain W. Owen, in the latitude he assigns to Benguela. Captain Owen, in his survey of

the coast of Africa, in the years 1821-6, determined the latitude on the same spot as M. Dourville, and from its being one of his chronometric stations, the observations are entitled to additional confidence. M. Dourville observed with an octant, by Gambey of Paris, and a glass artificial horizon, adjusted by spirit levels, and his latitude is the result of two meridian observations of the sun. Captain Owen's observations were generally made with a sextant and artificial horizon of mercury. The place of observation was the sea-beach, close to the custom-house, and the results were as follow:—

M. Dourville, in December, 1827 12° 31' 42" S.

Captain Owen, in November, 1825 12° 33' 54" S.

And Mr. De Mayne, in 1811 12° 33' 5" S.

Mr. De Mayne observed with the natural horizon from the anchorage, from whence his latitude, as given above, has been inferred. Much as we might be inclined to entertain a favourable opinion of Mr. Dourville's observations, the experience of Captain Owen entitles his to implicit confidence. However, as his correctness has been thus questioned by a foreigner, who has travelled several thousand miles in the interior of Africa, a corroboration from a future visiter is desirable.

8. LIGHT VESSEL ON THE HAISBOROUGH SAND. *East Coast of England.*

" Notice to Mariners. Haisborough Sand.

" Trinity-House, London, 2nd November, 1831.

" THE Corporation of Trinity-House having resolved to establish a Floating Light near the north end of Haisborough Sand, off the coast of Norfolk, in compliance with the request of the merchants, owners and masters of vessels, and other persons, using or interested in the navigation of the east coast of England: Notice is hereby given, That a vessel is now preparing for that purpose;— and that immediately after her necessary equipment, which will be completed in about two months,—the vessel will be moored at the station; and lights from two lanterns, raised on separate masts, will be exhibited on board the same, and thenceforth continued every night from sun-set to sun-rise.

" Farther notice will be given when the vessel has taken the station.—By order,

" J. HERBERT, Secretary."

" Trinity House, London, 22nd December, 1831.

" The equipment of the Floating Light Vessel, intended to be stationed near the north end of Haisborough Sand being now complete, Notice is hereby given, That in pursuance of the intention expressed in the advertisement from this House, bearing date the

2nd of November last,—the said vessel will be placed at her station (wind and weather permitting), on or before the 1st day of January next,—and it is intended that, on the evening of that day, the lights on board the same shall be exhibited from Two Lanterns raised on separate masts, and thenceforth continued every night from sun-set to sun-rise, for the benefit of navigation.

“ The vessel will be moored in 13 or 14 fathoms at low-water spring tides—with the following compass bearings :—

“ Cromer Light House - - - - - W. by N.

“ Haisborough High Light House - - - S. W. $\frac{1}{4}$ S.

“ Further notice will be given after the Light Vessel has taken the station.—By order,

“ J. HERBERT, Secretary.”

“ Trinity House, London, 6th January, 1832.

“ Notice is hereby given, That in compliance with the applications of numerous bodies of merchants, owners and masters of ships, and other persons, this Corporation has caused a Floating Light Vessel to be moored off the north end of Haisborough Sand ; and, in conformity with the intention expressed in the advertisement from this House, dated the 27th ultimo, the lights on board the same were exhibited on the evening of the 1st instant. These lights, which will be kept continually burning from sun-set to sun-rise, are exhibited from Two Lanterns, raised on separate masts ; and the vessel is moored in 13 $\frac{1}{2}$ fathoms at low-water spring tides, with the following compass bearings, viz. :—

“ Cromer Light House - - - - - W. by N.

“ Haisborough High Light House - - - S. W. $\frac{1}{4}$ S.

“ North Buoy off Haisborough Sand - - E. by S.
distant about one mile.

“ The words “ Haisbro' Light” are painted on the sides of this Light Vessel ; and on the sides of the Light Vessel, in Haisborough Gatt, the word “ Newarp” will be painted, instead of “ Happisburgh Gatt,” as heretofore.—By order,

“ J. HERBERT, Secretary.”

9. NEW LIGHT HOUSE ON TORY ISLAND.

Notice to Mariners.

“ The Corporation for preserving and improving the Port of Dublin, &c., give notice, that a Light-House is now building on the north point of Tory Island, situate off the N. W. coast of Ireland, county Donegal, from which a fixed bright light will be exhibited on the evening of the 1st of August, 1832, and continue

thenceforth to be lit from sun-set so sun-rise.—Tory Island Light-House bears by compass,

“ From Arranmore Light-House, N.E. b. E., distant 18½ Naut. miles.	
.. Bloody Farland Point, N.E. ¼ N. ..	8 do.
.. Horn Head - - - - N.W. ¼ N. ..	10 do.
.. Lough-Swilly Light-House, W.N. W. ¼ N. ..	20½ do.
.. Malin Head, - - - W. b. N. ¼ N. ..	29 do.
.. Innistrahul Light-House, W. b. N. ..	35½ do.

“ The Light will be seen seawards, but in passing through the Sound it will be shut by the cliffs at the south of the Island, from N. by W. ¼ W. to N.N.W. ¼ W.

“ The Lantern will be elevated 125 feet over the level of high-water of spring-tides.

“ N.B.—The light now shewn from Arranmore Island, will cease to be exhibited, after the lighting of that on Tory Island.—By order,

“ JOHN COSSART, Secretary.”

“ Ballast-Office, Dublin, August, 1831.”

10. LIGHT HOUSE ON DUNNET HEAD.

Notice to Mariners.

“ The Commissioners of the Northern Light Houses hereby give notice, that a Light House has been erected upon Dunnet-head, in the county of Caithness, the light of which will be exhibited on Saturday the 1st day of October, 1831, and will thereafter continue to be lighted every night, from the going away of daylight in the evening, till the return of daylight in the morning.

“ The following is a specification of the position of the Light-House, and the appearance of the Light, by Mr. Stevenson, Engineer to the Commissioners.

“ Dunnethead Light House is situate on the northern extremity of the mainland of Scotland, in north latitude $58^{\circ} 42'$, and west longitude $3^{\circ} 29'$.

“ The Light House, by compass, bears from the north end of the Island of Stroma, in Pentland Frith, W. by N. distant $7\frac{1}{2}$ miles; from Hoy Head, leading to Hoy Sound, S.S.W. distant 13 miles; from the Stack and Skerry, S. by E. ¼ E. distant 31 miles; and from Cape Wrath in Sutherlandshire, E. by S. ¼ S. distant 42 miles. In reference to these bearings, the Light will be visible to the mariner in a northerly direction from S.E. ¼ E to W.

“ This Light will be known to mariners as a Stationary Light, from oil, with reflectors; and being elevated 346 feet above the medium level of the sea, it will be seen like a star of the first

magnitude, at the distance of from 7 to 8 leagues, and at intermediate distances according to the state of the weather.—By order of the Commissioners of the northern Light-Houses,

“ C. CUNINGHAM, Secretary.”

“ Edinburgh, 18th August, 1831.”

11. NAVIGATION OF THE RIVER THAMES.

Notice to Mariners.

Trinity-House, London, 28th October, 1831.

“ Notice is hereby given, that this Corporation has caused a Beacon to be placed a short distance within the Spit, or greatest northern projection of the Blyth Sand, in Sea Reach.

“ The Beacon stands upon the high dry sand, at low-water spring tides, with the following marks and bearings, viz.:—

“ A conspicuous round-topped tree on Canvey Island, on with the eastern point of Holy Haven, bearing - - - - - N. $\frac{1}{2}$ E.

“ The western side of the tower of Hadleigh Castle, on with the eastern side of a Farm House next eastward of the Scar Houses - - - - - N.E. $\frac{1}{2}$ E.

“ Shell Haven House - - - - - N.W. $\frac{1}{2}$ N.

“ By order,

“ J. HERBERT, Secretary.

“ N. B. By the act 6 Geo. IV. cap. 125, any person who shall run down, or run foul of, any buoy or beacon, shall be liable to a penalty not exceeding £50, nor less than £10, in addition to the expense of replacing the same, or making good the damage so occasioned.”

12. FLOATING LIGHT VESSELS.

Notice to Mariners.

“ Trinity-House, London, 25th January, 1832.

“ Notice is hereby given, that the Bells which it has been the usage to ring in foggy weather, on board the Floating Light Vessels belonging to this Corporation, have been removed, and Chinese Gongs placed instead thereof.

“ These instruments will be sounded during fogs, at regular intervals of ten minutes, and will, it is expected, by the power and great peculiarity of the sound which they emit, effectually warn the mariner of his proximity to some one of this Corporation's Light Vessels, or other Light Establishment at which they may be hereafter adopted:—And in reference thereto, notice is also hereby given, that it is the intention of the Corporation, that Gongs shall be furnished for the like purpose, at certain of the Light House Stations, the particulars of which will be hereafter advertised.—By order,

“ J. HERBERT, Secretary.”

VOYAGES.

I. THE SOUTH ROCK, IN THE ST. LAWRENCE.

(An Original Sketch.)

WE left Quebec in our little vessel, at the opening of the navigation, as usual, and a few days after we anchored at sun-set of a fine evening, off St. Ann's, on the south bank of the St. Lawrence. It was calm, clear, and fine; we had therefore no hesitation in anchoring in so exposed a situation for a night; besides, the calm left us no choice. At day-light the fine weather was all gone; and instead of it, we had a thick fog, and fresh increasing gale from the North-East. We tried to get under way, but the strong lee tide and heavy gale rendered it impossible. At ten A.M. the weather tide made, and allowed us to heave up to our anchor, it being our intention to stand across the river to Goose Cape, and there ride out the gale. When our cable was *short*,* a heavy squall,† and two or three tremendous seas in succession snapped the shackle of the chain next the anchor, and we parted. We had no pilot; and a thick fog, with a strong gale; could not see a hole through a grating, and close to the Traverse.‡ We bore up without hesitation, and, with two hands in the chains, picked our way through the shoals, and anchored nine miles below Quebec the same evening. The next morning at daylight, the captain went off to Quebec in his gig,§ and got a new anchor: the vessel was under sail again the same afternoon, and the next day at anchor off L'Islet.

This is the first anchor, or indeed any thing else, that we have lost since our work began, not even a spar has been sprung. We were now, however, doomed to experience the truth of the old adage—"misfortunes never come single." At two P.M. the ebb made, and enabled us to beat against a light easterly breeze, with fine clear weather, and a sea as smooth as glass. We had to make a board|| or two before we could reach the part where we wished to commence an examination for some shoal-water, and as it was

* *Short.* Here applied, signifies that the cable was nearly all in the vessel.

† *Squall.* A strong wind of short duration.

‡ A dangerous passage in the river.

§ *Gig.* A small fast-rowing boat.

|| *Board.* A vessel beating to windward, or endeavouring to reach a point from which the wind is blowing, when she has sailed with the wind on one side of her a certain distance, regulated according to circumstances, and returns with it on the other side, to windward of the point from whence she started, is generally considered to have made a board.

likely that our work would occupy us till dark, we agreed to fortify the inward man first, and therefore, with the doctor and master, went down to dinner, as the former would be required for a particular service, and the latter to attend to the working of the vessel, a matter which requires the utmost promptitude and attention when entangled among shoals in so rapid a tide-way.

Our assistants were absent, with fourteen hands, in two boats. The captain left the deck in charge of the second officer, a remarkably fine fellow, who has commanded several ships of his own, and who had been with us all the previous year, and therefore was up to all our proceedings, and knew the river well, from the experience he had gained with us. We were standing to the northward on the starboard tack, under all sail, even to the royals, and the wind being very light, we were not going through the water above the rate of three knots; but it was evident that we should fetch* to the westward of the South Rock off the Stone Pillar. The rock was just beginning to shew itself, and the tide running over it, made a sort of wake for half a mile past it; in short, it was as plain as St. Paul's at noon-day. The captain gave particular directions to Mr. — to mind and tack† in time, and take care of the rock. "Ay, ay, sir, I see it—no fear, sir," was the reply. We had been sounding round it the evening before within a stone's throw.

We had just swallowed a hurried dinner when the helm was put down, and immediately afterwards the vessel struck, but so gently as not even to disturb a glass on the table. The captain instantly sprang on deck, and comprehended the situation of the vessel at a glance. She had been allowed to stand over too far, so as to get in the wake of the rock before the helm was put down, and now laid with her broadside on the west side of it, with a tide of four knots pressing her upon it, and the water falling fast. To get her off till the next flood, was manifestly impossible; but as there is a depth of five fathoms alongside of the rock, which is very steep, she was in danger of falling off it, when the water left her. The captain instantly ordered weight over to the starboard side (her head being to the north) to insure her heeling towards the rock; and then ordered the hatches to be battened down.

While the foregoing was in operation, he went to sound round the vessel, and soon perceived that she was sufficiently far on the rock to retain her position on it. The chronometers and papers were then landed on the Pillar, to be prepared against all accidents. The launch was hoisted out, and an anchor got into her, in readiness to be laid out as soon as the tide should slack, and enable us to do so. The sails were furled, and the captain was

* *Fetch.* To arrive.

† *Tack.* A vessel sailing with the wind on one side, is said to tack when she is turned round towards the wind, so as to bring it on the other side.

monstrously particular with the boatswain, that they should be furled well; as any departure from the usual routine, in moments of danger, creates alarm, and consequently confusion, among the crew.

We had now time to think a little; the vessel had settled down, as the water fell, into the position she was likely to occupy till the following tide, and it was clear that her fate hung upon a mere chance. If the wind remained light, and there was no sea, we had reason to hope she would get off without material damage; certainly with no more than she might have already received, and what that amounted to, we could not tell till low water: but if only a moderately fresh breeze sprang up from the westward, to act against the flood-tide, and keep pressing her on the rock as she began to float, she must be lost as a matter of course, for the slate rock is in vertical strata, the edges of which are so sharp as to require great caution in walking upon them, as a fall might produce dangerous cuts.

The captain now summoned the officer who had charge of the deck, to explain how all this had occurred. The poor fellow was almost out of his senses, at the thought of having been the cause of our misfortune, and said, that the buoy rope had got foul of the heel, that is, between the rudder and the stern-post, and that he was so absorbed in clearing it, that he forgot the rock till it was too late.

At this time several ships were dropping down the river, approaching us, but considering that five thousand men could be of no service to us, and that the presence of a much smaller number would only create confusion, the best way was to put a good face upon the matter; so the yards were squared,* and the ensign and pendant hoisted, and the crew were told that they would not be wanted till low-water. On this intelligence, the rock being now uncovered, they descended upon it, some beginning a game at romps with the captain's large Labrador dog Boxer, while others coolly began to wash their clothes, &c. At the same time, the captain went on shore on the Stone Pillar, about one-third of a mile distant, and set up his instruments, and commenced a series of observations on the heights of the opposite mountains; while the doctor, with his tin botanical box and geological hammer, proceeded to search for specimens.

We were thus occupied, when several ships passed close to us; we could see with our glasses that they were examining us with looks of astonishment, and evidently did not know how to reconcile all the circumstances submitted to their consideration. Our little craft looked extremely pretty, with her narrow vermilion

* *Squared.* Placed at right angles to the masts, and to the longer axis of the vessel.

streak, golden lady-head, gilt stars on her cat-heads,* and gilt moulding and stars on her stern, and displayed her beautiful run† and bright copper to the greatest advantage. One of these passing gentlemen inquired of the master, how we came to be in such a situation; who instantly answered, with the utmost nonchalance, that we were only lying there for a tide, having selected that clean rock, in order to look at our bottom, and brush up our copper before we proceeded to sea. "You have chosen a most extraordinary place," says the other. Yes, said the officer, extraordinary to you, or indeed to any body but ourselves, but you see we know every thing respecting the river. "Oh, oui, monsieur," said the Canadian pilot, "that d—n schoonaar—she go every where—she not care a d—n;" and this story spread from one to the other, and was universally believed at Quebec; and is so still, by all but the initiated.

At six p.m. the captain returned on board, and found the vessel several feet above the water, and certainly in no very enviable situation. Her fore part rested upon one mound of rock, and another supported her keel‡ just abreast of her main-chains; all abaft, this last point hung in the air, so that any body could creep under her. Her bilge|| on the starboard side rested upon a third protuberance of the rock only a foot or two in diameter; and the weight, one hundred and thirty tons, of water, provisions, and stores, caused a fearful pressure on this point; the effect of which was, a great hollow in her bottom, which looked, as Jonathan has it, 'very ugly.' It was now that we found the benefit of the extra fastenings which the captain had caused to be added when she was building; for, although thus lying on three points, with twenty-five or thirty feet of her keel abaft unsupported, yet her frame did not appear to give, in the least. We, however, thought she might get tired of lying in such an uncomfortable situation, and therefore set to work to relieve her. Large chocks of wood and wedges were now placed under her bilge, and also under her keel abaft; then slinging a heavy spar over the side, we worked it like a battering-ram, with fourteen or fifteen men, driving in wedge upon wedge, so as to almost lift her; and thus the strain was equally divided all over her. Having accomplished this, we piped to supper. At nine we perceived the tide to begin to flow, and the anchor was laid out, all ready.

* *Catheads.* Large pieces of timber projecting from the fore-part of the ship, for the purpose of assisting to secure the anchor.

† *Run.* A vessel is said to have a clean run, when that part of her bottom near the stern forms a curve approaching the shape of a wedge. *Clean* here is used in opposition to *full*.

‡ *Keel.* The lowest piece of timber in a ship, extending along her whole length.

|| *Bilge.* The broadest part of a vessel's bottom.

The night now came on, and with no favourable aspect; black clouds began to collect, and there was every appearance of a change of weather: there was nothing, however, to be done, but to wait with patience, so we had recourse to the books to which our kind friends at Quebec had supplied us, to pass away the time. At midnight, the tide was gathering around us fast, the carpenter reported, that she did not make any water; but we were alarmed by several pretty strong gusts of wind from the North-East, attended with some rain. At one A.M. however, it had again fallen calm, and we expected her every moment to rise. The doctor got a gauge on the table, contrived with a graduated slip of card in a tumbler of water, and had just informed us that she began to move, when suddenly up she got, and fell completely over the other way with a tremendous surge. This was caused by the force of the flood-tide upon her starboard broadside. We now began to heave as heavy a strain as the seven-inch stream-cable* would bear, but still she remained immoveably fixed upon the rock. The chain-cables, and every thing that could be moved, were now got aft on the quarter-deck,† and then another heave, in vain. We were just thinking of lightening her, when suddenly she floated off, and swung to her anchor.

Our troubles we now thought were over, but we were wrong; for there was an eddy, a sort of whirlpool under the rock, in which her ladyship kept turning round, alternately presenting her stern and bows to the rock, till at last, watching when she described a wider circle than usual, we let go one of our bower-anchors, and effectually put an end to her capers.

We had then to re-embark the things which had been landed on the Pillar, so that it was six A.M. when we were all to rights, having been up the whole night. The men were allowed to rest till eight the following morning, and at ten A.M. we were sailing away as merrily as ever. The vessel did not lose a bit of her copper by all this, and made no water during the whole summer, so that the dint in her bottom was only the elasticity of her planking; nevertheless, she is to be examined this winter.

“All is well that ends well;” but under an assumed carelessness of countenance, there were some very unpleasant feelings on board the vessel during the twelve hours in which she occupied her exalted station on the South Rock.

* *Seven-inch Stream Cable.* The sizes of all ropes are measured by their circumferences. A small cable.

† *Quarter-deck.* Generally speaking, a part of the upper deck from the principal mast of a ship, towards her stern.

II.—*Sketch of the Operations at Cape Frio, to recover the Treasure and Stores lost in his Majesty's late Ship THETIS.*

It has been justly remarked, that "difficulties create resources, in an active mind;" which observation is amply verified in the character of the seaman. To find expedients, is his leading quality; one for which he is indebted to the very nature of his profession. His ship contains his whole store, and, with comparatively small means at his command, he resolutely and cheerfully performs the duty assigned to him, be it what it may. It is precisely under these circumstances that the operations to recover the property lost in His Majesty's late Ship Thetis, have been going forward.

The Thetis having completed her period of service on the South American station, sailed for England from Rio Janeiro on the 4th of December, 1830. Ships of war returning home from South America are generally freighted with treasure, and the Thetis had on board 800,000 dollars. The weather, after the vessel had sailed, proved tempestuous, the wind blowing strongly from the eastward, the effect of which was a current that was fatal to the Thetis. She was lost on Cape Frio in the night of the 5th of December, in dark stormy weather. It has been advanced by Professor Barlow, in a paper read before the Royal Society, that the effect of the local attraction of the ship on the compass tended materially towards her loss; and there can be little doubt, from the experience of the learned author in these matters, that this insidious evil, which every ship carries about her, in a greater or less degree, contributed to produce the catastrophe. Our present object is, to give an account of the means by which a vast deal of the money and stores on board of her have been saved.

When the Thetis sailed from Rio, His Majesty's Sloop Lightning, commanded by Captain Dickinson, was in the harbour refitting, and when the intelligence of her loss arrived, although every thing on board was supposed to be irrecoverable, Captain Dickinson was not of that opinion, and thought, at least, that some of the treasure might be saved. He accordingly offered his services to Rear-Admiral Thomas Baker, K. C. B., the Commander-in-chief on the South American station, and obtained permission to carry his plans for this purpose into effect. The first thing to be provided was a diving-bell, for which two iron tanks were supplied from His Majesty's Ship Warspite. Iron tanks are used in His Majesty's Navy instead of casks, for the purpose of containing water, and are about five feet cube, which allows of their holding about two tons. The plan proposed to be adopted by Captain Dickinson was communicated to Mr. Moore, an Englishman of acknowledged skill and experience as a civil engineer, residing at Rio, who so far approved of it, as to engage his own services

towards carrying it into execution, in return for which he was to receive payment in proportion to the amount of property recovered.

During the time that these preparations were going forward at Rio, the *Algerine*, Captain Martin, and the *Adelaide* schooner, with the *Warspite's* launch, were at Cape Frio, and saved a few stores, which had been washed on the rocks by the surf.

Under the auspices of Mr. Moore, the diving-bell was shortly completed by the armourers of the ships at Rio, and an air-pump, which had been nothing more than a fire-engine, was got ready, and provided with a hose, constructed with much care, from those belonging to Captain Truscott's forcing-pump. The property of these hoses is that of being air-tight, but they were rendered more secure by the application of tar and canvass, and fortified against outer accident by spun-yarn passed carefully round them. The diving-bell being ready, the first experiment was made with it in the harbour of Rio, when it was let down to a depth of seven fathoms and a half from His Majesty's Ship *Warspite*, and was found to answer perfectly well.

Captain Dickinson now proceeded in the *Lightning*, with the diving-bell and air-pump, besides a collection of hawsers* and anchors, to Cape Frio, the scene of operation. A net was also prepared, to be spread across the entrance of the cove in which the *Thetis* lay, to prevent any part of her wreck from being washed out to sea. On arriving at Cape Frio, Captain Dickinson, accompanied by Captain Martin, of the *Algerine*, proceeded to examine the shore of the cove, and determine on the plan to be pursued for suspending the diving-bell. The sketch at the commencement of this number, shows the nature of the coast, which, as might be expected, was of that rocky description, which rendered the task still more difficult.

To obtain a point of suspension for the diving bell was now the chief concern: the general height of the land is about two hundred feet, and Captain Dickinson imagined, that he could stretch cables across the cove from one height to the other; but the immense span which this required rendered it impossible, and he determined on employing a *derrick*.† To construct this machine, every piece of wood that could be found on board the ships was put in requisition, the land affording none that was available; and the work proceeded under the direction of Mr. Batt, the carpenter of the *Warspite*.

On the second of February, Colonel Gasque, a Spanish officer of the Brazilian service, arrived at Cape Frio, with seven natives of the country, who were reported to be expert divers. These people however, did no good whatever, neither did the gallant colonel; and, after failing in all their attempts, they returned to Rio.

* *Hawsers*. A strong rope made like a cable.

† *Derrick*. A temporary crane.



F. Wood del.

*Cap. T. Dickinson's method of recovering the Treasure from the Wreck of the Thetis,
at Cape Frio.*

The Thetis, a small vessel, was wrecked on the rocks of Cape Frio, in 1800.

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While the derrick was in progress, Mr. Jones, the carpenter of the *Lightning*, was employed with a party in preparing a capstan* and bollards,† besides various fastenings, which would be required for its management. Mr. Moore was equally busy in preparing a clear even space on the summit of the rocks in the interior of the cove, for the main purchases,‡ and in fixing iron-bolts in various parts of the cliff, for the ends of guys§ for the derrick.

Hitherto the officers and men had lived entirely on the island forming the Cape, in tents constructed of old sails and pieces of canvass. These were but a sorry protection against the sand, which was continually blown about in such quantities as to make its way into every thing they had, but the greatest annoyance was that of finding it among their provisions, from which it was utterly impossible to exclude it. After enduring this for a long time, the season changed, the wind became variable, and was accompanied by rain. The change, therefore, was for the worse; for the frail habitations which had been erected, were even less calculated to withstand the effects of the storm, and consequently they admitted the rain in nearly every part. Great inconvenience arose from wet beds and clothes, which produced ill effects on the health of the party; and although endeavours were made to improve the tents with the resources which the island afforded, still little was done in this particular.

During the time that all these preparations were going forward, Capt. Dickinson attempted to work the diving-bell from the launches|| which he had brought from Rio, but it was found too heavy for either of them. Determined, however, that no time should be lost, he directed a smaller one to be made, and the launch of the *Warspite* was selected and prepared for working it. At the same time parties of men were engaged in creeping up whatever could be got from the wreck by means of ropes. On the 2d of March, the small diving-bell was completed, and a trial made with it in the cove, that proved satisfactory; but in consequence of bad weather, and some further alterations that were necessary in the boat which was to work it, nothing was done with it until the 7th of March. On this day the boat was secured with it over the wreck, and the bell sent down with Richard Heans, the carpenter's

* *Capstan*. A machine by which much mechanical power is gained, from the application of the lever to a strong wooden roller, secured in a vertical position, so as to turn on its axis.

† *Bollard*. A strong piece of timber placed vertically in the ground, part of which is left above it, on which to fasten ropes.

‡ *Purchases*. A series of large pulleys. The principal are here meant.

§ *Guy*s. Ropes to move the derrick in any horizontal direction, and retain it there.

|| *Launches*. A launch is the largest boat of a ship of war.

mate of the *Lightning*, and George Dewar, a seaman. The bell had not been down long, when the wind freshened, and occasioned so much violent motion to the launch and the hoses, that they became leaky, and it was found necessary to heave it up again, and secure the boat. Whenever the weather permitted, the small bell was constantly in operation, and on the 10th of March, by the violence of the sea, was dashed against the rocks at the bottom of the cove. This accident had nearly proved fatal to the two men Heans and Dewar, who extricated themselves from it as it was thrown on its side, and with difficulty reached the surface of the water. The latter was nearly exhausted when he came up, and was snatched into the boat instantly by Captain Dickinson, by which his life was saved.

A delay of three days was occasioned by this accident, at the end of which time the bell was again ready for working, and was employed as before. The effect of the operations in the small bell now showed itself, as several pieces of the wreck, which had been detached from the rest, were seen floating about in the cove. Among these were a great many of the vessel's timbers, a part of the sternpost; and, a large mass of her bottom being discovered under water, the position of it was marked for examination by buoys.* The same method of marking the position of different parts of the wreck was also adopted, and the buoys were regularly numbered; a measure which contributed much towards the order and regularity of the proceedings.

In the course of the operations with the small bell, on the 19th of March, the chain-cable was discovered, and attempts were made to raise it, without effect, from its being so much buried among other parts of the wreck.

At this stage of the proceedings, the length determined on for the derrick was found to be too little by thirty feet, which must have arisen either from a mistake in the measurement of the distance which the wreck was from the rocks, where the derrick was intended to be stepped, or from the position of the wreck having changed. The original length of the derrick was ordered to be one hundred and twenty feet, but the distance of the wreck from the rocks being as much as one hundred and fifty feet, it became necessary to lengthen the derrick to at least one hundred and fifty-eight feet, to give it a sufficient inclination. This produced a further delay, but the time was not lost; for while it was in progress, the *Lightning's* three anchors and her capstan, besides three crabs, † were fixed on the principal cliff, for the topping-lifts ‡ of the derrick. In addition to these, other crabs were placed

* *Buoys.* A buoy is a hollow vessel fastened by a rope to the anchor. When in use, it floats over it, and shows its position.

† *Crabs.* Portable machines used as capstans.

‡ *Topping lifts.* Ropes to raise or lower the outer end of the derrick.

on various parts of the cliffs, for receiving guys to steady it. The small diving-bell was also kept at work, in loosening and clearing away as much as possible the lesser pieces of the wreck. This service was attended with much danger, from the constant south-easterly gales, which produced so much swell, that the bell was frequently dashed against the rocks, to the great risk of its being broken, as well as endangering the hoses of the air-pump.

About two months had now elapsed, and nothing in the shape of treasure had been recovered, although the utmost exertions had been made that the small diving-bell would permit; and it was generally thought that it had been washed out to sea, as the net, which had been placed across the mouth of the cove at the commencement of the operations, had been quickly carried away by the violence of the waves. With this prevailing opinion, it was determined to save those parts of the stores, the position of which had been marked by buoys; when, on the 1st of April, the persons at work in the small bell discovered some dollars among the rocks at the bottom, and these having been collected, led to the discovery of more, besides a quantity of gold. This was sufficient encouragement to hope that more was there; but so completely was it buried among the rocks at the bottom, that it was difficult to distinguish it, and a torch was employed in the bell; which, however, after a short time, was found not to answer. In the midst of this success, the launch was nearly lost, owing to a sudden shift of wind, which produced so much swell, that it became necessary to heave up the bell, and leave the cove as soon as possible. On the 5th of April, the operations having been resumed, some more treasure was recovered in the small bell.

The derrick was now nearly completed, the men having been employed in preparing the fittings for it, when they were unable to work the small bell, from the violence of the wind, and all hands were now occupied in reeving the purchase falls,* and getting the chains and hawsers into their places on the cliffs of the cove. This was a work of more than ordinary danger, in consequence of pieces of rock being displaced from the sides of the cliffs, and falling among those employed below; and the danger was still further increased, from the rugged nature of the rocks allowing of no escape. Men were to be seen slung in ropes on all sides of the cove, busy in fixing the guys, &c. for the derrick, which happily was effected without any accident, from the judicious arrangements that had been made.

The small diving-bell still continued at work, and, on the 8th of April, the men in it found themselves in the midst of a large quantity of provisions, the stench of which was so great, that the life of one was endangered by it, and he was immediately removed from the bell. On the following day, the derrick being completed, it was

* *Purchase falls.* The strong rope rove through the pulleys.

launched into the harbour, and towed round to the cove. Being put into its place, and every thing prepared for heaving it up, this business was commenced; but the swell from the sea, which set into the cove, was so great, that it could not be done; and it therefore became necessary to tow it back again for safety to the harbour. The operation of towing so large and unwieldy a spar through a boisterous sea was most laborious; and the party employed underwent great bodily fatigue in performing it. On the 10th of April, another attempt was made to get the derrick in its place, which was more fortunate than the preceding. After being again towed round, and placed in its step, the outer end of the derrick was hove up ten feet above the surface of the water, and secured. The next day attempts were made to raise the outer end of the derrick higher by means of the purchases; but in consequence of its extreme length, and the number of pieces of wood with which it was constructed, it betrayed weakness, and more topping-lifts were found necessary for its support. These were speedily completed, and the end of the derrick was at length hove up fifty-five feet from the surface of the water, at a sufficient angle to secure its stability. A very short time after this, the wind freshened and produced a swell, which would have put a stop to the operations, but the derrick was now secure. The seamen had undergone greater labour and privation in these three days than at any other period of the operations; and such was the importance of making the most of the few days of fine weather, that they had worked throughout the two last, from half past four in the morning until late at night, without taking any refreshment. To them and their able commander it was a joyful sight to see the derrick in its place; and, having made every thing secure, they returned to the harbour prepared to resume their arduous duty on the following morning.

(To be concluded in our next, with a Plan of the Cove, shewing the position of the Wreck.)

III.—*Narrative of a Voyage to the Pacific and Beering's Strait, to co-operate with the Polar Expeditions, performed in His Majesty's Ship Blossom, under the command of Captain F. W. BEECHY, R.N., F.R.S., F.R.A.S., and F.R.G.S., in the Years 1825-6-7-8.* London. Colburn and Bentley. 1831.

THE Blossom's voyage, as the title imports, belongs to that series of attempts to discover the celebrated North-west Passage, which have been recently made by order of the British Government, both by sea and land. Although these may be said to have terminated unsuccessfully, as far as the actual passage is concerned, yet sufficient information has been gained from them to authorize

the conclusion, that at some auspicious period it might be practicable. The mere geographical problem may be considered as solved; for it has been ascertained beyond all doubt, that the continent of North America is not connected by land with the immediate regions of the Arctic Pole; and here ends the utility of the discovery.

The particulars of these expeditions have been long since published in various shapes, and are familiar to every body; but it will render our present purpose more complete, to take a brief view of them.

On the return of the first of the series under the command of Captain Ross from Baffin's Bay, in 1818, Captain Sir Edward Parry, who had accompanied him as lieutenant in command of his consort ship, the *Alexander*, was directed to resume the search for an outlet to the westward from Baffin's Bay. Sir Edward Parry sailed with his ships, the *Hecla* and *Griper*, in May, 1819, and returned to England in November, 1820, having discovered the outlet of which he went in search, and named it Barrow's Strait. His discovery also extended as far as Melville Island, in longitude $116^{\circ} 0' W$. A compact field of fixed ice had completely put a stop to the further progress of the ships westward; but it was believed that they might have succeeded better in the vicinity of the coast, where periodical openings might be found, according to the direction of the wind and the state of the weather. In May, 1821, Sir Edward Parry went out a second time, and, instead of pursuing his former route through Baffin's Bay, passed through Hudson's Straits, and endeavoured to penetrate along the coast to the westward. His progress was, however, completely stopped at a narrow strait, with an island in the middle of it, which afforded the ice so good a foundation, that to go through was impossible. As this was the only chance left him of penetrating to the westward from that part of the coast, he was obliged to give up the attempt; and, having named the strait after his two ships, the *Fury* and *Hecla*, he returned to England in October, 1823. The same ships were again sent out in the spring of 1825, under the command of Sir Edward Parry, with the object of passing down Prince Regent's Inlet, a large opening, which had been observed on the south side of Barrow's Strait, from whence it was hoped they might succeed in getting to the westward. The following winter was passed in the inlet; and in the spring after, when the ships were commencing the most anxious part of the voyage, one of them, the *Fury*, was drifted on shore and wrecked. Nothing was to be done but to return, and Sir Edward Parry arrived in England from this unfortunate voyage, without having contributed any thing new to his former discoveries.

The last voyage of this nature made by Sir Edward Parry, was in attempting to reach the North Pole from Spitzbergen, by means

The night now came on, and with no favourable aspect; black clouds began to collect, and there was every appearance of a change of weather: there was nothing, however, to be done, but to wait with patience, so we had recourse to the books to which our kind friends at Quebec had supplied us, to pass away the time. At midnight, the tide was gathering around us fast, the carpenter reported, that she did not make any water; but we were alarmed by several pretty strong gusts of wind from the North-East, attended with some rain. At one A.M. however, it had again fallen calm, and we expected her every moment to rise. The doctor got a gauge on the table, contrived with a graduated slip of card in a tumbler of water, and had just informed us that she began to move, when suddenly up she got, and fell completely over the other way with a tremendous surge. This was caused by the force of the flood-tide upon her starboard broadside. We now began to heave as heavy a strain as the seven-inch stream-cable* would bear, but still she remained immoveably fixed upon the rock. The chain-cables, and every thing that could be moved, were now got aft on the quarter-deck,† and then another heave, in vain. We were just thinking of lightening her, when suddenly she floated off, and swung to her anchor.

Our troubles we now thought were over, but we were wrong; for there was an eddy, a sort of whirlpool under the rock, in which her ladyship kept turning round, alternately presenting her stern and bows to the rock, till at last, watching when she described a wider circle than usual, we let go one of our bower-anchors, and effectually put an end to her capers.

We had then to re-embark the things which had been landed on the Pillar, so that it was six A.M. when we were all to rights, having been up the whole night. The men were allowed to rest till eight the following morning, and at ten A.M. we were sailing away as merrily as ever. The vessel did not lose a bit of her copper by all this, and made no water during the whole summer, so that the dint in her bottom was only the elasticity of her plank-ing; nevertheless, she is to be examined this winter.

"All is well that ends well;" but under an assumed carelessness of countenance, there were some very unpleasant feelings on board the vessel during the twelve hours in which she occupied her exalted station on the South Rock.

* *Seven-inch Stream Cable.* The sizes of all ropes are measured by their circumferences. A small cable.

† *Quarter-deck.* Generally speaking, a part of the upper deck from the principal mast of a ship, towards her stern.

II.—*Sketch of the Operations at Cape Frio, to recover the Treasure and Stores lost in his Majesty's late Ship THETIS.*

It has been justly remarked, that "difficulties create resources, in an active mind;" which observation is amply verified in the character of the seaman. To find expedients, is his leading quality; one for which he is indebted to the very nature of his profession. His ship contains his whole store, and, with comparatively small means at his command, he resolutely and cheerfully performs the duty assigned to him, be it what it may. It is precisely under these circumstances that the operations to recover the property lost in His Majesty's late Ship Thetis, have been going forward.

The Thetis having completed her period of service on the South American station, sailed for England from Rio Janeiro on the 4th of December, 1830. Ships of war returning home from South America are generally freighted with treasure, and the Thetis had on board 800,000 dollars. The weather, after the vessel had sailed, proved tempestuous, the wind blowing strongly from the eastward, the effect of which was a current that was fatal to the Thetis. She was lost on Cape Frio in the night of the 5th of December, in dark stormy weather. It has been advanced by Professor Barlow, in a paper read before the Royal Society, that the effect of the local attraction of the ship on the compass tended materially towards her loss; and there can be little doubt, from the experience of the learned author in these matters, that this insidious evil, which every ship carries about her, in a greater or less degree, contributed to produce the catastrophe. Our present object is, to give an account of the means by which a vast deal of the money and stores on board of her have been saved.

When the Thetis sailed from Rio, His Majesty's Sloop Lightning, commanded by Captain Dickinson, was in the harbour refitting, and when the intelligence of her loss arrived, although every thing on board was supposed to be irrecoverable, Captain Dickinson was not of that opinion, and thought, at least, that some of the treasure might be saved. He accordingly offered his services to Rear-Admiral Thomas Baker, K. C. B., the Commander-in-chief on the South American station, and obtained permission to carry his plans for this purpose into effect. The first thing to be provided was a diving-bell, for which two iron tanks were supplied from His Majesty's Ship Warspite. Iron tanks are used in His Majesty's Navy instead of casks, for the purpose of containing water, and are about five feet cube, which allows of their holding about two tons. The plan proposed to be adopted by Captain Dickinson was communicated to Mr. Moore, an Englishman of acknowledged skill and experience as a civil engineer, residing at Rio, who so far approved of it, as to engage his own services

of boats fitted to travel over the ice as well as to cross the openings in it. This expedition was not more successful than the preceding. The furthest point attained, after much severe suffering, was in latitude $82^{\circ} 40'$ N. from whence the boats were compelled to return, and Captain Parry arrived in England in the autumn of the year in which he had sailed. Thus terminated Sir Edward Parry's attempts to discover a north-west passage.

When the *Hecla* and *Griper* sailed in May, 1819, Captain Sir John Franklin, then a lieutenant in the Royal Navy, was sent out to explore the American shores of the Polar Sea, as well as the course and termination of the Coppermine River. The discovery of an extent of coast, exceeding five thousand miles, was the result of this expedition, which, in point of privation and suffering of the persons employed, was unprecedented. Sir John Franklin returned to England from this perilous enterprise in 1822.

We now arrive at the expedition which is more immediately connected with the *Blossom's* voyage. In the month of June, 1825, about the time that Sir Edward Parry sailed for Prince Regent's Inlet, Sir John Franklin was again sent out, to explore the American coast to the east and west of the Mackenzie River. The first of these duties was assigned to Dr. Richardson, who had accompanied the former expedition; while the latter was to be performed by Sir John Franklin, with the view, if possible, of penetrating as far as Kotzebue Inlet, in Beering's Strait, where he would be met by Captain Beechey in the *Blossom*. The result of these expeditions, as we shall hereafter find, left only one hundred and sixty miles of the coast undiscovered; but we will now proceed with the voyage before us.

When the *Blossom* was ready for sea, Sir Edward Parry and Sir John Franklin were pursuing their respective orders; and with the hopes of bringing home the latter of these officers with his party, even should he see nothing of the former, Captain Beechey sailed from England, on his interesting voyage, in May, 1825. As a considerable space of time would elapse before the *Blossom* was required to be in Kotzebue Sound, Captain Beechey was directed to employ the interval in surveying and determining several important points, relating to the charts, which will be alluded to in their proper order.

Having touched at Teneriffe and Rio Janeiro, where observations were made for determining the height of the Corcovado and the Sugar-loaf, two remarkable mountains at this place, the *Blossom* sailed for the Pacific Ocean in the month of August. After leaving Rio, a thunder-storm, peculiar to the tropical regions, was encountered by the *Blossom*, which Captain Beechey thus relates:

"The day after we left the port, we encountered a dangerous thunder-storm, which commenced in the evening, and lasted till after midnight:

during this time the sheet lightning was vivid and incessant, and the forked frequently passed between the masts. The wind varied so often, that it was with the greatest difficulty the sails were prevented coming aback; and it blew so hard, that it was necessary to lower the close-reefed topsails on the cap. Shortly after midnight, a vivid flash of lightning left five meteors upon the mast-heads and topsail yard-arms, but did no damage: they were of a bluish cast, burnt about a quarter of an hour, and then disappeared. The weather almost immediately afterwards moderated, and the thunder cloud passed away."

The following remark, on the land called "Tierra del Fuego," affords a strong contrast to the preceding:—

"The general appearance of the landscape was any thing but exhilarating to persons recently removed from the delightful scenery of Rio Janeiro; and we were particularly struck with the contrast between the romantic and luxurious scenery of that place and the bleak coast before us, where the snow, filling the valleys and fissures, gave the barren projections a darker hue and a more rugged outline than they in reality possessed."

On arriving at Concepcion, Captain Beechey found the Patriots preparing for an attack on Chiloe, which had not then revolutionized, and gives an amusing account of the troops who were training for that service. They were half Indians, without shoes or stockings; "but they were troops on which the people placed their dependence, which the result of the expedition did not disappoint."

At Concepcion, a short time was employed in refitting the ship, after encountering the boisterous climate of the Cape, and examining the Spanish survey of the bay, in which some corrections were made. The Blossom left this place in October, and, after touching at Valparaiso, commenced her voyage across the Pacific to Easter Island, which was seen on the 16th of November. The hostile character of the natives of Easter Island was masked under a show of friendship: at all events, Captain Beechey was determined to put it to the test; and, with the view of establishing a communication with these people, Lieutenant Peard was sent to the island with two boats, well manned and armed, while the ship lay at a convenient distance, to observe the result.

The following is Captain Beechey's account of this visit:—

"As the boats approached, the anxiety of the natives was manifested by shouts, which overpowered the voices of the officers: and our boats, before they gained the beach, were surrounded by hundreds of swimmers, clinging to the gunwale, the stern, and the rudder, until they became unmanageable. They all appeared to be friendly disposed, and none came empty-handed. Bananas, yams, potatoes, sugar-cane, nets, idols, &c. were offered for sale, and some were even thrown into the boat, leaving their visitors to make what return they chose. Among the swimmers there were a great many females, who were equally or more anxious to get into the boats than the men, and made use of every persuasion to induce the crew to admit them. But to have acceded to their entreaties would have encumbered the party, and subjected them to deprecations. As it was, the boats were so weighed down by persons clinging to

them, that, for the personal safety, the crew were compelled to have recourse to sticks to keep them off, at which none of the natives took offence, but regained their position the instant the attention of the persons in the boat was called to some other object. Just within the gunwale there were many small things which were highly prized by the swimmers; and the boats being brought low in the water by the crowd hanging to them, many of these articles were stolen, notwithstanding the most vigilant attention on the part of the crew, who had no means of recovering them, the marauders darting into the water, and diving the moment they committed a theft. The women were no less active in these piracies than the men; for if they were not the actual plunderers, they procured the opportunity for others, by engrossing the attention of the seamen by their caresses and ludicrous gestures.

"In proceeding to the landing-place, the boats had to pass a small isolated rock which rose several feet above the water. As many females as could possibly find room crowded upon this eminence, pressing together so closely, that the rock appeared to be a mass of living beings. Of these Nereids three or four would shoot off at a time into the water, and swim with the expertness of fish to the boats, to try their influence on their visitors. One of them, a very young girl, and less accustomed to the water than her companions, was taken upon the shoulders of an elderly man, conjectured to be her father, and was, by him, recommended to the attention of one of the officers, who, in compassion, allowed her a seat in his boat. She was young, and exceedingly pretty; her features were small and well made, her eyes dark, and her hair black, long, and flowing; her colour, deep brunette. She was tattooed in arches upon the forehead, and, like the greater part of her countrywomen, from the waist downward to the knee in narrow compact blue lines, which at a short distance had the appearance of breeches. Her only covering was a small triangular maro, made of grass and rushes; but this diminutive screen not agreeing with her ideas of propriety in the novel situation in which she found herself, she remedied the defect by unceremoniously appropriating to that use a part of one of the officers' apparel, and then commenced a song not altogether inharmonious. Far from being jealous of her situation, she aided all her countrywomen who aspired to the same seat of honour with herself, by dragging them out of the water by the hair of the head; but unkind as it might appear to interfere to prevent this, it was necessary to do so, or the boats would have been filled and unmanageable.

"As our party passed, the assemblage of females on the rock commenced a song, similar to that chanted by the lady in the boat; and accompanied it by extending their arms over their heads, beating their breasts, and performing a variety of gestures, which showed that our visit was acceptable, at least to that part of the community. When the boats were within a wading distance of the shore, they were closely encompassed by the natives; each bringing something in his hand, however small, and almost every one importuning for an equivalent in return. All those in the water were naked, and only here and there, on the shore, a thin cloak of the native cloth was to be seen. Some had their faces painted black, some red; others black and white, or red and white, in the ludicrous manner practised by our clowns; and two demon-like monsters were painted entirely black. It is not easy to imagine the picture that was presented by this motley crowd, unrestrained by any authority or consideration for their visitors, all hallooing to the extent of their lungs, and pressing upon the boats with all sorts of grimaces and gestures."

A landing, it seems, could not be effected here; but this was accomplished at a short distance further, and the dense crowd of

natives who flocked to the water-side, were unceremoniously cleared away by the two black personages just mentioned, and two others fantastically dressed with pelican's feathers. This was effected by means of sticks, which they brandished about with considerable dexterity. Captain Beechey thus describes the landing:—

“The gentleman who disembarked first, and from that circumstance probably was considered a person of distinction, was escorted to the top of the bank, and seated upon a large block of lava, which was the prescribed limit to the party's advance. An endeavour was then made to form a ring about him; but it was very difficult, on account of the Islanders crowding to the place all in expectation of receiving something. The applicants were impatient, noisy, and urgent: they presented their bags, which they had carefully emptied for the purpose, and signified their desire that they should be filled: they practised every artifice, and stole what they could in the most careless and open manner: some went even farther, and accompanied their demands by threats. About this time one of the natives, probably a chief, with a cloak and head-dress of feathers, was observed from the ship hastening from the huts to the landing-place, attended by several persons with short clubs. This hostile appearance, followed by the blowing of the conch-shell, a sound which Cook observes he never knew to portend good, kept our glasses for a while riveted to the spot. To this chief it is supposed, for it was impossible to distinguish amongst the crowd, Mr. Peard made a handsome present, with which he was very well pleased, and no apprehension of hostilities was entertained. It happened, however, that the presents were expended, and this officer was returning to the boat for a fresh supply, when the natives, probably mistaking his intentions, became exceedingly clamorous, and the confusion was further increased by a marine endeavouring to regain his cap, which had been snatched from his head. The natives took advantage of the confusion, and redoubled their endeavours to pilfer, which our party were at last obliged to repel by threats, and sometimes by force. At length they became so audacious, that there was no longer any doubt of their intentions, or that a system of open plunder had commenced; which, with the appearance of clubs and sticks, and the departure of the women, induced Mr. Peard, very judiciously, to order his party into the boats. This seemed to be the signal for an assault: the chief who had received the present threw a large stone, which struck Mr. Peard forcibly upon the back, and was immediately followed by a shower of missiles which darkened the air. The natives in the water and about the boats instantly withdrew to their comrades, who had run behind a bank out of the reach of the muskets, which former experience alone could have taught them to fear, for none had yet been fired by us.

“The stones, each of which weighed about a pound, fell incredibly thick, and with such precision that several of the seamen were knocked down under the thwarts of the boat, and every person was more or less wounded, except the female to whom Lieutenant Wainwright had given protection, who, as if aware of the skilfulness of her countrymen, sat unconcerned upon the gunwale, until one of the officers, with more consideration for her safety than she herself possessed, pushed her overboard, and she swam ashore. A blank cartridge was at first fired over the heads of the crowd; but forbearance, which with savages is generally mistaken for cowardice or inability, only augmented their fury. The showers of stones were if possible increased, until the personal safety of all rendered it necessary to resort to severe measures. The chief, still urging the islanders on, very deservedly, and perhaps fortunately, fell a victim

to the first shot that was fired in defence. Terrified by this example, the natives kept closer under their bulwark; and though they continued to throw stones, and occasioned considerable difficulty in extricating the boats, their attacks were not so effectual as before, nor sufficient to prevent the embarkation of the crew, all of whom were got on board.

“Several dangerous contusions were received in the affair, but fortunately no lives were lost on our part; and it was the opinion of the officer commanding the party, that the treacherous chief was the only victim on that of the islanders, though some of the officers thought they observed another man fall. Considering the manner in which the party were surrounded, and the imminent risk to which they were exposed, it is extraordinary that so few of the natives suffered; and the greatest credit is due to the officers and crews of both boats for their forbearance on the occasion.”

Such was the termination of the Blossom's visit to Easter Island; and on a ship of war, the Seringapatam, visiting it in 1830, the effects of the fire-arms were observed. Captain Beechey gives a favourable account of the personal appearance of the natives, and particularly of the women. The practice of perforating the lobe of the ear is pursued by both sexes, the aperture when made being distended by a leaf rolled up and forced through it. To such an extent do they carry this custom, that the lobe without the ear-ring hangs dangling against the neck, and when wet has a very disagreeable appearance. It is sometimes so long as to become inconvenient; to obviate which, they pass the lobe over the upper part of the ear, or, more rarely, fasten one lobe to the other at the back of the head. A tribe of Indians of the interior of Brazil, called *Botucudos*, equally proud as those of Easter Island of ornamenting their ears, remedy this looseness by wearing a flat circular piece of wood, fixed into the aperture of the lobe by the edge, which, being commenced of small dimensions, is gradually increased as the person grows, and gives the wearer an extremely odd appearance. Besides these, they also insert a piece of wood, of the same description, into an incision in their lower lip, which, in some degree, answers the purpose of a plate.

(*To be continued.*)

WORKS IN NAVIGATION AND NAUTICAL SCIENCE.

THE following is a copy of a Memorandum, dated Admiralty Office, 15th February, 1830:—

“The Lords Commissioners of the Admiralty being desirous to extend the benefit of the Marine Surveys which have been made for the use of His Majesty's Navy, more generally among the mercantile shipping of the empire, have appointed Mr. R. B. BATE, 21, Poultry, London, to be their Lordships' Agent, for the sale of all Charts, Plans, Views, and Sailing Directions, which are published under their Lordships' orders; and he has been directed to employ proper sub-agents at the principal seaports for the same purpose.

“ All corrections, arising from surveys in progress, will be notified to the Agent, for immediate insertion ; so that the Charts and Directions in his hands will always contain the most recent and authentic information.

“ Catalogues may be had at the Agent's, stating the prices which have been authorized by their Lordships. “ J. W. CROKER.”

The Committee of Lloyd's also, with their accustomed readiness in diffusing all information of importance to navigators, continue to transmit to Mr. Bate, the notices of dangers, and similar valuable information, which it is his care to publish ; and in compliance with the directions of the Lords Commissioners of the Admiralty, Mr. Bate has secured the co-operation of the several persons named at the following out-ports, to assist him in the sale of the Admiralty Charts, from whom they may at all times be had.

Belfast,	by Mr. Robert Neill.	Leith,	by Messrs. W. Reid and
Bristol,	— Mr. John Braham.		Son.
Cork,	— Mr. Thomas Bennett.	Liverpool,	— Messrs. J. Bywater
Dublin,	— Mr. Richard Spear.		and Co.
Greenock,	— Mr. David Heron.	Plymouth,	— Mr. W. C. Cox,
Hull,	— Messrs. R. Boyle and		Devonport.
	Son.	Portsmouth,	— Mr. Geo. Stebbing.

CHARTS and PLANS.

IRELAND. *Sheet 1. East Coast, from Dublin to Lough Carlingford.* By Commander William Mudge, R.N. F.R.A.S. 1828. Price 2s. (No.97) Admiralty.

A series of charts of the Irish coast are in course of publication, from the work of Commander W. Mudge, R.N., who is now employed in surveying that Coast. They are founded on the basis of the Ordnance Survey, and are the result of very careful trigonometrical operations. This chart is the first of the series. The scale adopted for publication is three minutes and a half of longitude to the inch, or half an inch to the mile of latitude in the parallel of Dublin, which affords a liberal delineation of the coast for navigation. The limits of this chart include the space between the parallels of 53° 17' and 54° 6' N., and the meridians of 5° 30' and 6° 30' W. The portion of coast it embraces is from the Southern point of Dublin Bay as far as Analong, to the Northward of Carlingford.

IRELAND. *Sheet 2. East Coast, from Lough Carlingford to Lough Larne.* By the same. 1828. Price 2s. 6d. (No.96) Admiralty.

The Scale of this is the same as that of the foregoing. Belfast Lough, and the entrance to Lough Strangford, are included in this chart, and the opposite coast of the North Channel, falling within the limits of the chart, from the Calf of Man to Port Patrick, is given in outline, not having yet been surveyed in a manner deserving of confidence. A most valuable feature distinguishes this chart from the preceding, consisting in the height of the principal hills near the coast being inserted on them—an important assistance to the navigator ; and it includes the space between the parallels of 54° 3' and 54° 50' N., and the meridians of 4° 33' and 6° 3' W.

GAMBIER'S GROUP, (*Inhabited.*) Surveyed by Captain F. W. Beechey, R.N., F.R.S. 1826. Price 1s. 6d. (No.2359) Admiralty.

This is a chart of one of those groups of the Low Archipelago in the Pacific Ocean, in lat. $23^{\circ} 10' S.$ and long. $135^{\circ} W.$ visited by His Majesty's Ship Blossom, on her way to Beering's Strait. The scale on which it is drawn is nearly that of a mile to one inch. The outer limits of the reef surrounding the island is carefully traced, and the chart contains likewise a view of the islands forming the group. It is valuable to ships visiting the islands, as well as on account of the means it will afford hereafter of detecting the progress in the growth of the coral rocks.

BELIZE HARBOUR, on the Coast of Honduras. By Commander R. Owen, in His Majesty's Ship Blossom. 1830, and Mr. John Fremby, Mate, R.N. 1829. Price 1s. 9d. (No.748) Admiralty.

A survey of the extensive harbour of Belize and its intricate entrance had long been desired for the use of our ships, and this amply supplies the deficiency. It is one of the various surveys of Captain Owen, and, with the assistance of Mr. Fremby's previous operations, is replete with soundings. The scale is that of a mile to the inch, and the chart includes the reefs to the southward, as far as Bluefield's Range.

PRINCE'S, ST. THOMAS, and ANNO BON ISLANDS, on the Coast of Africa. By Commander T. Boteler, R.N. 1829. Price 2s. 8d. (No.1227) Admiralty.

Here is "multum in parvo," and that of a useful description. Charts of the above islands in separate compartments, and a general one showing their relative positions on the coast, are contained in this sheet. In addition to these, it contains the plans of West and St. Antonio Bays, of Prince's Island, besides those of the anchorages off St. Thomas and Anno Bon, all from the work of the late Commander Boteler, who died while performing the surveys in His Majesty's Ship Hecla. A view is also given, on the same sheet, of Princes Island, and the Island of St. Thomas, and it is altogether a desirable chart for our African traders.

THE VIRGIN ROCKS, and the Surrounding Bank. Surveyed by Mr. Edward Rose, Master of His Majesty's Ship Tyne. By direction of Vice-Admiral Sir Charles Ogle, Bart. 1829. Price 6d. (No.611) Admiralty.

A little chart showing the relative position of these rocks, with respect to the coast of Newfoundland. Sufficient of this coast has been introduced for the purpose, as well as a plan on an extended scale, showing the soundings on the bank whereon the rocks are situated. Our American traders must not plead ignorance after this.

A series of charts of the Persian Gulf have lately been completed and published by Captain Horsburgh, from the surveys of officers employed by the Hon. East India Company. They consist of

eight sheets, which include all the shores of this inland sea. The scale adopted is five minutes of longitude to the inch.

The Entrance to the GULF OF PERSIA, and Coast of ARABIA, from Ras Goberindee to Muscat. Surveyed by Com^r. J. B. Brucks, and Lt. S. B. Haines, H.C. Marine. 1828. E. I. Company.

The limits of this chart are from lat. $25^{\circ} 13'$ to $27^{\circ} 11'$ N. and long. $55^{\circ} 14'$ to $56^{\circ} 47'$ E. The island of Kishm, and the intricate channels between it and the Persian shore, is the only part of the Gulf contained in this chart; the western part of the promontory and the Quoin Islands being supplied by the following sheet.

Part of the Coast of ARABIA, in the GULF OF PERSIA. Surveyed by Lieuts. J. M. Guy and G. B. Brucks, assisted by Lieut. R. Cogan, H. C. Marine. 1822. Sheet 1st and 2d. E. I. Company.

The Arabian shore between the Quoins and the town of Abbothubbee, is included in this chart; the latter place being on the meridian $54^{\circ} 32'$ E. in lat. $24^{\circ} 30'$ N. The second sheet is a continuation of the Arabian shore as far as Zaboot, in long. $52^{\circ} 35'$ E.

Trigonometrical Survey of the ARABIAN or Southern side of the PERSIAN GULF. By Lieuts. J. M. Guy and G. B. Brucks, Hon. C. Marine. Sheet 3d, 1824. E. I. Company.

The coast comprised in this sheet is from Jibbal Barrarah to the Warden Islands, on the western side of the promontory terminated by Ras Anfeer.

Arabian Coast of the GULF OF PERSIA. Sheet 2 and 4. E. I. Company.

This chart includes the island and harbour of Bahrein, and the interior coast between the Warden and Biddulph Islands; the limits of it extend from lat. $25^{\circ} 7'$ to $27^{\circ} 42'$ N. and long. $49^{\circ} 12'$ to $51^{\circ} 14'$ E.

BOOKS.

ASTRONOMISCHE BEOBACHTUNGEN AUF DES HERRN CAPITAIN Otto Von Kotzebue zweiten Reise um die Welt in den Landungsplätzen angestellt Von E. W. Preuss. Herausgegeben Von W. Struve, Professor der Astronomie in Dorpat. 1830.

The Astronomical Observations of Captain Kotzebue's second voyage round the world, edited by Professor Struve. These observations were made in the years 1823-1826, during the voyage of the *Predpriatie*, under the command of Captain Kotzebue, by M. Preuss, whose good qualities as an astronomer are highly spoken of by Professor Struve. M. Preuss has availed himself of Professor Schumacher's valuable tables, which were hastened expressly for this voyage. The circumstances under which the observations were made, as well as a description of the instruments used, are detailed in this work. The latitude and longitude of the following places are given:—Talcahuana, Otaheite, Kamtschatka, San Francisco, Sandwich Islands, Sitka in Russian America, and Manilla.

DIVERSES METHODES pour connaitre à la Mer sans Observations Nautiques l'avance et le retard absolu des Chronometres sur le temps moyen du Lieu ou ils out été réglés. Londres. Wake. 1832.

This title wears so enticing an appearance, that we took up the work full of the hopes of being able to present our nautical readers with some of its promised treasures. "Nous attestons et nous jurons sur notre honneur," are new words in mathematical reasoning, that the author has freely introduced; and, finding nothing more to the purpose, we laid the work aside in despair.

ON ENCKE'S COMET. Encke's Dissertation contained in Nos. CCX. and CCXI. of the Astronomische Nachrichten. Translated from the German by G. B. Airy, M.A. F.R. Ast. Soc., F.G.S., &c. Cambridge. Smith. 1832.

This is a well-timed translation of the particulars relative to the observations made on this Comet, at the various observatories of Europe, when it last appeared in 1828. In addition to a table shewing its right ascension and declination, from January to August of the present year, another is introduced, shewing the time of its setting, as well as that of the sun, from January till May. According to this table, the latest time of its setting at Berlin, after the 4th of March, will be 23 minutes after nine in the evening; and although its distance from the earth in February was four times greater than in 1828, the translation says, that "after its passage, May 4 until June, the Comet comes nearer to the earth than it has done upon any former appearance. Though it does not arrive at the maximum of its possible brightness, and of its apparent magnitude, at the same time, yet it will be easily found, even with the naked eye, if its place be but tolerably known."

The following remarks by Professor Airy have been prefixed to his translation:—

"Encke's Comet is undoubtedly one of the most remarkable bodies belonging to our system; and the conclusions which have been derived from its successive appearances are among the most important, with regard to the physics of the universe in general, as well as to astronomical science in particular, which the present century has produced. The methods, by which the necessary calculations are made, have never been practically employed in this country, and are little known, even to those among us who are acquainted with the ordinary operations of physical astronomy. This Essay is, I believe, the first publication which contains a complete abstract of Encke's theory, and its comparison with observation. If by circulating a translation I shall excite the curiosity of one reader to possess himself more completely of the theory and the facts of this singular body, I shall think my trouble well repaid."

The history of Encke's comet is thus related by Professor Airy:—

"This comet was first seen by Mechain and Messier, in 1786; but they observed it only twice, and were therefore unable to determine

the elements of its orbit. Miss Herschell discovered it in 1795, and it was observed by several European astronomers. In 1805, Pons, Huth, and Bouvard, discovered it on the same day. In 1819, Pons discovered it again. Hitherto it was supposed that the four comets were different; but Encke (*Bode's Astron. Jahrb.* 1822,) not only pointed out their identity, but shewed that an elliptic orbit agreed better with each set of observations than a parabola. In *Bode's Astron. Jahrb.* 1823, (published in 1820,) Encke gave new calculations of the perturbations, &c. and, as there still appeared to be some unknown cause of uncertainty, he gave two ephemerides for its appearance in 1822. This was observed by Rumker in New South Wales; and Encke, after discussing his observations in the *Astron. Jahrb.* 1826, concluded that the supposition of a resisting medium was necessary, to reconcile all the observations. The comet was again generally observed in Europe, in 1825 and 1828: and the circumstance of the last appearance were particularly favourable for determining the influence of Jupiter's mass, and the absolute amount of the retardation, which the other observations had left undetermined."

The AUSTRALIA DIRECTORY, Vol. I. containing Directions for the Southern Shores of Australia, from Cape Leeuwin to Port Stephen's, including Bass' Straits and Van Diemen's Land. Compiled from Documents in the Hydrographic Office. Admiralty. London. 1830.

A work of this description on Australia was much wanted; and more so lately, as the number of vessels, which annually frequent that distant part of the world, has much increased. The present volume, which is the first of the series for these coasts, is intended for ships going out, and contains descriptions of the coast, compiled from the works of Vancouver, Flinders, King, and Freycinet, besides the remarks of several naval officers. Much information is given on the nature of the winds and weather at different seasons of the year, both on the coasts of Australia and Van Diemen's Land. From the character of the survey that was made of this part of the world, much of its hydrography is unknown, and can only be brought to light by accident in the absence of a more minute investigation; but for the portion of coast, which is included in these directions, it is the most complete, and, probably, the only work yet published. We extract the concluding paragraph to the introduction, which cannot too frequently be pointed out to the attention of nautical men:—

"There are no charts of any part of the world so accurate, and no directions so perfect, as not to furnish frequent occasions for revision and amendment; how much more then, in remote regions, like Australia, should seamen consider it to be one of their most urgent duties to examine every questionable point, and to record every useful fact. Insulated remarks may appear to be of little value, yet, when transmitted to one general deposit, they either confirm what was doubtful, or serve as connecting links to former details, or become useful hints for future inquiry."

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

The Nautical Almanac.—The appointment of superintendent of the *Nautica*. Almanac has been lately given to Lieutenant W. S. Stratford, R.N., a gentleman who has devoted much of his time to astronomical pursuits. Since the death of Dr. Young this national publication had fallen into disrepute, arising from the numerous errors which have been found in it, to the manifest risk of navigators, and the discredit of the first maritime nation in the world. The work evidently required to be newly-modelled, to keep pace with the present advanced state of astronomy. For the purposes of the navigator, it was very imperfect; in the Observatory it was next to useless, and consequently astronomers had recourse to foreign publications. In this state of things, the Astronomical Society of London were called on by His Majesty's government to suggest whatever improvements that body might consider necessary that it should undergo. In compliance with this application, a committee, consisting of the first scientific astronomers and professional men of England, was convened, to deliberate on the same; and their report will be found in the last volume of the *Astronomical Society's Transactions*.

The following extract from the *Athenæum*, alludes to this report in the proceedings of the Astronomical Society:—

“The President next informed the meeting, that, having forwarded the report of the committee appointed to take into consideration the state of the *Nautical Almanac*, with a view to its improvement, in compliance with the request of the Lords Commissioners of the Admiralty, he had received in answer a letter from Mr. Barrow, which, with their permission, he would read. The letter stated,

that the Lords Commissioners of the Admiralty had given directions that the Astronomer Royal should carry into effect the various alterations and additions in the *Nautical Almanac* for 1834; and requested, that twenty copies of the report might be sent to them, for the purpose of being forwarded to the various Commanders-in-Chief at home, as well as on foreign stations. It also expressed the high sense entertained by their Lordships of the great pains and care bestowed on the subject which had been referred to the consideration of the committee; and concluded, by expressing their Lordships' thanks for their valuable suggestions towards the advancement of navigation, and the interests of astronomy in general.”

The *Athenæum* further observes, that “Looking on this production as a national work, we consider it alike honourable to the leading members of that society from which it has emanated, highly important to the state, and a source of congratulation to our mariners generally;” in which we cordially agree.

The suggestions of this committee were ordered to be adopted forthwith; and as the volumes of the *Nautical Almanac* were already printed for three years in advance, that for the year 1834 was directed to be drawn up according to the proposed alterations, in which much new matter will be found, and the former modified, and put into a less troublesome shape.

Soon afterwards, Lieutenant Stratford was appointed superintendent of the *Almanac*, for which duty he had been pretty well prepared by a series of about ten years gratuitous service as secretary to the Astronomical Society; and since his appointment he has discovered many errors in the work, which have been published. From the host of science and talent which was employed on this occasion, the

new Nautical Almanac will be found to meet all the wants both of the navigator and the astronomer, in the most complete and ready manner.

The following persons formed the committee abovementioned:—

- *Professor Airy,
Right Honorable Lord Ashley,
C. Babbage, Esq.
- *F. Baily, Esq.
P. Barlow, Esq.
- *Captain F. Beaufort, R.N.
Captain F. W. Beechey, R.N.
Lieut.-General Sir T. M. Brisbane,
K.C.B.
Right Reverend Bishop of Cloyne,
Lieut.-Colonel Colby, R.E.
A. De Morgan, Esq.
Honorable Captain Dundas, R.N.
Davies Gilbert, Esq. P.R.S.
Dr. Gregory,
Captain Basil Hall, R.N.
Professor Hamilton.
- †T. Henderson, Esq.
- †*J. F. W. Herschel, Esq.
Captain Heywood, R.N.
Captain James Horsburgh,
Reverend Doctor Inman,
Captain Kater,
Doctor Lee,
J. W. Lubbock, Esq.
T. Maclear, Esq.
Reverend G. Peacock,
Reverend Doctor Pearson,
- *J. Pond, Esq.
E. Riddle, Esq.
Professor Rigaud,
- *Reverend Doctor Robinson,
Reverend R. Sheepshanks,
Captain Shirreff, R.N.
Captain W. H. Smyth, R.N.
- *Sir James South, *President*.
- *Lieutenant W. Stratford, R.N.
- *Professor Struve,
Doctor Tiarks,
E. Troughton, Esq.
J. Vrottesley, Esq.

* Members who formed the sub-committee.

† Have since received the honour of Knight Companion of the Guelphic Order.

† Since appointed astronomer at the Cape of Good Hope Observatory.

The late Captain Henry Foster.—
His Royal Highness the Duke of
Sussex, the President of the Royal

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Society, at the last anniversary meeting of that body, noticed the loss of the late Captain Foster in the following terms:—

“Captain Henry Foster was a member of the profession which, under all circumstances, is so justly celebrated for activity and enterprise, and which, when wanting the stimulus of war, has on many occasions lately distinguished itself by the zealous and successful cultivation of those studies, and the practice of those observations, which are so essentially connected with the improvement of navigation. He accompanied Captain Basil Hall, in the *Conway*, in his well-known voyage to South America, and assisted him materially in his pendulum and other observations. He afterwards joined Captain Parry in the second of his celebrated voyages; and at Port Bowen, and other stations within the Arctic Circle, he made, with the assistance of Captain Parry and others, a most valuable and extensive series of observations upon the diurnal variation, diurnal intensity and dip of the magnetic needle, and upon other objects connected with terrestrial magnetism and astronomical refractions, which formed an entire fourth part of our *Transactions* for 1826, and was printed at the especial expense of the Board of Longitude. For these papers he received the Copley Medal; and the Lords of the Admiralty acknowledged their sense of the honour which was thus conferred upon the profession to which he belonged, by immediately raising him to the rank of Commander, and by appointing him to the command of the *Chanticleer*, upon a voyage of discovery and observation in the South Seas. It was during the latter part of this voyage that he perished by an unfortunate accident; but I am happy to say, that the public is not likely to lose altogether the benefit of his labours, and that he has left behind him an immense mass of observations of various kinds, which the Lords of the Admiralty have confided partly to this Society, and partly to the Astronomical Society, with a view to their publica-

tion in such a form as may best serve the interests of science, and may most tend to establish the character and fame of their lamented author."

Royal Naval College: Prize Medals.—At the examination of the students of the Royal Naval College, previous to the last winter vacation, the first medal was awarded to Mr. Leopold George Heath, and the second to Mr. Frederick Thomas, for their progress in mathematics. The medals were presented to the young gentlemen on the 20th December, in the presence of Admiral Sir Thomas Foley, G. C. B., Commissioner Sir Michael Seymour, Captain W. Loring, R. N., the Lieutenant-Governor, and Captain P. Raimier of His Majesty Sloop Britannia.

Light Houses.—The Elder Brethren of the Trinity House have given a proof of the high sense they entertain of Lieutenant Denham's services in the present survey of the Bristol Channel. Lieut. Denham is conducting a minute trigonometrical survey of that dangerous channel, by the direction of the Lords Commissioners of the Admiralty; and, in the course of his operations, has made several valuable suggestions for the improvement of its navigation; among which are those of determining the site of the intended lights on Nash Point, and improving the lights of the Bridgewater entrance. In testimony of their approbation of Lieut. Denham's judicious arrangements of these lights, and for the encouragement of similar proposals towards perfecting the navigation of our coasts, which is their peculiar care, the Elder Brethren of the Trinity House have presented him with a handsome piece of plate of the value of 30 guineas.

Captain Graah.—On the 3d of Nov. Captain Graah, of the Danish Royal Navy, returned to Copenhagen from his second voyage along the coast of Greenland, without having passed much further to the northward of the limits of his former journey, but having made

much interesting discovery. The Royal Antiquarian Society of Denmark, with a view of promoting discovery in Greenland, has directed an annual sum, to be bestowed on those who already have, or hereafter may, find any ruins in that country. It is not unlikely that this resolution of the society may be attended with some interesting results. The Geographical Society of Paris has presented Captain Graah with their gold medal, accompanied by their diploma, for his indefatigable attempts in penetrating along the coast of Greenland.

New Light at Guernsey.—A new light has been placed on the Round House, in the principal harbour of this island, for the security of vessels entering the harbour from either of the Russel passages. The whole particulars of this light will appear in our next number.

Detonating Lock.—Mr. N. Waterbury, of 26, New Castle-street, Strand, has invented a new lock on the detonating principle, intended for firing ships' cannon. This machine is comprised in a small brass case, which is readily attached to the priming field, and is fired by a lanyard, in the same manner as practised on board of His Majesty's Ships, without interfering with the line of sight. The lever by which the detonating powder is fired, is very powerful, and, as it falls immediately over the touchhole of the gun, the inventor has given it a slight horizontal motion, by which it slips aside after falling, leaving the vent free to be stopped. One of the principal merits of this invention consists in the application of small paper cases, for containing the detonating powder, and which may be used with the common priming tube, or with powder alone. This lock is applicable to artillery of all descriptions, and, should it be contemplated to introduce the detonating principle into the government service, Mr. Waterbury's invention is well worthy of consideration.

The figures express the number of guns mounted.—S.V. signifies steam vessel.
Ships' names in italics are employed in surveying.

- Actæon**, 26—Hon. F. W. Grey, 20th Oct. Adriatic.
- Ætwa**, 6—Com. E. Belcher, 28th Dec. sailed for *Gambia*.
- African**, S.V. 1—Lt. J. Harvey, Med. Alban, S.V.—Lieut. H. Walker, (a) 29th Dec. *Marseilles*.
- Alert**, 18—Com. J. C. Fitzgerald, *Sheerness*.
- Alfred**, 50—Capt. R. Maunsell, 1st Dec. at *Malta*.
- Alligator**, 28—Capt. G. R. Lambert 26th Nov. Sailed for *Rio*.
- Algerine**, 10—Com. Hon. J. F. F. De Roos, 15th Nov. Left *Cape for Mauritius*.
- Arachne**, 18—Com. W. G. Agar, 20 Oct. Sailed from *Madeira for Teneriffe*.
- Ariadne**, 28—Capt. C. Phillips, 18th Nov. at *Barbadoes*.
- Asia**, 84—Capt. P. Richards. Flag of Adml. Parker, 11th Jan. *Tagus*.
- Astrea**, 8—Capt. W. King, *Falmouth*.
- Badger**, 10—Com. G. F. Stowe, Nov. at *Mauritius*.
- Barham**, 50—Capt. H. Pigot, 3d Jan. at *Malta*.
- Beagle**, 10—Com. R. Fitz-Roy, 27th Dec. Sailed for *S. America*.
- Belvidera**, 42, Capt. Hon. R. S. Dundas, Oct. in *Archipelago*.
- Blanche**, 46—Capt. A. Farquhar, K.H. C.B. 27th Nov. at *Bermuda*.
- Blossom**, 16—Com. R. Owen, 27th Dec. at *Port Royal, Jamaica*.
- Brisk**, 3—Lieut. E. H. Butterfield, 15th Dec. Sailed for *Gambia*.
- Britannia**, 120—Capt. P. Rainier, *Guardship, Portsmouth*.
- Briton**, 46—Capt. J. D. Markland, C.B. *January, Tagus*.
- Caledonia**, 120—Capt. J. Hillyar. *Flag-ship, Plymouth*.
- Challenger**, 23—Capt. C. H. Freemantle, Sept. at *Madras*.
- Champion**, 18—Com. F. V. Cotton, Nov. at *Jamaica*.
- Charybdis**, 3—Lieut. R. B. Crawford, 26th Dec. Sailed for *Africa*.
- Childers**, 18—Com. R. Deans, 7th Feb. Sailed for *Lisbon*.
- Clio**, 18—Com. J. J. Onslow, *Callao*.
- Columbia**, 2, S.V.—Lieut. R. Ede, coast of *England*.
- Columbine**, 18—Com. O. Love, 20th Nov. *Jamaica*.
- Comet**, 18—Com. A. A. Sandilands, *New South Wales*.
- Comet**, S.V.—*Woolwich*.
- Confiance**, S.V. 2—Lieut. H. F. Belson, 17th Feb. *Thames*.
- Conflict**, 12—Lieut. G. Smithers, Sept. at *Ascension*.
- Conway**, 28—Capt. Eden, *Chatham*.
- Cordelia**, 10—Com. C. Hotham, Jan. at *Tripoli*.
- Cracker**—1st Lieut. J. P. Roepel, Feb. *Portsmouth*.
- Crocodile**, 28—Capt. J. W. Montagu, Sept. *Madras*.
- Cruizer**, 18—Com. J. Parker, July, *Swan River*.
- Curaçoa**, 26—Capt. D. Dunn, 7th Jan. Sailed for *East Indies*.
- Curlew**, 10—Com. H. D. Trotter, Oct. at *Mauritius*.
- Dispatch**, 18—Com. E. A. Frankland, Feb. *Sheerness*.
- Donegal**, 50—Capt. J. Dick, 8th Nov. *Malta*.
- Dryad**, 42—Capt. J. Hayes, C.B. 22d Nov. *Fernando Po*.
- Druid**, 46—Capt. G. W. Hamilton, C.B. Dec. *Bahia*.
- Dublin**, 50—Capt. Right Hon. Lord J. Townsend, 2d Dec. at *Rio*.
- Fairy**, 10—Com. W. Hewett, *Sheerness*.
- Favourite**, 18—Com. J. Harrison, 6 Dec Sailed from *Sierra Leone for Congo*.
- Ferret**, 10—Com. E. Wodehouse, Nov. *Archipelago*.
- Firefly**, 2—Lieut. J. M'Donnell, 7th Sept. *Bermuda*.
- Firebrand**, S.V. Lt. T. Baldock, *Medit.*
- Flamer**—S.V. Lieut. R. Bastard.
- Fly**, 10—Com. P. M'Quhae, 26th January. Sailed.
- Ganges**, 84—Capt. G. Burdett, Nov. *Malta*.
- Gannet**, 18—Com. M. H. Sweney, Nov. *Barbadoes*.
- Harrier**, 18—Com. H. L. S. Vassal, *Plymouth*.
- Hyacinth**, 18—Com. W. Oldrey, 21st Dec. at *Port-au-Prince*.
- Imogene**, 28—Capt. P. Blackwood, 28th Nov. Sailed for *S. America*.
- Investigator**, 16—Mr. G. Thomas, *Woolwich*.
- Isis**, 50—Capt. J. Polkinghorne, 26th Dec. Sailed for *Gambia*.
- Jaseur**, 18—Com. F. Harding, Sept. *Seychelles*.
- Kangaroo**, 3—Lieut. J. Hookey, 31st Dec. at *Nassau*.
- Leveret**, 10—Lieut. W. F. Lapidge, coast of *England*.
- Lightning**, 18—Com. T. Dickinson, *Cape Frio*.
- Lightning**, S.V.
- Madagascar**, 46—Capt. E. Lyons, 7th Feb. Sailed for *Mediterranean*

- Magicienne**, 24—Capt. J. H. Plumridge, 12th Nov. Sailed for Rio.
Magnificent, 4; Lt. J. Paget, Port Royal
Maidstone, 42—Capt. C. M. Schomberg, Nov. Simon's Bay. Flag-ship.
Mastiff, 6—Lieut. J. Wolf, Morea.
Melville, 74—Capt. H. Hart, 27th Jan. Sailed for East Indies. Flag-ship. V.-Adm. Sir J. Gore, K.C.B.
Messenger, S.V.—Lieut. B. Aplin, Woolwich.
Meteor 8—Com. R. C. Copeland, Morea.
Meteor, S.V. 2—Lt. W. H. Symons, Woolwich.
Minx, 3—Lt. J. Simpson, Port Royal.
Nautilus, 10—Com. Rt. Hon. Lord G. Paulet, Feb. 10. Sailed for Oporto.
Nimble, 5—Lieut. J. M. Potbury, Bahama Islands.
Nimrod, 20—Com. S. Radford, Plym.
Ocean, 80—Capt. S. Chambers. Flag-ship, Sheerness. V.-Adm. Sir J. P. Beresford, Bt. K.C.B.
Onyx, 10—Lt. A. B. Howe, Cork.
Orestes, 18—Com. W. N. Glasscock, Cork.
Pallas, 42—Capt. M. H. Dickson, 5th Dec. at Barbadoes.
Pearl, 20—Com. R. Gordon, Portsm.
Pelican, 18—Com. J. Gape, Oct. Ionian Islands.
Pelorus, 18—Com. R. Meredith, 2d Jan. Sailed for Cape.
Pickle, 5—Lieut. T. Taplen, Nassau.
Pike, 12—Lt. A. Brooking, coast Engl.
Pincher, 5—Lt. W. S. Tulloh, Bahamas.
Philomel, 10—Com. W. Smith, Jan. Algiers.
Plumper, 12—Lieut. T. Creser, Dec. River Gambia.
Pluto, S.V.—Lieut. G. Buchanan, 25th Dec. Sailed for Gambia.
Prince Regent, 120—Capt. J. W. D. Dundas, Portsmouth.
Procris, 10—Com. J. T. Talbot, Malta.
Pylades, 18—Com. E. Blankley, 2d Dec. Sailed from Rio.
Racehorse, 18—Com. C. H. Williams, Oct. Santa Martha.
Rainbow, 28—Capt. Sir J. Franklin, Knt. Malta.
Raleigh, 18—Com. A. M. Hawkins, Jan. Smyrna.
Ranger, 28—Capt. W. Walpole, Dec. at Barbadoes.
Rapid, 10—Com. C. H. Swinburne, Adriatic.
Rattlesnake, 28—Capt. C. Graham, 2d Dec. Sailed from Rio.
Raven, 4—Lieut. W. Arlett, Africa.
Recruit, 10—Lt. T. Hodges, N. Sea.
Revenge, 78—Capt. D. H. Mackay, Jan. Tagus.
Rose, 18—Com. E. W. Pilkington, Nov. at Port Royal.
Royalist, 10—Lieut. R. N. Williams, Oporto.
St. Vincent, 120—Capt. H. F. Senhouse, Malta. Flag-ship V.-Adm. Sir H. Hotham, K.C.B., &c.
Samarang—28, Capt. C. H. Paget, 13th Dec. Sailed from Bahia.
San Josef—110, Captain R. Curry, Plymouth. Flag-ship. Admiral Sir M. Dixon, K.C.B.
Savage, 10—Com. Right Hon. Lord E. Russell, Cork.
Sapphire, 28—Capt. Hon. W. Wellesley, 29th Nov. at Bermuda.
Scylla, 18—Com. Hon. G. Grey, Dec. at Malta.
Seringapatam, 46—Capt. Hon. W. Waldegrave, Oct. at Coquimbo.
Skipjack, 5—Lieut. W. Shortland, Bahamas.
Southampton, 52—Capt. J. M. Laws, July, at Trincomalee.
Sparrowhawk, 18—Com. D. Mayne, 29th Nov. at Bermuda.
Speedwell, 5—Lt. W. Warren, Nassau.
Stag, 46—Capt. Sir T. Trowbridge, Cork.
Sulphur, 8—Com. W. T. Dance, Australia, King George Sound.
Swan, 10—Lieut. J. E. Lane, N. Sea.
Sylvia, 1—Lieut. T. Spark, N. Sea.
Talavera, 74—Capt. S. Brown, Sheerness. Guardship.
Talbot, 28—Capt. R. Dickinson, C.B., Oct. Simon's Bay.
Tweed, 28—Com. A. Bertram, 6th Jan. Sailed for West Indies.
Tyne, 28—Capt. C. Hope, 4th Dec. off Pernambuco.
Undaunted, 46—Capt. E. Harvey, Oct. at Mauritius.
Victor, 18—Com. R. Russell, Jan. Lisbon.
Victory, 104—Capt. H. Parker. Flag-ship. Admiral Sir T. Foley, G.C.B. Portsmouth.
Viper, 6—Lieut. H. James, 20th Feb. Sailed for Jersey.
Volage, 28—Capt. Right Hon. Lord Colchester, Pacific.
Warspite, 76—Capt. C. Talbot. Flag-ship. Adm. Sir T. Baker, K.C.B. Rio.
Winchester, 52—Capt. Rt. Hon. Lord W. Paget, 3 Jan. at Barbadoes. Flag-ship. Vice-Adm. Sir E. G. Colpoys.
Wolf, 18—Com. W. Hamley, 25th Nov. Rio.
Zebra, 18—Com. D. De Saumarez, July, at Madras.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LIST, 1832.

VESSELS' NAMES.	WHERE BELONGING.	MASTERS NAMES.	WHERE LOST.	WHEN LOST.	No. of Lloyd's List.	REMARKS.
1 Acors		Heard	Near Sligo	3 Jan.	6705	7 Cargo most saved.
2 Adventure			Entr. of Thames	12 Feb.	6716	Crew saved.
3 Albion		Sims	Hull	23 Jan.	6711	By fire.
4 Almorch		Ward			6712	Doubtful.
5 Apollo	Hull	Barton	Anderby	27 Jan.	6712	Cargo, &c. saved.
6 Argoey		Randale	Off Corunna	17 Jan.	6716	Found, crew saved.
7 Ben. Milliken		Paul	Co. Sable	4 Dec.	6705	Crew saved.
8 Bittern		Dowling	C. Ireland	Jan.	6713	
9 Brilliant		Cyder	Marg. Sand	30 Dec.	6704	Cargo part saved.
10 British Tar		Moore	Pr. Edw. Island	6 Dec.	6709	Crew saved.
11 Brothers	Whitehaven	Carter	Gr. N. Wall	3 Feb.	6714	Crew saved.
12 Brothers	Sunderland		Cape Race		6710	Crew part saved.
13 Cassandra			Lough Foyle	24 Jan.	6712	Crew saved.
14 Caator		Mc Gilton	Duudalk	22 Jan.	6711	2 Crew saved.
15 Chester		Parry	Langoess Point	12 Jan.	6709	Crew saved.
16 Cleopatra		Hewett	Islay Island	2 Feb.	6716	Doubtful.
17 Crown		Dixon	C. Wexford	4 Jan.	6715	Crew, 10 drowned.
18 Dolphin			Tralles	5 Feb.	6715	By fire.
19 Duke of Wellington	Jersey	Alexander	Mediterranean	25 Dec.	6708	10 Capsized, crew sav.
20 Eagle		Duncan	No. Co. Ireland	28 Dec.	6704	Crew drowned.
21 Edw. Walker		Mc Kenzie	Digby, N. S.	27 Dec.	6712	Only 2 saved.
22 Elizabeth	London		Lat. 43. Lon. 46.	14 Dec.	6704	Abandoned, doubtf.
23 Eliza Dick		Broomhead		4 Nov.	6704	From Marstrand ; unheard of since.
24 Enterprize			Off Deal	29 Jan.	6712	Wreck, picked up.
25 Experiment		Gabsley	At Sea.		6711	Reported founder'd
26 Falcon		Littlewort	Off Villanova	11 Dec.	6709	Crew, 3 drowned.
27 Felicity			C. of Wales	1 Feb.	6714	Crew saved.
28 Forest			North Sea	14 Jan.	6716	Abandoned.
29 Friends	Newcastle	Robson	Off Spurn Point	27 Jan.	6712	Crew saved.
30 Geo. Canning	Liverpool	Allyn	Off New York	14 Jan.	6714	Crew & pass. saved
31 Gertrude		McDonnell	At Sea.	9 Jan.	6709	Crew saved.
32 Greyhound		Twaddie	Goree Id. N. Sea	17 Jan.	6710	Crew & car. saved.
33 Harmony		Edwards	Off Margate	25 Jan.	6711	Everything saved.
34 Hebe			Island of Sanday	14 Jan.	6708	Crew saved.
35 Hermes		LeMesurier		22 Dec.	6704	From Haven ; not heard of since.
36 Hope	Waterford		Goodwin Sands	25 Jan.	6712	All lost.
37 Ida		Phillips	At Sea	4 Jan.	6712	Abandoned.
38 Isabella			Ballinskellege, B.	4 Jan.	6705	Cargo, &c. saved.
39 John and Ann		Eason	North Sea	20 Oct.	6714	Not heard of since.
40 John & Elis.	Poole		Ct. of Portugal	14 Jan.	6711	Crew sup. drowned
41 Johns		Scotland	Ct. Irlnd., S. Rock	26 Jan.	6712	Cw. & pt. car. saved
42 Kalleylne			Ct. of Galway	5 Jan.	6705	All lost.
43 L. Wellington			St. Lawrence	29 Nov.	6705	Crew saved.
44 Majestic			At Sea, lat. 49. lon. 39.	14 Jan.	6711	Crew, 5 lost, 8 saved.
45 Margaret		Walters		28 Nov.	6710	Crew saved.
46 Maria		McLeod	Magdalen, Isd.	14 Nov.	6705	Crew saved.
47 Maria		Fron	St. Law. Mediterranean	26 Dec.	6709	Taken into Gib. B.
48 Mersey		Ball	St. Geo. Channel	7 Jan.	6705	Cw. & pt. cg. saved
49 Miles Stand-		Arnold	Abaco Island	19 Dec.	6715	Crew, 1 only saved
50 Nancy fish		McKenzie	Ct. Ireland, near Skerries	28 Dec.	6704	Crew saved.
51 Nw Diligence		Waile	Dundrum, B.	7 Jan.	6706	Crew brot. home in
52 New John			Off St. Paul's, G. St. Law.	Dec.	6704	Janu.
53 Orb		Coates	Whiting, S. North Sea	12 Feb.	6716	Crew saved.
54 Pirate		Sutherland	Ct. of Scotland, Aberdeen	6 Feb.	6715	Crew saved.
55 Regent Pack.			Cattegat	29 Dec.	6705	
56 Red		Jno. Harpy	Brazil Coast	27 Nov.	6709	Crew saved.
57 Relief		Ellison	Cape Breton	Nov.	6705	Cargo part saved.
58 Royal Charl.		Hay	Ile Re	5 Feb.	6715	Crew drowned.
59 Sally		Nicholson	Ct. Cornwall	1 Feb.	6714	Crew saved.
60 Sampson			Near New York	22 Dec.	6710	
61 Scipio		Mc Fie	Tory, Ireland	31 Jan.	6713	Crew saved.
62 Shark	Wexford		Dublin Bay	3 Feb.	6714	Crew saved.
63 Sovereign		Light	Tbames	4 Feb.	6714	Run foul of.
64 Symmetry		Dare	Coast of France	13 Jan.	6710	Crew saved.
65 St. Cyr			West Indies	Dec.	6711	Crew, 8 saved.
66 Telemachus		Hick	Near Rye	10 Jan.	6707	
67 Thetis	Granada		West Indies	4 Dec.	6711	Run down.
68 Thomas and Eleanor	Sunderland		Portsey	28 Jan.	6714	
69 Volante			N. Brunswick	Dec.	6712	Crew, 3 drowned.
70 Wm. & Anne			West Indies	5 Dec.	6711	Crew saved.
71 William and Elizabeth				27 Sept.	6730	Crew saved.
72 Young Saml.		Le Seur	St. Lawrence	24 Dec.	6711	Crew saved.

Errata in the Nautical Almanac, 1832.—Errata in the Nautical Almanac and Astronomical Ephemeris for 1832, (in addition to those inserted at p. xvii. of the Nautical Almanac for 1833.) Page 95, The Sun, Aug. 29, III^h, for 49° 42' 53" read 49° 32' 53".—Page 122, Nov. 7, Right Ascens, for 44^h 50^m 33^s, 1, read 14^h 50^m 33^s, 1.

Astronomer at the Cape.—Mr. T. Henderson, the newly appointed astronomer at the Observatory of the Cape of Good Hope, proceeded to his destination in His Majesty's Ship Melville, bearing the flag of Vice-Admiral Sir John Gore, K.C.B. The Melville sailed from Portsmouth on the 22d Jan. and having been detained by contrary winds, finally left Falmouth on the 27th.

Rocket Signals by Lieutenant Hughes, R.N.—Experiments were made lately on the Chain Pier at Brighton, in the presence of the Duke of Sussex, and many other persons of distinction, of a new code of rocket signals, invented by Lieutenant Hughes, R.N., and intended to supersede the lanterns at present used for that purpose in the navy. No less than seven Admirals were present—Sir Robert Otway, Sir Pulteney Malcolm, Admiral Thompson, and four others. The signals were fired from two batteries; that on the Pier being directed by Lieut. Hughes, and that at the Bear's Hide, near Newhaven, by Lieutenant Crispe. Rockets of ten different colours were used, and it is supposed they will be equally available in the most boisterous weather as in a perfect calm.—*Hunts Telegraph.*

The Gulf of Florida Stream.—The following may be useful to those who are interested in thermometrical navigation. A vessel lately leaving St. John's, in the island of Newfoundland, on her way to Bermuda, tried the difference between the temperature of the air and sea, and found that the northern limit of the Gulf stream then extended a hundred miles to the northward of where it is usually found. In crossing the stream as

she advanced to the southward, the following differences were found: in lat. 41° 24' N. lon. 57° 21' W. the temperature of the air was 60°, that of the sea 72°;—in lat. 38½° N. and lon. 59½°, the air 62°, the sea 68°;—in lat. 36½° lon. 62½, the air 63°, and the sea 67°; showing a decrease in the temperature of the sea as the stream was crossed, and an increase in that of the air as she advanced to the southward. There can be no doubt, that the limits of this extraordinary phenomenon vary according to the season of the year, and the force and duration of particular winds.—*Athenæum.*

Currents in the Atlantic Ocean.—A metal cylinder, containing a printed notice, has been found at Vivero, a small port on the north coast of Spain, which had been thrown into the sea from His Majesty's Ship Chanticleer, on her return from her late scientific voyage. According to the document, it was committed to the deep on the 3d of May last, in lat. 31° 41' N. and lon. 11° 4' W., the weather being fine, and the wind moderate from the northward. On the 12th of September it was picked up at Vivero, being distant 165 miles in a south-east direction from the place; which would lead us to conclude, that it had been influenced by a superficial current setting it a mile and a quarter in each 24 hours. From the length of time, however, since its immersion, and the variety of causes which may have influenced its course, such as tides, &c. in the vicinity of the shore, there can be little doubt it has traversed a far greater space than the above. A variety of instances are on record of experiments of this nature, which, by being repeated often, will afford a tolerably accurate idea of the superficial current of the ocean.—*Athenæum.*

American Fishermen.—The enterprise of the American seamen has always been remarkable. Two smacks, one of 32 tons, the other of 38 tons, have recently sailed for the Pacific Ocean, for the purpose of fish

ing on the coast of Chili and Peru, to supply Lima, Valparaiso, &c. with fish. If they do not succeed, they will sail for the seal fishery off New Shetland. These small craft are mere cock-boats, with only three men and a boy in each.—*Hants Telegraph*.

The Bombay Marine.—It is stated with more than confidence, that the Bombay Marine is to be entirely abolished, and that in lieu thereof the Admiralty are to furnish one small frigate and thirteen 18-gun sloops of war, the expenses of which are to be defrayed by the East India Company, on the same principle as that upon which they pay the troops. This increase to the Navy in that quarter, will effectually suppress all piracy, and we hope also a manifestation of a more determinate line of conduct intended to be pursued towards the Chinese government. We have no doubt the *Melville* of 74 guns will make an early visit to Canton, and compel that civility of behaviour towards this country, which our great trade demands.—*Hants Telegraph*.

Ships' Masts.—Vice-Admiral Sir Pulteney Malcolm, K.C.B. has been on an official visit at Portsmouth during the week, and dedicated the greater part of Friday and yesterday to inspecting the various alterations which have been effected on board His Majesty's Ship *Britannia*. One of these alterations, from its importance, demands attention. It will be remembered, that in the *Portsmouth Herald* of November the 20th, 1831, a description was given of the method invented by Sir Robert Seppings, of making a top-mast in two lengths. A similar method has been adopted with respect to the lower masts of the *Britannia*, and may be simply explained, by supposing the main-mast to be cut asunder at the orlop deck, and the union of the two pieces to be formed by an oak cylinder, about eight feet in length and twelve inches in diameter, let into the centre of the lower piece to the depth of four feet, and to the same height in the centre of the upper piece. When this mast is got on board, the lower part, or stump, is, of

course, first put in its place, with the before-mentioned oak cylinder (or dowel), projecting four feet above the upper end; the main or upper piece of the mast is then put in its place, the lower end of which threadles (if we may use the expression) over the oak cylinder or dowel. We presume this method is only applicable to first-rates, which have one more deck for wedging on than 74's. The advantage to be derived from this invention (and it is no small one) is that, in masting a ship, the hoist is diminished by the length of the stump, so that in the event of an accident happening to a lower mast abroad, where there may be no sheer-hulk, it is probable that the ship's company would be able to get a new lower mast on board, and in its place, by means of their own resources. There is, however, one disadvantage attending the use of masts of this description, which is, the impossibility of reversing the ends of a lower mast; that is, in the event of a shot injuring the head, or of its becoming decayed, it would not be possible, by the plan just described, to place its head where its heel was. Now, the masts invented by Sir Robert Seppings possess the above advantage, both ends being similar, and therefore capable of being indiscriminately used either as the head or heel of the mast. It is obvious, that, by the old method of making masts, where long pieces of timber were used, a considerable saving would have accrued from this invention, but by the present method, as masts are entirely composed of short pieces, nothing is gained in point of economy, by the introduction of the *Britannia's* masts. Having briefly explained both plans, and pointed out the advantages and disadvantages of each, we leave their comparative merits to be weighed and decided by professional men.—*Portsmouth Herald*.

The Hecla.—By accounts from Scilly, dated the 24th Jan., we learn, that the *Hecla*, formerly distinguished as the vessel in which Captain Parry unsuccessfully attempted to reach the North

Pole, but which has been lately sold out of his Majesty's service, and is now rigged as a barque, was brought in there last week in a very leaky state, having sustained considerable damage on her first voyage from Dundee to New York; so much so, indeed, that it is thought the whole of her cargo of linens must be landed, preparatory to her undergoing a thorough repair.—*Portsmouth Herald*.

Dutch Navy.—The King of Holland has issued a royal decree for increasing his maritime force, and has ordered the following vessels to be commissioned, viz: the Waterloo, 74; the Rupel, 44; the Algiers, 44; the Javaan, 32; the Triton, 28; the Zwaluw, 18; and the Pegasus, 18. The whole strength of the Dutch navy consists of 65 men-of-war, viz:—two of 84 guns; six of 74; one of 64; three of 60; fourteen of 44; six of 32; thirteen of 28; four of 20; nine of 18; three of

14; one of 12; and three of 8 guns.—*Portsmouth Herald*.

Captain Legett.—The Underwriters' Association of Liverpool have kindly presented our townsman, Capt. Legett, of the Norma, with a suitably inscribed piece of plate, value twenty guineas, as a testimony of their approbation of the brave and successful defence he made against a piratical vessel, near the equator, on the 17th of April, 1831, during his passage from Liverpool to Maranham.—*Liverpool Paper*.

Expedition Steam Travelling.—We are informed, that the Adelaide steam-packet left Hull on Sunday last, for Selby, at half-past seven in the morning, arrived at that place at three-quarters past ten, remained there one hour and ten minutes, and arrived at Hull at four o'clock the same afternoon, having run upwards of 110 miles in seven hours and twenty minutes.—*Hull Rockingham*.

QUARANTINE.

Notice to masters and crews of vessels sailing from the Baltic and Cattelgatte Seas, as well as from Archangel, and all ports of Russia.

It is hereby made known, that by different orders in council all vessels sailing from the before-mentioned places are liable to quarantine, and are directed by the said orders in council not to enter any port in the united kingdom, excepting the following quarantine ports, viz:—

Cromarty Bay, the River Tay, the Frith of Forth, and Holy Loch in the River Clyde, in Scotland; White Booth Roads in the Humber, Standgate Creek, the Mother Bank at Portsmouth, Plymouth, Falmouth, Milford Haven, or Liverpool, in England.

Vessels bound to Ireland are not permitted to anchor at any other ports than Belfast, and at the entrance of Cork Harbour. All masters of vessels therefore liable to quarantine, on account of coming from the places before-mentioned, are hereby directed to proceed to such of the quarantine ports as may be most convenient to their port of destination.

All persons are bound to take notice, not only of the quarantine regulations, established by act of parliament, but likewise of every order in council made for the performance of quarantine, and published in the London Gazette.

After this notice, no plea of ignorance will be admitted as an excuse for any neglect, breach, or violation thereof; but for the sake of example, and for the security of the public health, the pains, penalties, and punishments of the law will be enforced with the utmost severity.

Duty of a Commander or Master of a Vessel.

1. Upon arrival off the coasts of the united kingdom, or the islands of Guernsey, Jersey, Alderney, Sark, or Man, to deliver to the pilot who shall go on board a written paper, containing a true account of the name of the place at which his ship loaded, and of all the places at which he touched on the homeward voyage, under penalty of £100.

2. Upon entering or attempting to

enter any port, and being spoke by any quarantine officers, to bring his vessel to, under a penalty of £100.

3. To give a true answer, in writing or otherwise, and upon oath or not upon oath, (according as he shall be required,) to the questions put to him by the quarantine officer,—if not upon oath, under penalty of £200,—if upon oath, to be punished as for wilful and corrupt perjury.

4. To deliver his bill of health, manifest, log-book, and journal, to the quarantine officer, under penalty of £100.

5. If any infectious disease shall appear on board, to repair to Standgate Creek, or Milford Haven, there to remain until directions shall be given by the Lords of the Privy Council, under penalty of £100.

6. Upon meeting with any vessel at sea, or when within two leagues of the coast of the United Kingdom, or the islands aforesaid, to hoist the proper quarantine signals as herein-after stated, and to keep the same hoisted whilst in sight of such vessel, or within such distance from the coast, and until discharged from quarantine, under penalty of £100.

7. To give to the pilot a written paper, containing a true account of the different articles composing his cargo, under penalty of £50.

8. To repair to the quarantine station within a convenient time after this notice given, under penalty of £400.

9. The commander or master of any vessel having disease on board, on meeting with any other vessel at sea, or within two leagues of the coast of the United Kingdom, or the Islands of Guernsey, Jersey, Alderney, Sark, or Man, to hoist a signal, to denote that his vessel has such disease on board, and to keep such signal hoisted during such time as he shall continue within sight of such vessel, or within two leagues of the coast or islands aforesaid, while so in sight or within such distance, until the vessel shall arrive at the port where she is to perform quarantine, and until she shall be legally discharged from the performance thereof, under penalty of £100.

10. Refusing or omitting to disclose the circumstances of infection prevailing either at any place at which he has been, or on board his vessel, in his answers to the questions put to him by the quarantine officer, or—

11. Wilfully omitting to hoist, and to keep hoisted, the proper quarantine signal to denote that his ship is liable to quarantine, liable to penalty of £300.

12. Attempting to enter any port, which is not the port at which he ought to perform quarantine, may be compelled to desist therefrom, in order that he may proceed to the proper quarantine port, by guns being fired upon the ship, or any other kind of force that may be necessary for the attainment of that object.

13. Quitting, or knowingly suffering any seaman or passenger to quit, his ship by going on shore, or by going on board any other vessel or boat, before discharged from quarantine—penalty £400.

Duty of Pilots.

Pilots are strictly to observe the following directions:—

1. To receive an account in writing from every commander or master of any vessel coming from foreign parts, of the places at which his vessel loaded, and at which he touched on his said homeward voyage.

To give notice to such commander or master of any proclamation, or order in council, made after the departure of such vessel from the United Kingdom or the Islands aforesaid, and then in force, by which vessels coming from any place mentioned in such account, shall be liable to quarantine, under penalty of £100.

2. To give notice of any proclamation then in force, by which vessels having on board any of the articles mentioned in the master's account, shall be liable to quarantine, under penalty of £100.

3. To remain on board in the same manner as any of the officers, crew, or passengers, and not to quit the said vessel before or after her arrival, either by going on shore, or by going on board any other vessel or boat, with

intent to go on shore, until she is regularly discharged from quarantine, (and they may be compelled by any persons whatsoever, and by any kind of necessary force, to return on board the same,) under penalty of £300, and six months' imprisonment.

4. Not to bring any such vessel into any port or place other than the port or place appointed for the reception of vessels so liable to quarantine, unless compelled by stress of weather, adverse winds, or accidents of the seas, of which the pilot, as well as the commander or master of the vessel, is to give satisfactory proof upon oath, under penalty of £200.

5. To bring the ship to, as soon as it can be done with safety, in obedience to the requisition of the quarantine officer, under penalty of £100.

Duty of other Persons.

Any person going on board a ship liable to quarantine,

1. Not to quit such vessel, either by going on shore, or by going on board any other vessel or boat with intent to go on shore, until regularly discharged from quarantine, under penalty of £300, and six months' imprisonment.

Note.—If they quit the ship, they may be compelled by any persons whatsoever, and by any kind of necessary force, to return on board the same.

2. Whether liable to quarantine, or actually performing quarantine, or having had any intercourse or communication with any persons liable to or under quarantine, all persons are to obey all such orders as they shall receive from the quarantine officer, and to repair to the lazaret, vessel, or place appointed for the performance of quarantine, under the penalty of £200.

3. Not to land, or unship, or move in order to the landing or unshipping of any goods, packets, packages, baggage, wearing apparel, books, letters, or any other articles whatever, from vessels liable to quarantine, under penalty of £500

4. Not to convey, or secrete, or

conceal, for the purpose of conveying any goods, letters, or other articles as aforesaid, from any vessel actually performing quarantine, or from the lazaret, or other place, where such goods or other articles shall be performing quarantine, under penalty of £100.

5. Having quitted, or come on shore, from any vessel liable to or under quarantine, or having escaped from any lazaret or other place appointed in that behalf, may be seized and apprehended by any constable or other peace-officer, or by any other person whatever, and carried before a justice of the peace, who may grant his warrant for conveying such person to the vessel, lazaret, or other place, from which he shall have escaped, or for confining him in any place of safe custody (not being a public gaol), until directions can be obtained from the Privy Council.

6. Knowingly and wilfully forging or counterfeiting, interlining, erasing, or altering, or procuring to be forged, &c., any certificate directed by any order in Council touching quarantine, or publishing the same as true, or uttering any such certificate with intent to obtain the effect of a true certificate, knowing its contents to be false, are guilty of felony.

Signals.

For vessels with the Cholera, Plague, or other highly infectious Disease, actually on board.—In the day-time: a Flag of Yellow and Black, borne quarterly, of eight breadths of bunting, at the main-topmast head.—In the night-time: Two large Signal Lanthorns, with a light therein, such as are commonly used on board His Majesty's Ships of War, one over the other, at the same mast head,

For vessels with clean Bills of Health.—In the day-time: a large Yellow Flag, of six breadths of bunting, at the main-topmast head.—In the night-time: a large Signal Lanthorn, with a light therein, such as is commonly used on board His Majesty's Ships of War, at the same mast head.

For vessels without clean Bills of Health.—In the day-time: a large Yellow Flag, with a circular mark or ball, entirely black, in the middle thereof, whose diameter shall be equal to two breadths of bunting, at the main-topmast head.—In the night-time: Same as for vessels with clean Bills of Health.

Note.—Every commander or master of a vessel, about to sail for any place respecting which an order in Council shall be in force, subjecting vessels coming from thence to quarantine, to be provided with the quarantine signals above mentioned, and to keep the same on board, to be used on his return to the United Kingdom.

Any commander or master hoisting either of the said quarantine signals, by day or night, knowing that his vessel is not liable to quarantine, incurs the penalty of £50.

Any persons giving such information as may lead to the recovery of any of the penalties for breach of the quarantine laws, will be entitled to the usual reward.—By order of the Commissioners,

C. SCOVELL, Assist. Sec.
Custom-House, London,
August 5, 1831.

Spanish Quarantine.—We are sorry to state, that the Spanish Government have ordered a long quarantine on all vessels from England. From the Thames, and all places not infected with the cholera morbus, and loaded with goods not susceptible of plague, nor likely to communicate disease, a quarantine of forty days; all vessels with goods susceptible, that is, manufactures and other articles likely to convey disease, are ordered off to Fort Mahon, there to be unloaded, the ship and cargo fumigated for at least forty days, which will be severely felt by the British trade, occasioning a delay of at least two months. From all ports from the Thames northward on the east coast, the vessels are entirely prohibited from entering the Spanish ports. These are the regula-

tions to be enforced in the northern ports, Bilboa, &c. and we have little doubt they will be extended to all the ports of Spain. A vessel arrived at Bilboa from England, and was ordered by the local authorities to perform a quarantine of twelve days; before the expiration of that time, the orders from the superior Board of Health came, and the vessel was ordered a quarantine of forty days.—*Cambrian*.

Quarantine on British Shipping.—Late Regulations.—At Calais, on the 19th February, vessels from Dover continued to be admitted with passengers and goods, without restraint, on producing a clean bill of health from the French vice-consul at that place. Vessels from London are subject to a quarantine of five days; and this morning it was decided that no alterations would take place. At Boulogne, on the 15th February, it was determined that vessels from London and the river Thames to Margate should not be admitted; that vessels from Ramsgate to Portsmouth inclusive be admitted subject to a quarantine of five days; to be in force till orders were received from Paris; and none had been, up to the 14th February. On the 20th February the quarantine regulations were the same as those of Calais. At Ostend, orders were received on the 18th, prohibiting the admission of all vessels from England into the Belgian ports. At Hull, on the 20th February, vessels from Hamburgh with clean bills of health, although they might have enumerated goods on board, were not subject to quarantine, if the crews, on examination by the medical superintendent, were all well. At Rotterdam, on the 18th February, according to an order issued by the navy board, vessels from London, and places bordering on the Thames, as low as the Nore, will have to perform a quarantine of forty days; and the ports and places on the coast between Dover and Harwich, both inclusive, being suspected, vessels from thence will have to perform a quarantine of ten days.—*Lloyd's List, Feb. 21.*

The Brig Johns.—On the 19th of January, about half-past six, P.M. the brig Johns, of Kincardine, Scotland, from Liverpool for St. Thomas and St. Domingo, with a general cargo, struck on a sunken rock, outside the South rock, on the county Down coast. The vessel filled, and shortly after went down. The captain, crew, and passengers, thirteen in number, succeeded in getting the boats clear; and after encountering the greatest danger and fatigue for about five hours, reached the shore in safety. One of the cabin passengers actually left the vessel without any covering except his shirt; and the crew and passengers have lost every thing except what they had on them at the time. The vessel has been broken up, and it is feared the cargo will be totally lost.

Shipwreck.—A letter from Lewis, (Delaware,) dated Dec. 11th, states, that the brig Caroline, from Calcutta, was found on the beach that morning, about a mile outside Cape Henlopen, entirely abandoned. In a few hours afterwards, three of the crew made their appearance, and stated that the brig was from the East Indies, with a valuable cargo of silks, teas, wild beasts, &c. commanded by Captain Graham, bound for Philadelphia, where she belonged; that she struck about midnight on the Hen-and-Chickens, and sprung a leak, sprung the masts, &c. The wind N.E. and strong, apprehensions being entertained by the captain and crew that she would soon go to pieces, they concluded to abandon her. Accordingly, the captain, officers, and part of the crew, in all nine persons, took to the long-boat, and four men to the jolly-boat. One of the latter was drowned in landing, as she capsized in the breakers. The three survivors are at the wreck. A letter from Philadelphia states, that the property is supposed to be covered by insurance at the offices in that city; that the Calcutta cargo would probably be saved in a damaged state; and adds, that accounts had been received there of the long-boat with the supercargo only; the captain and others on board hav-

ing perished with cold.—*New York Paper.*

Launch of the Ship Laidmans at Chester.—On the 17th of January, this beautiful new ship, of 260 tons register, was launched from the building-yard of Mr. William Mulvey, Chester, in the presence of a great number of spectators. She was built for the house of J. Laidman and Co. of Chester, to be commanded by Thomas Hughes, in the West India trade. The vessel glided into her destined element in the most majestic style, under a salute of twenty-one guns. The Laidmans is probably the most finished specimen of naval architecture ever produced in Chester; there is nothing tawdry about her, but she has been pronounced, by competent judges, to be most exquisite in symmetry, and perfect in her workmanship. She is tastefully fitted up with two cabins, capable of accommodating eight passengers, and although her registered tonnage is only 260, yet from the great depths of her hold, (17 feet 5 inches,) she is calculated for a burden of 450 tons, and probably more. Major Ross, and the officers of the garrison, were present, and kindly volunteered the services of the band, which added very much to the effect of the scene.—*Liverpool Paper.*

East India Shipping.—At a Court of Directors, held at the India House, on the 23d day of January, Captain M. Hamilton was sworn in to the command of the ship *Dunira*, consigned to Bengal and China, and Captain D. J. Ward, of the ship *Sir David Scott*, took leave of the Court previous to departing for Bengal and China. At another Court of Directors on the 24th of January, the following commanders took their leave previous to departing for their respective destinations. Captain A. Christie, Thomas Coutts; Captain T. W. Barrow, George the Fourth; for Bombay and China, also Captain T. Larkins, Marquis Camden; for Bombay and China, Captain A. F. Proctor, was sworn in to the command of the ship *Windsor*,

bound to St. Helena, Prince of Wales' Island, and China.

On the 26th of January, despatches were closed at the East India House, and delivered to the pursers of the following ships:—Duchess of Athol, Captain E. M. Dannel; and Oswell, Captain J. Dalrymple, for Bombay and China.

Tarbert Pier.—We hear from Tarbert, on the river Shannon, that the erection of a pier-head has been determined on, and will be commenced early in the ensuing spring, at that island, for the accommodation and safety of vessels; and that a bridge is also to be built across from Tarbert demesne to the island, so that carriages will at all times be able to pass and repass to the pier. Engineers have been employed by Government to make a plan of the work, and a survey has been made by them of the ground where it is to be carried into execution. The estimate amounts to £6000. The work will be one of immense utility to the public, Tarbert being the port of admission into Kerry from the interior of the kingdom, by the inland navigation from Dublin. It is moreover, a well-known and much frequented place of resort for ships in distress, after a long transatlantic voyage.

Improvement of Swansea Harbour.

—We have learnt with great pleasure, that at the Meeting of the Harbour Trustees, on Monday last, the plan for converting our harbour into a Float, and for deepening the river, which has been so long and maturely discussed, received the approbation of the Commissioners; and, we trust, we shall ere long have the satisfaction of seeing it carried into effect, notices having been given for an application to Parliament for the purpose during the ensuing session. Nothing in our apprehension will tend more to advance the growing prosperity of the port and the good of the whole surrounding district; giving at the same time permanent and productive employment to our rapidly-increasing population, than effectuating this grand

and important measure. It is proposed, we understand, to give to Swansea such an increased depth of water, that the largest class of steam-boats known in this or any other country, frigates, &c. may enter both at spring and neap tides, and constantly lie afloat in our harbour; and this without any heavy additional tax on the general trade. In a national point of view, we conceive this to be an object well worthy the serious attention of Government. Possessing, as we do, an inexhaustible supply of coal of the best quality for steam-boats, at the cheapest rate, it is difficult to calculate the immense importance of the contemplated improvements, not only in reference to steam navigation, but as regards the general trade of the country.—*Cambrian.*

The Bell Rock Light House.—

On the 9th ult., about 10 P.M., a large herring-gull struck one of the south-eastern mullions of the Bell Rock Light House with such force, that two of the polished plates of glass, measuring about two feet square, and a quarter of an inch in thickness, were shivered to pieces and scattered over the floor in a thousand atoms, to the great alarm of the keeper on watch, and the other two inmates of the house, who rushed instantly to the light room. It fortunately happened, that although one of the red-shaded sides of the reflector-frame was passing in its revolution at the moment, the pieces of broken glass were so minute, that no injury was done to the red glass. The gull was found to measure five feet between the tips of the wings. In his gullet was found a large herring, and in its throat a piece of plate-glass, of about one inch in length.

General Sir F. Ponsonby, and suite, went out to the Mediterranean in His Majesty's Ship Madagascar; the General having been appointed Governor of Malta.

Sea-gull.—On the 17th of January, a sea-gull was shot at North-Ferriby, which measured five feet three inches (the extreme width of the wings,) and weighed three pounds and three quar-

ters. This enormous bird, which is supposed to be without precedent, is now in the possession of a gentleman of Kirkella.

New Ship of War.—The Conway, of 28 guns, was launched at Chatham, on the 2d of February, and went into dock to be coppered.

Falmouth Harbour.—It is mentioned in a former paper, that Sir P. Malcolm had been deputed by the Board of Naval Revision to visit Falmouth, for the purpose of inspecting and reporting on the Packet Establishment, and we understand, that the result of the gallant Admiral's report will be certain important changes, having for their object the joint advantages of expedition and economy. It is also said, that some serious idea is entertained of turning to account those advantages which are offered by Falmouth, as possessing one of the finest and most capacious harbours in England, but which has been hitherto comparatively useless.—*Portsmouth Herald.*

Comets.—At a late meeting of the Astronomical Society, Mr. Baily, vice-president, announced from the chair, that he had received a communication from Professor Schumacher, stating, that the King of Denmark, who enters with much zeal and interest into every thing that tends to the promotion of science, had founded a medal for the first discovery of every comet that was not visible to the naked eye, and not known to be subject to a periodical revolution. Notice must be sent by the first post after the discovery, to Professor Schumacher, at Altona, who is to be umpire between rival claimants, and who is to settle all disputes that may arise on the subject, within six months of the discovery. The prize is a gold medal, of the value of twenty ducats.

Melancholy Catastrophe at Sea, which occurred in sight of the ship Sarah, Captain H. Columbine, commander, proceeding from Bombay to London, in lat. 33° 42' N. long. 23° 49' W.

Between ten and eleven o'clock on

the 16th of January, a strange sail was discovered on the larboard bow; she appeared to be in distress, having lost her fore-topmast and fore-topail yard, suspended by the lifts dangling in the wind, lee fore-rigging and her sails much torn. As we neared her, it proved to be a brigantine of about 150 tons, and appeared as if deserted by her crew. Captain Columbine ordered a boat to be got ready, and, accompanied by the carpenter and four seamen repaired to the wreck. Soon after they had boarded her, with the exception of one man who remained in charge of the boat, we saw them exploring the decks of the deserted wreck, and from it throwing into the boat articles of various kinds. The captain then gave instructions for the boat to return to the Sarah with certain orders for his officer, whilst himself and carpenter remained upon the wreck. As the boat was proceeding towards the Sarah we saw from our poop the wreck roll several times heavily; she was evidently going down, and on a sudden nothing more could be seen than her main-topmast, which was tossed about as the sea was rushing over her. We then made immediate signal for the boat to return to the brigantine to rescue those she had left upon the wreck; the boat reached her destined spot, and there remained some time, in the hope of saving those who were the victims to a raging element. We watched with fearful eagerness and anxiety to see if any more were to be seen in the returning boat than the five seamen who were its crew, but discovered that these were all it contained. Another boat was sent with an officer, and the cutter again returned to the wreck, to see if any thing more was to be seen of the unfortunate sufferers; but nothing could be found, except the captain's hat, which he had probably left upon the deck. Poor Captain Columbine was beloved by all on board, and even the rough seamen shed tears for his fate; to his passengers he had endeared himself by his gentlemanly manners, and his kind and liberal treatment;

and by his crew he was regarded as a skilful seaman, and a just, kind, and considerate commander. He met his fate at the early age of 32. This truly unfortunate vessel turned out to be a brigantine, the *Invincible*, apparently bound from Spain to America; she was more than half full of water, and the crew had either made their escape from her in a boat, or had been taken off by some other vessel.—*Western Luminary*.

FOREIGN MAILS.

- For
- BATAVIA**—The *Tamont* was to sail from London Dock 28th Feb.
- BOMBAY**—The *Boyne*, *Brown*, in the East India Dock; to sail about 20th March. The *Cambridge* is to be at Portsmouth on 1st March for Bombay.
- BUENOS AYRES**—The *Plata* and the *Mary Worrall* were to sail from Liverpool on 21st and 22d of Feb.
- CALCUTTA**—Sir David Scott, *Ward*, H.C.S.; to sail from Plymouth 6th March. The *Ferguson* is to leave the West India Dock on 1st March for Calcutta.
- CAPE OF GOOD HOPE**—The *Daphne* and *St. Helena* were to sail about 25th Feb., the *Catharine* on the 23d, and the *Mary* and *Jane* on 1st of March.
- CEYLON**—The *Achilles* was to sail from London Dock 1st March.
- DEMERARA**—The *Laura* was to sail on the 10th of Feb., and the *Chatham* on 26th Feb., both from Liverpool.
- LIMA**—The *Porter* was to sail on the 24th Feb. from Liverpool.
- MADRAS**—The *London*, *Smith*, H.C.S.; to sail from Gravesend 22d March. The *Claudine* sailed from Deal 17th Feb. The *Palmyra* was to sail on 25th Feb., and the *Sir David Scott* from Plymouth 6th March.
- MAURITIUS**—The *Hector* was to sail from London Dock 1st March.
- PERNAMBUCCO**—The *Eleanor* was to sail 24th Feb. from Liverpool.
- RIO JANEIRO**—The *Warwick* was to sail 16th Feb., and the *Heyworth* on 1st March, from Liverpool.
- SIERRA LEONE**—The *Latona* cleared out for, on 20th Feb.
- SINGAPORE**—The *Tamont* was to sail from London Dock on 28th Feb.
- SWAN RIVER**—The *Edward Lombe*, *Freeman*, to sail from St. Katherine's Dock 15th March. The *Sir F. M'Naughten* cleared out 23d Feb.
- SYDNEY**—The *Easton*, *Walsley*, to sail from London Dock on 28th March. The *Elizabeth* was to sail on 28th Feb.
- VALPARAISO**—The *Jane Frowse* was to sail from Liverpool 21st Feb.
- YAN DIEMEN'S LAND**—The *Resource* and the *Brothers*, the former from London Dock, and the latter from the St. Katherine's Dock, were to sail 26th Feb. The *Katherine S. Forbes* from Woolwich 23d Feb., and the *Mansfield* from St. Katherine's Dock 26th February.

Obituary.

Died, on the 17th of January, at Brockhurst, near Gosport, in the 80th year of his age, Thomas Ligall Yates, Esq. after a confinement to his bed of 18 days, and suffering much from cough, in consequence of severe cold caught on Christmas-day, in his attendance at church. Mr. Yates was at the time the oldest Purser in the Navy; and, we may venture to add, one of the (if not the) oldest servants the crown had; having been, with the exception of four years, in the naval service, afloat and ashore, from the year 1761, when he commenced his services on board His Majesty's Ship *Centaure*, with his relative Capt. Julian Legge.

Died, a few days since, in France, the Hon. Sir Alexander Cochrane Inglis Cochrane, Admiral of the White, and Grand Cross of the Bath, in the 74th year of his age. This officer was one of the most distinguished ornaments of the British Navy, and his services in the Egyptian expedition stamped his character as a brave, a skilful, and a scientific man. In 1805, he became Commander-in-chief on the Leeward Islands' station, and as such, in the Northumberland 74, bore a prominent part in the action off St. Domingo, when three French line-of-battle ships were captured, and two others were driven on shore and burnt. In 1813, during the North American war, he assumed the command on the coast of North America, and ably conducted the operations till the termination of the war. In 1821, he was appointed Commander-in-chief at Plymouth, since which period he has resided in France. Sir Alexander Cochrane has received three times the thanks of Parliament for his professional services.

Died, at his residence, Westhill Lodge, Titchfield, in Hampshire, on Saturday last, the Right Hon. Lord Henry Paulet, brother to the Marquis of Winchester, a Vice-Admiral of the Red, and a Knight Commander of the Bath. His Lordship was a distinguished officer, and passed the greater

part of his life in the service to which he was attached. He was in the several actions of Admiral Keppell, off Ushant, in 1778, Lord Rodney with the Count de Grace, and the battle of Copenhagen, and also at the capture of the islands of Tobago and Martinique; and when commanding the *Astrea* frigate of 32 guns, in 1794, he captured in a dark night the French frigate *La Gloire*, of 36 guns and 300 men, after a close action of 50 minutes. In 1811, his Lordship was called to a seat at the Board of Admiralty, whence, after three years' service, he was obliged to retire, upon the failure of his health.

Death of Dr. Bell.—It is with sincere regret we announce the death of this truly good man, which took place at Lindsay Cottage, Cheltenham, on Saturday last, after a long illness, in the 80th year of his age. Dr. Bell had the high gratification of seeing his system of education adopted by the National Society instituted for the education of the lower orders of the community, upon the pure principles of the Christian religion, which now so happily prevail over all the demoralizing systems of the present day. He had resided some time in India with due advantage, was Prebendary of Westminster, and Master of the Sherborne Institution, Durham; and in the course of his long and virtuous life had accumulated great wealth, which he munificently disposed of to various national institutions, to the amount of £120,000. The remains of Dr. Bell were deposited in Westminster Abbey, on the 14th February, attended by a numerous procession.

Died, on the 20th ult. Capt. Joseph Pearce, R.N. at his residence, Fergus Hill, Irvine, N. B.

Died, a few days since, at Teignmouth, retired Commander James Wallace.

Died, on the 16th ult. at Kilmalvie, Kinger Loch, Argyleshire, Capt. Robert Stewart of the Royal Marines.

Died, on the 6th of February, at the Rectory Place, Woolwich, in the 80th year of his age, J. Douglas, Esq. of the Royal Navy, late Master Attendant of His Majesty's Dockyards at Deptford, Sheerness, and Plymouth.

Died, on Thursday, at his residence in the Circus, Bath, in the 73d year of his age, Sir Richard Hussey Bickerton, Bart. K.C.B. Admiral of the Red, and General of the Royal Marine Forces. The deceased was made a Lieutenant in 1777, and a Post-Captain in 1781, and commanded the *Invincible*, 74, in an affair between Sir Samuel Hood and the Count de Grasse. At the capitulation of the French army in Egypt, Sir Richard superintended their embarkation; a duty which he executed with such celerity, that the revolutionary General Menou complimented him by saying, "The vigilance of Sir Richard's squadron had accelerated the reduction of that place, as it cut them off from all hope of reinforcement." At this period also Sir Richard was invested with the Turkish order of the "Crescent" on the field of battle, and was knighted by the Captain Pacha in the presence of the whole English and Turkish armies. Sir Richard was seven years a Lord of the Admiralty, and succeeded Sir Rogar Curtis as Commander-in-chief at Portsmouth; a post he held at the time the allied Sovereigns honoured Portsmouth with a visit.

Died, on the 10th of February, at Hoddesdon, William Peere Williams Freeman, Esq., Senior Admiral of the Fleet, in the 91st year of his age.

Died, at Bristol, Mr. John Spurling, Master in the Royal Navy, (1800.) This officer served as master in *L'Imperieuse*, under Lord Cochrane, at the destruction of the French squadron in Basque Roads, in 1809.

Died, at Plymouth, Mr. Jay, Superannuated Carpenter, R.N. formerly of the Caledonia.

Died, on the 2d Feb. Mr. Stokes, aged 57, Clerk in His Majesty's Dockyard at Plymouth.

THE
NAUTICAL MAGAZINE,
&c.

APRIL, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

13. SHOAL ON THE SOUTH COAST OF SICILY, left by the late Volcanic Island. Lat. 37° 11' N. Long. 12° 44' E. *Soundings 3 to 6 feet.*

It bears from the S.E. Point of Pantellaria, about E.N.E. 40	}	miles.	
... Cape St. Marco, S. W $\frac{1}{4}$ W. ...			23
... Cape Granitola S $\frac{1}{4}$ W. ...			24
... Cape Bianco W $\frac{1}{4}$ S. ...			28

An attention to the demands of seamen for the immediate notice of any new danger, suggested the addition of the advertisement, which appeared in the preceding number of this work, relating to the shoal left by the late volcanic island on the coast of Sicily. The following particulars respecting the disappearance of this extraordinary phænomenon, together with the observations on it by Lieut. Kennedy, commanding His Majesty Steam Vessel *Hermes*, will now supersede that advertisement.

On the 16th of November, the island was seen by the master of a trading vessel, between Malta and Marseilles, at which time it had diminished to within a very few feet above the surface of the water. The same person, returning to Malta from Marseilles, having shaped a course for it from Maritimo, with fine weather, passed within two miles of the place where it had been, without seeing it.

The master of another of these traders, on the 11th and 12th of December, observed the sea breaking over the place where it had been, but could not see the island. Bad weather obliged him to bear up for Trapani, where he was informed, by the officer commanding a Sicilian gun-boat, that he had hoisted the Sicilian flag on the low hummock, which still remained on the 1st of December,

and that, having returned to it on the 9th following, the whole had disappeared.

The American brig *Flora* passed the situation of it on the 19th of December, being in lat. $37^{\circ} 9' N.$ and long. $12^{\circ} 43' E.$ at noon of that day. The weather being fine, and the water smooth, an extensive reef was seen, and this vessel passed about half a mile to the northward of it.

The master of the *Lady Emily* (the government yacht of Malta) passed the reef on the 9th of January, and saw the sea breaking on it; and the fishermen of Pantellaria assert that there was then six feet water on it.

The French Admiral Hugon searched for it unsuccessfully during a whole day, previous to his arrival at Malta on the 14th of January.

This has a volcanic island, which at one time was 150 feet above the surface of the sea, now become a formidable danger to ships frequenting Malta, and its situation does not appear to be known to the masters of these vessels. In addition to the above position of it, Lieutenant Kennedy gives the following judicious observations concerning this danger.

Vessels bound to Malta, adopting the Maritimo passage, should make Cape Granitola on the coast of Sicily, and afterwards should keep along this coast, at a distance of about ten miles, until they pass Cape Bianco, after which they may shape their course for Malta. Should the weather be bad, so as to prevent these directions from being followed, vessels should make for Pantellaria; and having got sight of this island, should then shape a fresh course for Malta.

With respect to the southern passage, Lieut. Kennedy observes, that, in winter, that from Cape Bon to Galita will be found the best. The winds generally at this time of the year do not blow strong, and there is good anchorage along the coast to the S. E. and S. W. of Cape Bon, as far as Galita, where vessels meet with no interruption from the shore. The *Messenger* anchored off the town of Bizerta, on the Tunisian coast, and found the anchorage good, the depth being from 5 to 10 fathoms on a sandy bottom, in a bay sufficiently large to contain any number of vessels.

Lieut. Kennedy passed it in the *Hermes*, on the 4th and 5th of February, and found a sensible change in the smoothness of the water, when under its lee for a short time, when a heavy cross sea was running, and the wind was strong.

14. THE CHALLENGER SHOAL, *East Coast of Arabia.* LAT. $22^{\circ} 9' N.$ LONG. $60^{\circ} 25' E.$ Soundings 13 fathoms.

His Majesty's Ship *Challenger*, under the command of Capt. C. H. Fremantle, lately passed over a shoal-bank off Cape Ras el Had,

on the coast of Arabia. The Challenger was on her way to the Gulf of Persia, in the month of August last, when, a little after noon, a change was suddenly observed in the colour of the water. The lead was immediately put overboard, and two casts close to each other, of 13 fathoms, were obtained; no bottom was found with the two following, at 25 and 65 fathoms. The bank was plainly distinguished, by the change in the colour of the water, which appeared to be about three miles in length, and about half a mile in breadth. The Challenger ran direct for Cape Ras el Had, distant forty miles; from which run, and the observations for chronometer, its position was ascertained. When distant five miles from the Cape, soundings were tried for, but no bottom was found with a hundred fathoms. At Muscat, the shoal was not known; and as there may be less water on it than that found by the Challenger, vessels are cautioned to keep clear of it.

15. BUOYS IN THE RIVER ST. LAWRENCE. *Communicated by Captain H. W. BAYFIELD, R.N. 1831.*

In the river St. Lawrence, four buoys are laid down every spring, and taken away every autumn, at the close of the navigation, as follows:—A red buoy off St. John's Church, on the south bank of the river, in $1\frac{1}{4}$ fathom. A white buoy on the Middle Ground. A black buoy opposite to the last, on the St. Roque Shoal, and a chequered black and white buoy off St. Ann's Church, on the St. Ann's Shoals, south bank of the river. They are never laid down two years following in the same place, on account of their not being placed by angles, but they are always sufficiently near it to answer the purposes of navigation. A light vessel is also placed at the Traverse.

16. VOLAGE BANK, *on the Coast of Brazil.* LAT. $26^{\circ} 44' S.$
 LON. $48^{\circ} 15' W.$ *Soundings $12\frac{1}{4}$ to 14 fathoms.*

His Majesty's Ship Volage, on her way to St. Catherine's, on the coast of Brazil in September last, struck soundings in 14 fathoms mud, on a bank which is not laid down on the charts in the above latitude and longitude, calculated back from the noon observation. From thence, while the ship was sailing two miles W. by S., bottom was found with 14 to $12\frac{1}{4}$ fathoms; after which, on steering West and W.S.W. the water deepened suddenly to 23 and 29 fathoms, and these depths were preserved until the island of Arvoredo, at the north end of St. Catherine's Island, was passed.

The above position of the shoal depends on that of Fort San José, which was considered to be in lat. $27^{\circ} 26' 30'' S.$ and long. $48^{\circ} 39' W.$ The variation was found to be 7° easterly.—Roussin passed inside of this shoal, and does not lay it down.

17. LIGHT-HOUSE ERECTED AT HALIFAX, NOVA SCOTIA, 1830,
and Directions for entering the Harbour at Night.

“The Light-House on Maugher’s beach, at the entrance of this harbour, is at present not visible from the eastward; but after the first day of July, 1830, it will be visible from every point of the compass.”

Vessels sailing up Halifax harbour at night, should attend to the following directions:—

“When abreast of Chebucto Head, or when Sambro Light bears W.S.W. the light on Maugher’s beach should never be brought to the westward of North. By keeping the light from North to N. by E. will lead clear of the Thrum-Cap shoal. This Light-House bears from the Thrum-Cap buoy N. $\frac{1}{2}$ W. two miles and a half.”

Signed by the Commissioners of Light-Houses, Halifax.

18. DESTRUCTION OF PARTRIDGE ISLAND LIGHT-HOUSE BY FIRE.

“On Tuesday night last, between the hours of eleven and twelve o’clock, the Light-House on Partridge Island was completely destroyed by fire. It originated in the floor of the lantern, through which a stove-pipe passed. A large lantern is to be hung up at the western yard-arm of the signal-post near to where the Light-House stood, and lighted every night, until a new Light-House can be erected.”—*Liverpool paper, February, 1832.*

19. NEW LIGHT HOUSE IN THE MEDITERRANEAN.

PORT OF CETTE.—*South Coast of France.—Provisional Light and Beacon.*

[*Translation.*]

Director-General’s Office of Bridges, Roads, and Mines. Chamber of Commerce, Marseilles, 23d November, 1831.

Port of Cette, Department of Herault.

Navigators are to take notice, that, in order to facilitate the entrance of the Port of Cette by the north-east passage, the only one that should be attempted during the winter months, when the bad state of the weather prevents the local pilots from going out to vessels—that, in the month of October, a seamark was erected near the foot of the mountain, a little to the south of Fort Richelieu. The building is in the form of a quadrangular pyramid, the height of which is about 60 metres (197 feet) above the level of the sea.

The eastern face of the building is painted white, with a black lozenge in the middle of it, for day signal; and two revolving lights, one over the other, have also been placed on it for night.

This provisional light may be seen four leagues at sea; and the two lanterns, of which it is composed, may be distinguished from each other at the distance of a mile and a half from the port.

In order to take the north-east passage during the day, it will be necessary to bring the lighthouse on Fort St. Louis on with the new building; and by keeping them on with each other, they will lead in through the middle of the channel.

It will be easy to do the same at night, by bringing the light of Fort St. Louis on with the two lights of the pyramid, now established as a provisional light.

Navigators should, nevertheless, guard against the current, which sets strongly to the south-west, when the winds have blown long from the north-east; and it will be best for ships arriving from the north-eastward, instead of following exactly the above directions, to keep the new light a sail's breadth open to seaward of the light on Fort St. Louis.

With the wind from the south-east, ships should keep the new light on with that of Fort St. Louis, taking care never to open them to the southward.

Transmitted by M. the Director-General of Bridges, Roads, and Mines.

(Signed)

M. ROUSSIER,

Secretary to the Chamber of Commerce.

20. PASSAGE TO THE ISLAND OF ASCENSION.

*Letter from a Master in the Royal Navy commanding a transport, to the Principal Officers and Commissioners of H. M. Navy.**

Ascension, 13th June, 1831.

"Gentlemen—In consequence of the very long passages that hired transports and chartered ships generally make between England and this island, (owing principally to an imperfect knowledge of the strength, limits, and direction of the trade-winds,) I am induced to suggest, that a track may be pointed out to the masters or agents of transports, on their quitting England for Ascension, in order that so much delay and inconvenience to the service may be avoided.

"An opinion prevails, that in going from England to Ascension, a ship (after losing the N. E. trade-wind) should go either the eastern or western passage, that is to say, either along the African or American coast. By going either of these tracks the time and distance will be lengthened, as these passages have generally occupied from 10 to 17 weeks. The *Salacia*, chartered ship, arrived here in 103 days from the Downs; 61 days being employed between the Equator and Ascension!

"I therefore recommend the following track as being the best throughout the year:

"Let a ship make the best of her way into the N. E. trade-wind, and, having got it, pass to the westward of the Cape de Verd Islands, (to avoid calms,) and shape a course for long. 18° or 19° W. on the Equator, and so soon as she loses

* This appeared in the *Times* newspaper some time since, but its value is a sufficient passport to our pages.—*Ed.*

the N. E. trade-wind, let every advantage be taken of making southing, without going further west than into 18° or 19° . Being near the skirts of the S. E. trade, the wind blows from S. by W. to S. W. by S.; let her then stand on the starboard tack, to make her easting in a track where there is smooth water, and seldom any current, and cross the equator in about long. 9° W., from whence she will fetch Ascension, although she may not lay up for the island at first; for it is a general law within the limits of the trade-winds, that their direction diverges as from a centre or focal direction, towards the coast of Africa, as well as America, and consequently a ship being on a wind will come up or lay higher the farther she proceeds.

21. LIGHTS ON THE FRENCH COAST, in the Strait of Dover and the Mediterranean.

Navigators are hereby informed, that, from the 1st of November next, three new fixed lights will be established and shown, during the night, on the coast of France: the 1st on Point d'Alpreck, near Boulogne; the 2nd on the south coast of Camargue (mouth of the Rhone); and the 3rd at the entrance of the port of Bouc, of the same department.

The following are the particulars of each:

1. *Light on Point d'Alpreck, near Boulogne, (Strait of Dover.)*

On the tower of the old Semaphor, at one marine league S. S. W. of the entrance of the Port of Boulogne.

This small fixed light will be seen in fine weather, from the distance of three to four leagues.

2. *Provisionary Light of Camargue, (Mouth of the Rhone.)*

On the left bank of the Mouth of the Vieux Rhone, at 2 marine miles S. E. $\frac{1}{4}$ S. of the old tower of St. Genest.

This small fixed light will be seen in fine weather, at the distance of three to four marine leagues.

3. *Second Light of the Port of Bouc, (Mouth of the Rhone.)*

On the Mole-head to the left of the entrance to the port, and at 245 metres (804 feet) to the north of the light of Fort de Bouc.

In fine weather, this little fixed light will be seen at the distance of three marine leagues. The essential object for which it is intended, is to prevent the light of Camargue, above mentioned, from being confounded with the light of the Fort de Bouc, situated to the right of the entrance of the port.

July, 1830.

22. NEW LIGHT AT GUERNSEY. *From a Letter addressed to G. Bennett, Esq., Secretary at Lloyd's.*

“NOTICE TO MARINERS.

“For the convenience of approaching the Roadstead and Harbour of the Island of Guernsey, a Gas Light has been erected on the Round House on the South Pier Head, and will be lighted the 18th inst.

“ Its elevation at high water spring-tide is forty feet from the bearings of its reflectors. This light will be seen coming through the Small Russell from the northward, the Great Russell from the eastward, and also from the southward when round St. Martin's Point.

“ The Round House on which the light is erected serves as a mark for different channels to the Road by day, and will consequently, from its light, serve by night, as per following directions :—

“ Vessels coming from the northward and eastward through the Great Russell, and bound for the Road or Harbour, are to run till they bring the light to bear N.W. by N., or open to the southward of Castle Cornet, and to keep on that course till they are within a mile of the said Castle, when they will be clear of the Tête Daval, or Lower Heads.

“ On nearing the Castle, and running for the Harbour, vessels are to bring the light to bear W.N.W.; and to anchor in the Roads, they must bring the Light to bear W. by N.

“ In steering for the Small Russell, vessels must bring the Casket Lights to bear N.E. $\frac{1}{2}$ N. until they have the Pier Light bearing S.W. by W. $\frac{1}{2}$ W., this being the central track for running through the passage.

“ N.B. Much caution should be observed by night in running through the Small Russell.

“ In coming from the southward round Saint Martin's Point, vessels must run to the eastward until they bring the light to bear N. $\frac{1}{2}$ W., and then steer N. $\frac{1}{2}$ E. until they bring it to bear W. by N. The light will then be open to the northward of the said Castle, when they may run for the Road or Harbour.

“ The Light is on the larboard hand going into the Harbour; the entrance of which is eighty feet wide.

“ N.B. The above bearings are given by compass.

(Signed) “ PETER COLLAS, Harbour Master.”

“ *Island of Guernsey, Pier Office, 13th Feb., 1832.*”

23. LIGHT VESSEL ON THE SOUTH SAND HEAD OF THE GOODWIN SANDS.*

“ *Notice to Mariners.*

“ Trinity-House, London, 3d March, 1832.

“ Notice is hereby given, that, in conformity with the intention expressed in the advertisement from this house, under date the

* The South Sand Head Light Vessel, and that on the Newarp Shoal, have been lately washed from their moorings, but they have since been replaced.—*Ed.*

11th ultimo, a Floating Light Vessel has been moored off the South Sand Head of the Goodwin Sands; and the light on board the same was exhibited from a single lantern on the evening of the 22d ultimo, and will be continued every night from sunset to sunrise.

“ This light vessel is moored in 13 fathoms at low water, spring tides, with the following marks and compass bearings, viz.

- “ The south side of a conspicuous Gap on the high land westward of Dover Lines, on with the extreme point of the South Foreland, bearing - West.
- “ The west end of the Trees in Admiral Harvey's Park at Walmer, on with the centre of Walmer Castle, bearing - - - N. N W. $\frac{1}{4}$ W.
- “ South Foreland Upper Light-House - - - W. $\frac{1}{4}$ N.
- “ Gull Light Vessel - - - N. N E. $\frac{1}{4}$ E.

By order,

“ J. HERBERT, Sec.”

24. LIGHT VESSEL IN THE ENTRANCE OF THE BALTIC.

Extract of a letter from Charles Tottie, Esq., Swedish Consul, to Mr. J. F. Dessiou, Master, R.N. :—

“ The light vessel on Falsterbo Reef is moored S.S.W. $1\frac{1}{2}$ German mile (6 nautical) from the Falsterbo Light-House. The light is about 40 feet above the surface of the sea, and the vessel shews during the day-time a red distinguishing flag. During hazy and dark weather, a bell is kept ringing, and guns are fired, both by day and night, to warn vessels of approaching too near the reef.

“ 17, Great St. Helen's, 29th Feb. 1832.”

25. LIGHT HOUSE ON DUNNET HEAD.

In article No. 10. of Hydrography, in our first number, are the particulars of the Light-House lately erected on Dunnet Head, from the printed notice of Mr. Stevenson, Engineer to the Commissioners for the Northern Light-Houses. From the surveys of Mr. Thomas Master, R.N. who has long been employed in those parts, and whose care entitles his results to implicit confidence, we find that his station on Dunnet Head is in lat. $58^{\circ} 40' 21''$ N. and long. $3^{\circ} 21' 44''$ W. The Light House is about 1200 feet from this station in a north-west direction.

Mr. Thomas also gives the following particulars of the Pentland Skerries, at the eastern entrance of the Firth. The higher Light-House is in lat. $58^{\circ} 41' 38''$ N. long. $2^{\circ} 55' W.$ Variation in 1831, $19^{\circ} 45' W.$ Time of high water at full and change, $8^h 30^{m}$ A. M. Springs rise 8 feet, and neaps $3\frac{1}{2}$ feet.

VOYAGES.

I.—A SKETCH IN THE RIVER ST. LAWRENCE.

WITH a brisk and favourable gale, accompanied with fine weather, we left St. Ann's, and passed rapidly down the whole estuary of the St. Lawrence, as far as Cape Chat. No sooner had we reached this part of the coast, than our good fortune forsook us; the weather changed; and we were frequently enveloped in thick fogs, which were sometimes of six days' duration,—the water dropping from our sails and rigging like rain, and the temperature as low as that of a winter in England. Being necessarily often near the shore, we had some narrow escapes, and were frequently left to the mercy of the tides by a sudden calm, when we found ourselves entangled in the bays, and among shoals.

After having looked into all the rivers on the north shore of the St. Lawrence, some of which are very large, and all of which have hitherto been entirely unknown, we went to the bay of the Seven Islands. Of the rivers, the Bersimi is navigable for vessels as far as the first falls, distant forty miles from the entrance, across which it has a bar, with a depth of eighteen feet on it at high-water. The Outard and Manicougan are also very large rivers, but, unfortunately, their navigation is much interrupted by falls nearer to the St. Lawrence than those of the Bersimi. The water of the river Outard is entirely white, occasioned by large quantities of impalpable sand and clay being held in suspension; and the vessel, in sailing through it, by displacing the superficial stratum of lighter and fresh water full of these earthly particles, left in her wake a dark blue streak, which could be traced as far as the eye could reach. This sand and clay is the deposit of the rivers, which, in the course of ages, have formed the alluvial point or peninsula of Manicougan, and also the dangerous and extensive shoals of the same name.

In the old charts, a shoal is laid down just to the westward of the Moisie river, the first to the eastward of the Bay of Seven Islands. As we approached its supposed situation, the water was found to be so deep, that the existence of it was doubted. These were hasty conclusions, for suddenly, in the space of two minutes, we passed from the depth of thirty-five fathoms with the patent lead, to twelve feet with the hand lead. In this dilemma, the helm was instantly put so as to sheer the vessel off shore to the southward, in which direction we naturally supposed the water was most likely to deepen. This, however, did not prove the case; so we tried the other way, and half a dozen others besides, till at last we got into ten and a half feet water, just one foot to spare. At

this moment, the look-out man on the fore-yard called out lustily, "Breakers a cable's length on the larboard bow!" One directly said we had better go to the southward, another said to the northward, and a third, that we should go to the eastward; doubtless, "in the multitude of counsellors there is wisdom," but we had no time to profit by it. At least, so thought the captain, for he instantly ordered the helm a lee, and directly the vessel began to drop astern; the head-yards were braced sharp round, and the after-sails were brailed up. Her ladyship is well accustomed to these manœuvres, and, unlike most other ladies, generally does as she is bid. She therefore turned quietly round in her own length, and we steered back again as nearly as we could, leaving the experiment of going to the northward, the southward, or eastward, to be settled at some other time. Thus we narrowly escaped sticking fast upon a shoal, at two miles' distance from an open coast, on which there is a heavy swell, and a surf so high, that boats cannot land on it in six days out of seven.

The shore, from the Bay of Seven Islands to Mingan, is formed of high granite hills, fringed with detached rocks at no very great distance from it, but having very deep water close to them, so that it is exceedingly dangerous in foggy weather, as there is little or no warning from the lead, and scarcely any anchoring ground. Several very considerable rivers enter the Gulf of St. Lawrence in this part, but none of them are navigable far from their entrances, from being interrupted by falls and rapids. The Manitou river, which is about half way between the Bay of Seven Islands and Mingan, is one of these. The falls on this river are of the most magnificent description. An immense sheet of water rushes over a precipice of porphyry, the height of which is one hundred and thirteen feet.

From the manner in which the hills are drawn in Des Barres' charts, and from the neighbouring main land being of granite, the Manicougan Islands were supposed to be of the same formation, and we were therefore not prepared for their appearing like low white reefs destitute of wood. The Mingan Islands, and the Paroquettes, the western islands of this chain, are of this description, the rest being covered with wood. These islands are all formed of shell limestone, similar to that of Anticosti, the north side of which is plainly visible from them, appearing in moderately high table lands, intersected by parallel and steep-sided valleys, having an east-north-east and west-south-west direction.

Off the south side of the Mingan Islands are the most dangerous reefs of flat limestone, and many detached shoals, but the St. Lawrence is of a moderate depth as far as Anticosti. All this is new,—nothing of the kind having been stated by Des Barres, who appears not to have examined the outside of these islands, their most essential part. The Mingan Islands are extremely

curious, the limestone being broken and mouldered away, so as to leave immense columns and masses assuming the appearance of flower-pots, similar to the annexed sketch, which is a representation of the same sort of rock on the south side of the St. Lawrence.



Sometimes extensive groups of these columns, of different shapes, are seen standing on a platform raised several feet above high-water mark, appearing, at a distance, like the ruins of a large city.

Mingan harbour is small, but safe, and has some very beautiful scenery. On one side there is a precipitous, but not very high, island; on the other, a beautiful sandy beach, which is free from rocks, and may be nearly approached by vessels. In the rear of the beach stands the Hudson's Bay Company's trading post, in the charge of a "*Grand Bourgeon*," or chief factor, who has his wife and family, besides a governess, living with him—a personage somewhat rare in the wilds of Canada: but the factor has, moreover, the good fortune of being well known for his hospitality; a character which he has obtained from his attention to visitors, who amuse themselves by killing salmon in the rapid stream of the adjacent river.

On our return up the St. Lawrence, we were overtaken by one of those north-east winds which so frequently prevail in this river, accompanied by a thick fog; however, we felt our way up to Bic Island with the lead, and anchored under its western end without seeing the land, but distinctly hearing the breakers on each side of us. Soon after we had anchored, the fog cleared away for a few minutes, and discovered, to our no small surprise, a large ship within a mile distant from us, sunk in the river up to her lower yards, with her sails loose, and flapping about in the wind. The captain, on seeing her, instantly despatched an officer in his gig, to see if there were any people on the masts and rigging, but he found them all on the rocks of Bic Island, with a large pig tied to a tree, and provisions enough to last them about two days,—all that they had been able to save from the wreck.

This ship proved to be the *Jane of Belfast*, which had run on shore in the fog of the preceding night on Biquette Island, the master not knowing that he had been running fourteen or fifteen miles an hour in about seventeen fathoms water. The fact is, that

these people never think of heaving the lead, and assert that, if they did so, they have no charts which shew the soundings. Seeing that the vessel was irretrievably lost, we took the crew to Quebec. Had we not found them, the weather afterwards was such, that they would all have been starved before assistance could have reached them.

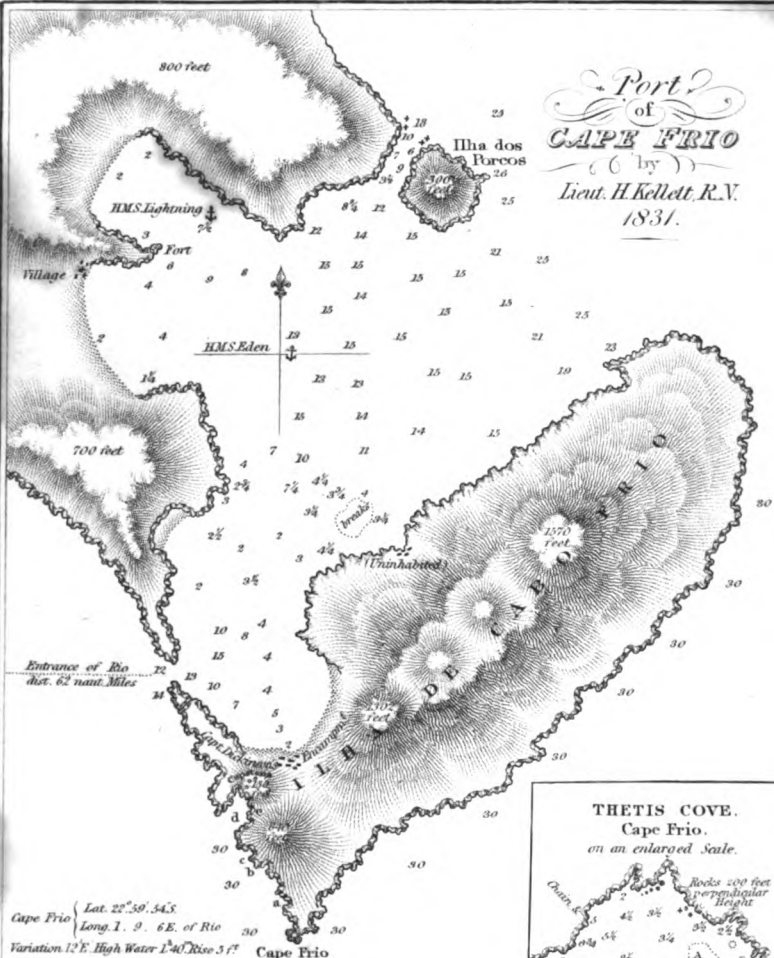
Two days after this occurrence, we anchored in the evening off the South-West Razade Islet. The fog was so thick, that it was impossible to see half a cable's length before us; the night also was coming on, and we felt no inclination to run further, as we could not be certain of our exact position. In order to ascertain this important point beyond a doubt, and to be in readiness, should circumstances require us to leave our anchorage, and run up the river in the night, two boats were sent, to find out what island it was on which we heard the breakers so distinctly. One of them was pulling in, when, on a sudden, the officer commanding her found himself close to a merchant brig steering S.S.W., in six fathoms' water, nearly across the river, with his studding-sails set, low and aloft. The brig was about three-quarters of a mile from the rocks before her, on which she must inevitably have gone in a few minutes, if the boat had not stopped her.

The officer in the boat immediately hailed, and directed those on board instantly to round the vessel to the wind, and anchor. He next went on board, and, on asking the master of the brig if he knew where he was, he answered, "Not exactly," but that he had seen the west point of Anticosti four days before, and, moreover, had also seen the breakers of the north shore close to him two or three hours ago, which had been the reason of his standing over to the southward. On being asked again, whereabouts he thought he might be, he replied that, "By his reckoning, he could not be very far from *Cape Chat*." These are the men to whom it too often happens that the safety of a ship, and the lives of all on board, are entrusted. He was about one hundred and thirty miles out of his reckoning, in three hundred and sixty.

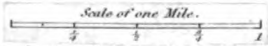
The officers in charge of the boats had been told, on leaving the vessel, that after they had been absent a certain time, we would commence firing guns, blowing a bugle, and ringing our bell, to guide them back to us through the fog. We had no sooner commenced these signals, than we were answered by a dozen vessels, of the presence of which we had before no idea. There were guns of different sizes firing, and bugles, French horns, tin horns, cow horns, bells, &c., all employed at once, and producing such a confusion of noises in all directions, and such a mixture of sounds, that had it not been for the smart report of our brass guns, which distinguished them from the rest, the boats would never have found us before night. However, they reached us in safety with the intelligence we required, and we soon after found our way up to Quebec.

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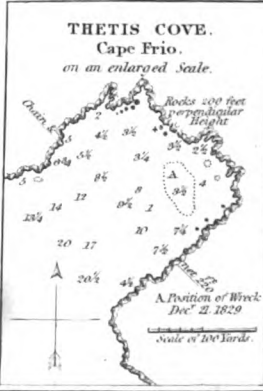
Port
of
CAPE FRIO
(by)
Lieut. H. Kellett R.N.
1831.



Cape Frio { Lat. 22° 50' S. E. S.
Long. 1. 9. 6 E. of Rio
Variation 12° E. High Water 1.40. Rise 5 ft.



- a Cove in which *Thetis* struck & was dismantled.
- b Points on which she struck after receding out of cove a & on c 40 of the Crew landed, climbed the Rocks & steep hill & came down on the neck e which being 70 or 80 feet high & the lowest part of the Cliff a rope was got from the Wreck & the remainder of the Crew saved.
- d Is where the Derrick was rigged out in length 155 feet over the Wreck & from which the bell was worked. It has been named *Thetis* Cove.



II.—*Sketch of the Operations at Cape Frio, to recover the Treasure and Stores lost in His Majesty's late Ship THETIS.*

(Concluded from page 28.)

The success which had attended the perseverance of Captain Dickinson and his party in their arduous enterprise, seemed likely to be improved by means of the large diving-bell from the derrick. The principal impediment to their operations was the violence of the surf, to which the open nature of the cove exposed them; and from this cause alone, they were repeatedly compelled to relinquish their work. On the 12th of April, the derrick had been secured in its place; the large diving-bell was ready; and the next step was to suspend it in a manner that would allow of its being lowered into the sea and raised again, according as circumstances might require. Preparations for this were accordingly made, while, at the same time, the small diving-bell was kept at work as usual from the launch, which on more than one occasion was nearly lost, by being exposed to the roughness of the sea, produced by the sudden shifting of the wind. In the course of these proceedings with the small bell, considerable progress was made in clearing away such of the loose pieces of rock among which the fragments of the ship were buried, as its limited size would allow, and quantities of dollars were occasionally recovered.

The arrangements for working the large diving-bell were completed by the 6th of May, previous to which time Captain Dickinson had obtained a reinforcement of his party from the Warspite at Rio. The various fastenings of the derrick were completed, the stage for the air-pump was ready, and the large diving-bell was taken out of the harbour, and suspended from the derrick. Nothing however could be done with it on this day, in consequence of the rough state of the sea in the cove; and it was not before the 11th of May that the first descent to the wreck was made with it. On this occasion it was found to answer every expectation, and it continued in operation with success. Large masses of rock, beneath which pieces of the wreck lay buried, were removed, and many dollars, besides some stores of the ship, were saved.

On the 13th of May, H.M.S. Eden, commanded by Captain W. F. W. Owen, arrived at Cape Frio on her way to England, Captain Owen having been directed to convey home whatever treasure might be ready. By the Eden, which sailed on the 18th of May, Captain Dickinson had the satisfaction of sending home 123,995 dollars.

The launch belonging to the Warspite had hitherto been kept at work whenever it was possible, with the small diving-bell, but that ship requiring her boat, she left the cove for Rio Janeiro on the 16th of May, with her crew. The small bell, however, was

not to remain unemployed at such a momentous period, and a Brazilian boat was ordered to be substituted immediately for that of the Warspite.

On a retrospect of the whole proceedings, from their commencement to the time that the first shipment of treasure was made in the *Eden*, and on contemplating the numerous dangers to which the party employed in this hazardous service were continually exposed, it is a matter of surprise that some fatal accident had not yet occurred. The difficulties of placing the various fastenings for the derrick, and of raising this enormous machine after it had been finished, into its proper place, besides accidents to which the men in the boats and small diving-bell were continually exposed, and the fatiguing nature of the service in general, frequently endangered the lives of those who were employed in it; and although the small bell had been overturned by the violence of the sea, and other accidents had occurred, no lives had yet been lost: indeed, the few accidents that had happened, although they had produced considerable delay, were trifling when compared with what was now at hand.

The drawing at the commencement of the first number of this work, by Mr. T. Wood, and the plan by Lieut. Kellett of H.M.S. *Eden*, which accompanies the present, will materially assist the reader in forming a correct idea of the operations at Cape Frio, and are both creditable to the talents and judgments of these officers. The former affords a view of the immediate scene of operation, with the derrick projecting over the wreck, while the latter exhibits the localities of Cape Frio, and the various points where the *Thetis* struck before she finally drifted into the cove, to which, with her remains, she has left her name. At the point 'a' where the ship first struck, the cliff or piece of timber which projected over her bow, namely, the bumkin, was forced into one of the interstices of the rocks, and broken off, and it still remains in the same position, as a memento of her loss.

On the 18th of May, a gale of wind came on from the southwest, which on the following day had increased so much, that apprehensions were entertained of the whole proceedings being stopped for some time. An inspection of the plan will shew the exposed situation of the cove, and it may easily be imagined that the smallest breeze would produce a commotion in the surface of the water; but when this increased to a gale, the violence of the waves must there be truly awful. Such it was on the morning of the 19th of May. The waves in the cove rose half way up the overhanging cliffs to a height of nearly a hundred feet, and caused much anxiety in the minds of Captain Dickinson and his party, for the safety of the derrick. This object of their solicitude, the completion of which had cost so many days of laborious exertion, betrayed its inability to withstand much longer the repeated

shocks of the waves, and in the course of the morning the contents of the stage were washed away.

At 10 A.M., a tremendous wave broke the derrick in two pieces, about twenty feet from the step; soon afterwards, it separated into five different fragments, and thus perished this enormous machine, with the assistance of which not more than 50,000 dollars had been saved.

Discouraging as this misfortune must have been, the first concern, as a matter of course, was to repair it; and the former plan of stretching a cable across the cove, from the summits of the opposite cliffs, was determined on. While the preparations for this substitute for the derrick were going forward, the Brazilian boat being ready to work the small bell, was taken to the cove, and search was made for the air-pump which had been washed off the stage. In the course of this search, an accident happened to the hose of the small bell, which obliged George Dewar again to make his escape from beneath it, and to swim to the surface, by which he received considerable injury from the rocks, and was taken up in a very exhausted condition. The air-pump and the large diving-bell were recovered on the following day, but the latter had received so much injury that it could not be used, and another was directed to be prepared in its stead, while the small bell continued at work with some success.

Another reverse of fortune happened on the 30th May, by a sudden change in the weather, which during the morning had been fine, and had allowed of the bell being worked. This no sooner took place, than the operations were stopped, and the boats were compelled to make their way out of the cove without loss of time. The boat containing the small bell was taken in tow by the others, but such was the violence of the wind and waves, that having gained the outside of the cove with great toil and difficulty, to proceed further was found to be impossible. In this dilemma, prompt measures were required. Captain Dickinson therefore directed the boat to be taken back to the cove, and anchored without loss of time: this being done, the bell was to be lowered into the water, and the boat's crew to be landed in the safest part of the cove. Apprehensive of losing the air-pump, Captain Dickinson took it into his own boat, and immediately made for the harbour. It was not without the greatest difficulty he succeeded in reaching it,—the small dimensions of the boat, and the additional weight of the air-pump, rendering her unequal to encounter the boisterous sea. Every person in her, with the exception of two who continued rowing, were constantly employed in baling out the water, and when they at length gained the harbour, the whole were nearly exhausted.

The small diving-bell, on this occasion, had been left at the bottom of the cove to the mercy of the waves; but the alternative of endeavouring to bring it away would, in all probability, have cost the lives of the whole party. In this gale, all the buoys that

had served as marks for the different situations of the wreck, were washed away; and with the condition of the launch, and the small bell, the general aspect of affairs was any thing but encouraging; nor was it improved when the small bell was recovered, for this was found to be in so shattered a condition from the blows which it had received by the rocks, that it was of no use. The operations in the cove were now totally suspended: the derrick had been destroyed, the two diving-bells were unserviceable, and all the buoys had disappeared. Captain Dickinson, however, had his resources at hand; the same persons who had constructed the diving-bells could make others; and no sooner was the small bell discovered to be broken, than orders were given to replace it with another. In the space of six days this was accomplished by the armourers and carpenters, under the able superintendence of Mr. Jones: indeed, the spirited exertions of every one employed in this arduous service, proved that they were actuated by the same zeal, and shared in the same anxiety for the attainment of their object, which, from the commencement, had influenced their gallant commander. On a duty of this nature, a saving of time was frequently of the greatest importance, and on these occasions regularity in meals, and rest, were lost sight of;—all danger was disregarded, each difficulty was overcome, and every privation was willingly endured.

An accident occurred on the 10th of June, which threw a temporary gloom over the whole party. Mr. Moore, the engineer, who had accompanied Captain Dickinson from Rio Janeiro, with Mr. Linzee, mate of the *Adelaide*, tender, and a seaman, were unhappily drowned by the sinking of a boat.

While the large bell was constructing, the small one, having been completed, was again worked with considerable success; and another quantity of dollars, amounting to 126,500, were forwarded to England by His Majesty's Packet *Calypso*. This vessel sailed from Cape Frio on the 21st June, and on the 30th another large quantity of treasure was found beneath a rock, which, with much difficulty, had been removed. One of the *Lightning's* hempen bower cables was secured across the cove as a suspension cable for the large bell, which was first used on the 9th of October; after which, the operations seem to have proceeded very successfully. Considerable difficulty, however, was found in keeping the iron bolts properly secured in the rocks, for the various fastenings. This arose from the nature of the rock, which, after the bolts had been sunk firmly in it with much trouble, on being exposed a few days to the action of the atmosphere, split into small fragments. Thus the bolts were repeatedly loosened, and delay was occasioned by replacing them. The quantity of treasure saved from the wreck of the *Thetis*, and now deposited in the cellars of the Bank of England, amounts to £142,000.

Sufficient has now been stated to inform the reader of the manner in which so much valuable property has been saved,—of the great personal danger to which the party employed were continually exposed,—and of the skill and determined perseverance displayed by Captain Dickinson throughout this hazardous and difficult service. Such a service, among the occupations of peace, ranks equally high with the brightest achievement of war: if the latter has shed lustre on the naval profession, the former reflects equal honour on those by whom it was accomplished, and adds no less to the character for enterprise which distinguishes the British seaman.

The duty must not be omitted of acknowledging that much of the foregoing account of this service has been obligingly communicated from an original authentic source, in addition to the particulars which have been gathered from the columns of the *Portsmouth Herald*,—a newspaper distinguished by superior information on nautical matters, and in every way worthy of the patronage of the naval profession.

The following account of the Island of Cape Frio is copied from the *Portsmouth Herald*, as a conclusion to our sketch of the operations at that place:—

“The island is about three miles in length, and one in breadth, and nearly covered with an almost impenetrable wood, through which we have cut roads, leading to the cliffs, beneath which the unfortunate Thetis was lost. Until our arrival, the island was totally uninhabited. We have, however, built a village, which our people have denominated St. Thomas's, and the natives of a town a few miles distant have adopted the name. It is composed of houses for the captain and all the officers of every class separately, and one large one for the seamen's and marines' work-shops, victualling-office, and store-houses. A very pretty house of wood and grass has just been finished for Captain Dickinson in the centre, of which you may form some idea by comparing it in your own mind to Farlington Church, but it is only about one-sixth part of the size, and which (the Brazilians having styled our Captain 'El Rey de Cabo Frio') is called 'the palace.' In one respect the title applies tolerably well, for 'the King,' while there, may truly say, 'I am monarch of all I survey.' St. Thomas's stands on an acclivity steeper than Portsdown Hill, at about one hundred yards from the beach, with evergreen shrubs bearing beautiful flowers in the interstices between the houses; the aforesaid 'palace' standing most conspicuous, and having about twenty of those magnificent plants called the 'uca gloriosá' in the rear, in full bloom, varying from fifteen to twenty-five feet in height. The gun-room, officers' and midshipmen's residences, are at about twenty yards' distance on either side, in a direct line, with the beautiful cactus of both descriptions (yellow and red) here and

there, in the space between, peeping through shrubs of the most luxuriant green, and each exhibiting its less gaudy but equally pretty blossoms, as if in humble demeanour paying respectful court to the uca. This description will apply to the whole scene, although particularly to this spot. The other buildings diverge at different angles from the palace, so that 'His Majesty' can command at one view the habitations of all *his subjects*, which cannot be said of any other monarch upon earth! Perhaps you can now form some tolerable notion of our village; and however romantic this description may make it appear to you, I assure you it is not by any means a comfortable one. Beautiful flowers abound in every part, and these are not confined to the small class of plants, as we have large trees covered with the most luxuriant bloom. There is one, in particular, a short distance from 'the palace,' which I admire exceedingly. The blossoms are of a bright lilac colour, and the tree stands in the midst of hundreds of others, like some superior beauty at an assembly, the surrounding crowd gazing in mute admiration, while the contiguous stately palms, gracefully bending with every breeze, may be compared to the beaux making their obeisances, without venturing to approach. The comparison might be carried still further—for this stately tree, not satisfied with what nature has bestowed, borrows ornaments from numerous creepers and parasites, shining in beauties not its own. But I must not go on in this style, or I shall get altogether out of my depth. Amongst innumerable others of the creeper tribe, is a beautiful scarlet passion-flower, which bears a cluster of about nine blossoms, on a stalk something of the nature of a scarlet bean. It is exceedingly elegant, and is to be seen adhering to many of the highest trees in the island. We have reptiles in most extensive variety, from the alligator to the little green lizard, and snakes from one to thirty feet in length, many of which are very beautifully variegated. One of the largest of them the other day did 'His Majesty' the favour to reach about ten feet of his length, from the bushes, into his office, where one of the clerks was writing. He appeared in a harmless mood, as if on a deliberate tour of inspection. There was soon, however, a general alarm, and cutlasses, muskets, sticks, and other weapons, were in great request, and he soon found it high time to be off. He must have been full twenty-five feet in length. The next day, a very handsome one, ten feet long, was caught in the centre of a coil of rope. The skin was sent to 'His Majesty.' Beautiful birds also abound, but few of them sing; and there are myriads of insects, many of which are very beautiful, but more are very troublesome. Half our men have been lame at a time, from a kind of flea called the jigger."

(A sketch, shewing the condition of the Fragments of the Wreck at the bottom of the Cove, as seen from the diving-bell, will appear in our next number.)

III.—*British America*, by JOHN M'GREGOR, Esq. W. Blackwood, Edinburgh; and T. Cadell, London. 1832.

ALTHOUGH Mr. M'Gregor's book does not exactly bear that name which would entitle it to a place in this department of our work, yet when two volumes, containing information on so important a subject as our colonies, come before us, we have no hesitation in taking them up. But were we indeed over fastidious in doing this, we might satisfy ourselves with the reflection, that the present work treats much on islands and sea-girt shores.

British America affords a spacious field for research. A glance at the map, even Colonel Bouchette's latest, betrays many a blank and unexplored district, where roams

—“The poor Indian, whose untutored mind,
Sees God in clouds, or hears him in the wind;”

and we consider Mr. M'Gregor's work as the harbinger of many more on this branch of our colonies, one that is increasing daily in importance and value. Such works may not be very long in making their appearance. Each year we see new travellers setting out on interesting expeditions, and the Literary and Historical Society of Quebec, formed not long ago, including the names of all who are lovers of knowledge in that part of British America, has already produced, in the two first volumes of its Transactions, ample proof of its desire to extend discovery into the unknown regions so near the capital.

Mr. M'Gregor's work was much wanted. With the means which, he tells us, have been placed at his command, and with the time in which he was enabled to form his observations, he could not fail in producing a valuable book. We are quite of his opinion, that the actual state of the British empire in North America, in all its relations, has been imperfectly understood; and from an unfortunate deficiency of information, in more instances than one has this country suffered the loss of territory, which may one day prove of serious consequence.

The subject before us is divided into several books, the first of which contains an historical sketch, as an introduction to the whole work, and details the various events of Northern America, from its discovery and settlement, to the independence of the United States. The following picture, given by Mr. M'Gregor in a note on the condition of the early settlers, is fraught with examples of the lengths to which religious fanaticism will lead, and savours much of the times of England during the commonwealth.

“The extravagances into which fanaticism will lead or drive the human passions, were never more conspicuous than in New England. The laws of this colony punished witchcraft, blasphemy, worshipping of images, &c. with death. The Quakers were first imprisoned, then most cruelly and severely whipped, and afterwards banished.

“So far did those fanatical Puritans, men who would ‘hang a cat on Monday, for killing a mouse on Sunday,’ go, that for men to wear their hair long was considered not only indecent and anti-scriptural, but a most offensive abomination to the Deity. A proclamation exists among the records of Massachusetts, which declares, that ‘We, the magistrates, in our zeal for the purity of the faith, expressly condemn the impious custom of letting the hair grow, as indecent, *dishonest*, and horrible to sober-minded persons, inasmuch as it corrupts good manners, and as a custom introduced into England by the Papists, in *sacrilegious* contempt of God, who declares in his holy word, that it is a shameful practice for any man, who has the least care for his soul, to wear long hair. We, therefore, being justly incensed against this scandalous custom, do desire, advise, and earnestly request, all elders of our continent, zealously to show their aversion from this odious practice, and to exert their utmost powers to put a stop to it, and especially to take care that the members of their church be not infected with it.’

This is following the dictates of St. Paul with a vengeance.

“A Mrs. Hutchison, the heroine of the female fanatical society of Boston, and at whose house meetings for theological disputes were held nightly, declared in her preachings, that a ‘*radical change*’ in the worship of God was absolutely necessary, before the colony could expect the smallest blessing, or the least favour, from the Deity. She maintained, that the doctrine of good works was rather an impediment, than necessary to obtain salvation; and that ‘the covenant of works is a mere broken reed, which is useless and dangerous, and must be expelled by the impression of the Spirit.’ These were the darling themes of this fair Antinomian.

“Her enemies hatched a story against her, which travelled rapidly over the country, and which enabled them to expel her from the colony. It asserted, that she had at one birth brought forth thirty monsters, answering in hideousness and number to the abominable errors she had promulgated.

“She was accordingly banished to Rhode Island. This unfortunate woman, driven from her house during an inclement season, miscarried, and suffered great misery on the occasion. The pressure of poverty or ill treatment drove her afterwards to a Dutch settlement in the state of New York, where she was, with all her family, butchered by the Indians.

“During this religious calamity, the ladies were pretty anxious to establish the right of absolute rule in theological discussions. The wives, in fact, influenced their husbands, and the young women their lovers, so completely, that they generally maintained the claim they arrogated.

“The excesses which the belief in witchcraft produced were, if possible, still more extraordinary. This horrible superstition first appeared in the house of a minister at Salem. He had two daughters, who, after the ages of twelve years, were afflicted with hysterical convulsions. The father thought them bewitched; and, fixing his suspicions on an Indian woman, who lived in the house, by the severest whipping he extorted from her the confession of being a witch.

“This poor savage was accordingly hanged, and her body exposed to birds of prey. Other women, seduced by the pride of exciting public attention, immediately brought themselves to believe, that *hysteria*, which proceeded only from the nature of their sex, was owing to the influence of infernal agency. Three persons were consequently suspected by them of sorcery, and most speedily imprisoned, condemned, hanged, and their bodies, agreeably to the law of the colony, exposed to wild beasts and birds of prey. Fifteen or sixteen

others, with the lawyer who refused to plead against them, were hanged a few days after.

"There was, in short, no possible security for a time against the infatuated suspicions of persons influenced by wild visionary delusions. The innocence of youth, the infirmities of, and the respect due to age, the most dignified employments, virgin modesty, virtue itself, afforded no protection against the mad bigots who figure among the annals of Massachusetts.

"Children of ten years of age were put to death. Girls were denuded, and the signs of witchcraft searched for with most indecent curiosity. Spots, which appear as the effect of scurvy on aged men, were considered undeniable signs of infernal power. If the public functionaries refused to punish, they were consequently guilty of the infernal crime of sorcery. The most active accusers, however lamentable the circumstance, were the very ministers of religion. Dreams, apparitions, and fear, increased these prodigies of folly and wickedness. Fanaticism seized its victims at pleasure, and by the most cruel tortures extorted confessions. The colony, in short, was likely to be destroyed, when this terrible malady ceased, almost suddenly, and the consequent remorse and repentance for the wicked and horrible crimes of which the people were now sensible of having been guilty, were manifested by a solemn and general fast."

Although America possesses great advantages for facilitating colonization, arising from the rapid transfer which she affords by means of her rivers, from one part to another, yet her impenetrable woods, it is well known, added to political obstacles, very much retarded its progress. Nor were the Indians to be disregarded, as we find by Mr. M'Gregor's remarks on this subject.

"Some Scotch, and a few Irish families, together with a few German and Swiss Protestants, found their way before this time to Nova Scotia and Prince Edward's Island (then called St. John's.) A few Highlanders, also, many of whom were disbanded soldiers, settled at Glengarry, and other places above Montreal. It was not, however, until after the American revolutionary war that emigration to our colonies, of any great consequence, took place. From that period to the present time, notwithstanding the vast swarms that have continued annually to flock to the United States, not less than from eight to eighteen thousand settlers have arrived yearly in British America from England, Scotland, and Ireland, while their departure from the United Kingdom has scarcely been observed.

"From the best authenticated accounts, the privations which the early colonists endured, and the hardships to which circumstances, connected with a wilderness country, subjected them, were severe in a degree of which those who now plant themselves in America have scarcely a conception. They had not only to suffer the miseries of hunger, and the want of almost every convenience to which they had been accustomed, but they could scarcely enjoy even that relief from toil which sleep usually affords, from the dread of being burnt in their habitations by the Indians, or of becoming victims to the murderous tomahawk or scalping knife of those savages."

"In the countries which now form British America, with the exception of Nova Scotia, the colonists were not so often doomed to experience the ven-

* Before the surrender of Louisburg, rewards were given by the French to the Indians for every English scalp they produced, in much the same way as premiums are at present paid by some of the colonial governments for the snouts of bears, to encourage the destruction of those animals. The terrible ferocity of the savages was also most wickedly encouraged during the American war; and it was disgraceful to the British authorities at the time to encourage and reward such cruelties.

geance of the bloody spirit of the Indian tribes; yet the hardships they had to encounter and overcome in other shapes were almost incredible. The winters were either much more severe than at present, or the sufferings of the first settlers made them describe the frosts as more intense, the snows deeper, and the duration of cold longer.

“The non-existence of roads, the want of boats, or even for some time of canoes, and the emigrants' entire ignorance of managing the latter, rendered it a business of great difficulty to pass from one part to another of a country covered with thick forests, and intersected with rivers, lakes, and branches of the ocean. The use of the axe also, or the art of chopping, is an acquirement quite indispensable in a wooded country, with which most new settlers are unacquainted. With this tool, a gun, one or two hoes, and a pot, an American back-woods-man will make his way through, or plant himself and family in the midst of, a most dreary forest, and secure, at the same time, the means of subsistence.”

Mr. M'Gregor then pays a well-merited tribute to the characters of the early settlers in general, who, while they overcame these difficulties, did not lose sight of the necessary establishments for the instruction of their youth. His comparison also of the treatment experienced by the respective colonies of France, Holland, Spain, and Portugal, from their parent states, with those of our own, is at once just and forcible.

As an historical work, those broad traits of character, to be found in modern America, must not be sought for in the one before us; a subject which Mr. M'Gregor considers as “being unworthy the attention and beneath the dignity of a respectable traveller.” But we must dissent from his doctrine; and it is fortunate for our stay-at-home countrymen, that all travellers are not of his opinion, otherwise they would know little of the manners and customs, the good and the bad qualities, of any class of people beyond their own immediate shores. Unfortunately, a traveller, who relates his story on returning from his travels, will exert the power he has acquired in producing impressions on most of his readers, respecting the people he has met with, favourable or unfavourable, according to his own. The mischief arising from it is evident. His readers, who may be unacquainted with his character, lay down his work imbued with prejudice, which the most favourable reports of a succeeding traveller will not entirely eradicate. Unhappily, a prejudice has long since taken root between our countrymen and the Americans, not, perhaps, so much from this cause as from the political relations between the two countries; and on this particular point, we cannot help quoting the following passage from Mr. M'Gregor's book, which, he assures us, is a fair specimen of the general feeling. It is an observation made to him by an American M. P., which bears all the traits of being genuine.

“‘Sir,’ he said, ‘if I were to punish men for abusing countries, I would first knock down the person who stigmatized my own, and, immediately after, the one that abused yours; and you may depend upon it, sir, that this feeling is more general among us than even we ourselves think.’”

And why, we would ask, should not travellers relate what they hear and what they see? They should be the last to distort facts, either by lavishing praise where it is not due, or glossing over foibles which should be held up to notice; if they abstain from doing this in their writings, while we make allowances for the tone of mind, and the circumstances, under which their observations are recorded, we shall be enabled to arrive at a tolerably fair conclusion, both regarding them and the people they have visited.

In our next number we shall return to Mr. M'Gregor's work. It contains a great deal of valuable information, historical, geographical, and statistical, and will be read with much interest.

IV.—*Voyage of His Majesty's Ship, Blossom, to Beering's Straits.*

(Continued from p. 34.)

FROM Easter Island the Blossom pursued her course to the westward, and soon after arrived at Ducie Island, the first of that remarkable group of the Low Archipelago, which is distinguished by having a large lagoon in its centre, "partly enclosed by trees, and partly by low coral flats, scarcely above the water's edge." The island is uninhabited, and Captain Beechey, having completed his observations on it, continued his voyage towards Elizabeth Island. This, which is also uninhabited, is stated to differ essentially from all others in its vicinity, and as belonging to a peculiar formation, very few instances of which are to be found. It is composed entirely of dead coral, being five miles in length, and one in breadth, with a flat surface, nearly eighty feet above the sea.

The celebrated Pitcairn Island was seen on the 4th of December by the officers of the Blossom. The history of the mutiny on board the *Bounty*, and the subsequent proceedings on this island, now no longer the happy abode of the descendants of Adams and his associates, forms a considerable feature in this part of Captain Beechey's narrative. But sufficient of it has already been before the public, and we must be content with referring our readers to the work before us, for an original account of the whole of that event, from the statement of Adams, the last of the survivors, attested by his own signature, of which Captain Beechey had given a fac-simile copy. He has also enriched this part of his work with some beautiful views in the island, and a likeness of Adams, who, instead of the desperate adventurer, had long become the virtuous protector of a happy colony.

On the 23d of December, the Blossom examined the small uninhabited island named Oeno, where one of her boats was destroyed by the surf, and a seaman in consequence was drowned. Crescent Island was next seen, and although only a small coral island, with a few trees on it, was estimated to contain about forty

inhabitants. Without stopping at the latter, the Blossom continued her course to the westward, and with the intention of obtaining a supply of water, besides making a survey of Gambier's Group, Captain Beechey, after an unpleasant encounter with the natives, anchored his ship within the extensive surf by which these islands are surrounded. The insatiable propensity for pilfering, on the part of the uncivilized natives of these islands, had already produced dissension at Easter Island, and was likely to be attended with similar effects at Gambier's Group. The utmost vigilance was required to repress this inordinate propensity: Captain Beechey considers that the natural disposition of these people is highly unfavourable to intercourse, and that they are restrained from acts of violence and aggression, only by the operation of fear. In the first number of the Nautical Magazine, the chart of this group, resulting from the survey made during the Blossom's visit, was noticed as being lately published by the Admiralty; the following extract from Captain Beechey's work will serve to illustrate its history.

“ This group was discovered by the ship *Duff*, on a missionary voyage, in 1797, and named by Mr. Wilson, her commander, after Admiral Lord Gambier. It consists of five large islands and several small ones, all situated in a lagoon formed by a reef of coral. The largest is about six miles in length, and rises into two peaks, elevated 1248 feet above the level of the sea. These peaks, which were called after the *Duff*, are in the form of wedges, very conspicuous at a distance, and may be seen fourteen or fifteen leagues. All the islands are steep and rugged, particularly Marsh Island, which at a distance resembles a ship. The external form of these islands at once conveys an impression of their volcanic origin; and, on examination, they all appeared to have been subjected to the action of great heat.”

The number of the natives who inhabit this group, Captain Beechey estimates at fifteen hundred. They are in general tall and well made, but are subject to a kind of leprosy, which is attributed to their exposure to the sun, and their frequent immersion in salt water.

The Blossom had now fairly entered the Low Archipelago, and, on leaving the Gambier group, passed successively the various islands which lay in her route to Otaheite. Captain Beechey determined the position of a great number of these. Among them were several islands till then unknown; besides which, he considers that there are others still remaining to be discovered. On the interesting subject of their formation, which has lately employed the speculations of geologists, the present work affords us a view and section of one, with the following remarks.

“ All the points or angles of these islands descend into the sea with less abruptness than the sides, and, I think, with more regularity. The wedge-shaped space that the meeting of the two sides would form in the lagoon is filled up by the ledges there being broader; in such places, as well as in the narrow parts of the lake, the coralline are in greater numbers, though, gene-

rally speaking, all the lagoons are more or less incumbered with them. They appear to rise to the surface in the form of a truncated cone, and then, their progress being arrested, they work laterally, so that if several of them were near each other they would unite and form a shelf, similar to that which has been described round the margins of some of the lagoons.

"The depth of these lagoons is various: in those which we entered, it was from twenty to thirty-eight fathoms, but in others, to which we had no access, by the light-blue colour of the water, it appeared to be very small. It is, however, tolerably certain that the coral forms the basis of them, and consequently, unless depositions of sand or other substances, obnoxious to the coral insects, take place, their depth must depend upon their age."—

"When the attention of men of science was called to these singular formations by the voyages of Captain Cook, one opinion, among others, respecting their formation was, that they sprung from a small base, and extended themselves laterally as they grew perpendicularly towards the surface of the sea; and that they represented upon a large scale the form which is assumed by some of the corallines. In particular, this theory was entertained by Mr. John R. Forster, who accompanied Captain Cook on his second voyage and visited several of the coral islands, and was founded, no doubt, upon the experience which he had derived upon that voyage. But considering the extent of some of these islands, it is evident that, if this be their form, the lithophytes, the animals which construct them, must commence their operations at very great depths, a fact which is doubted by naturalists. The general opinion now is, that they have their foundations upon submarine mountains, or upon extinguished volcanoes, which are not more than four or five hundred feet immersed in the ocean; and that their shape depends upon the figure of the base whence they spring. It would be immaterial which of these theories were correct, were it not that in the latter instance the lagoon that is formed in all the islands of this description might be occasioned by the shape of the crater alone, whereas, in the former, it must result from the propensity of the coral animals, and this, if true, forms a remarkable and interesting feature in their natural history. Mr. Forster* thought this peculiarity might arise from the instinct of the animalcules forming the reefs, which from a desire to shelter their habitation from the impetuosity of the winds, and the power and rage of the ocean, endeavoured to construct a ledge, within which was a lagoon entirely screened against the power of the elements, and where a calm and sheltered place was by these means afforded to the animals in the centre of the island.

"Another reason why the consideration of the nature of their foundation is not immaterial, is, that if the form of the islands arose from the peculiar shape of the craters, and it be admitted that the lithophytes are unable to exist at greater depths than those above-mentioned, we shall have examples of craters of considerably larger dimensions, and more complete in their outline, than any that are known upon the land, which, if true, is a curious fact. Until the voyage of the Blossom, it was not generally known that the lagoons in these islands were of such depths, or that the wall of coral which encircles them was so narrow and perfect, as in almost every instance it has been found; nor that the islands were of such dimensions, as they were designated groups, or chains of islands, in consequence of the wall being broken by channels into the lagoon; but on examination, the chain is found continuous under water; and, as in all probability, it will in time reach the surface and become dry, the whole group may be considered as one island."

A letter written by Captain Beechey, while employed among these islands, will serve to convey a correct idea of their inhabit-

* Forster's Observations.

ants. It is copied from the Quarterly Review, and alludes to those of Bow Island, one of the Archipelago,

"The natives of the low coral islands are such a miserable, half-starved set of cannibals, that they furnished nothing worthy of record. You may form some idea of what they are, and of the country they inhabit, when I tell you that I consider that the miraculous manner in which they subsist, is the greatest discovery we have made. When we first visited these narrow strips of coral, it was concluded that among the trees there was some cultivation; and it was not until we entered the lagoon at Bow Island, that we found it otherwise, and that they derived their support almost entirely from the pandanus, a tree very like the doom tree of Egypt, which bears its pithy fruit in clusters containing about twenty nuts each. This nut is, in size, nearly that of a hazel nut, but being enclosed in a thick fibrous husk, like the cocoa-nut, appears as large as an egg. But their shape is pentagonal; they consequently have no interstices between them. The labour of cracking the nut is such, that it requires several hours to prepare a meal. The cluster of nuts being first divided, they are handed to the men, who suck the inner part of the rind, which is somewhat soft, and almost as good as the root of a very old cabbage, and throw them down in heaps to be pounded by the women, who take them up severally, and carefully examine if any meat is left among the fibres, and if so, they have the privilege of a second suck—if not, the nut is placed under the beater, a stone about thirty pounds weight, and, after a few hard thumps, generally exhibits a fracture. The kernels are then picked out and put together for the men, who, during this festival, are occupied in the laborious exercise of keeping the flies off their filthy persons. These nuts constitute the whole of their food, except such limpits and land-crabs, *termes*, or slimy *holothuria*, as they can pick up on the rocks, and which they devour raw.

"You may judge, from this description, how little would have been gained from such a race; a people destitute of clothing, of weapons, excepting big sticks and clubs, and whose god is a bit of wood with a slit cut in it, and a bit of hair thrust in, and then slung to a tree, to point out which way the wind blows—or, more frequently, a bit of hair tied to the thigh-bone of some human being.

"The natives of the islands *immediately* about Tahaité, being converted to Christianity, are some shades better than those of the islands lying more remote. I should, nevertheless, be sorry to be cast upon their islands, even in lent time."

So much for the natives of the Low Archipelago. Captain Beechey observes further, that the difficulty with which the inhabitants of the coral islands obtain their subsistence, materially affects their general character, rendering them totally different from the natives of those which have been formed by volcanic eruption.

On approaching Otaheite on the 15th March, the height of its mountains was roughly estimated at 7000 feet, and that of the Island of Maitea was ascertained to be 1432 feet. At Otaheite, the celebrated favourite resort of all our circumnavigators, the very name of which recalls to our recollection the discoveries of Wallis and Cook, the arrival of a ship of war was still an event of much interest, and that of the Blossom was welcomed on the following day by an assemblage of people at the anchorage. The reason of

this was rather remarkable. According to the Blossom's reckoning, in consequence of her having come from the east, the day of her arrival was Saturday; but it was Sunday at Otaheite, in consequence of the missionaries having come from the west. Captain Beechey draws an interesting picture of Otaheite; and the accidental arrival of a ship from New Zealand, gave him a good opportunity of observing the difference between the characters of the two people. We cannot resist quoting the following account of it:

"After the duty of the day was over, the party assembled in front of the consul's house, and the Otaheitans, anxious for an opportunity of comparing the dances of other countries with their own, crowded round in great numbers, to witness the performance.

"The exhibition took place by torch-light, and began by the party being drawn up in a line with their chief in advance, who regulated their motions; which, though very numerous, were all simultaneous, and shewed that they were well practised in them. They began by stamping their feet upon the ground, and then striking the palms of the hands upon the thighs for about a minute, after which, they threw their bodies into a variety of contortions, twisted their heads about, grinned hideously, using all kinds of imprecations and abuse on their supposed enemy, as if to defy him to battle: having at length worked themselves into a complete frenzy, they uttered a yell, and rushed to the conflict; which, from what we saw represented, must in reality be horrible; the effect upon the peaceable Otaheitans was such, that, long before they came to the charge, some of them ran away through fear, and all, no doubt, congratulated themselves that there was so wide an expanse of water between their country and New Zealand. A dirge over the fallen enemy concluded the performance, which it is impossible adequately to describe."

Much as the climate may affect the general habits of the Otaheitans in point of bodily exertion, it seems not to have lessened the general love of pomp and pageantry common to mankind, and particularly prominent in the character of uncivilized man. We must now follow Captain Beechey to the northward.

The crew of the Blossom, during her stay at Otaheite, obtained that repose and refreshment which their exposure among the Coralline Islands had rendered necessary; and, on the 15th of April, Captain Beechey says, "We left this delightful island, in which we had passed many very pleasant days in the enjoyment of the society of the residents, and of the scenery of the country." A short distance to the northward of Otaheite, are the small islands of Tethoroa and Eimeo, which latter has a remarkable peak with a hole through it. The legend related of it is worthy of being told, as it assimilates very much with the fairy tales of more civilized countries. The natives say that

"The great god, Oroo, being one day angry with the Tii, or the little god of Eimeo, he threw his spear across the water at him, but the activity of the Tii evaded the blow, and the spear passed through the mountain, and left the hole which we saw. The height of this peak is 4041 feet."

The difference between the scenery of the Sandwich Islands and that of Otaheite, assisted by the sudden transition to the latter place, was the subject of remark; nor was the diversity of character less

apparent in the natives of the same islands. Captain Beechey here found the good effects of Lord Byron's recent visit, and met with a most friendly reception. The wants of the ship were supplied as far as the resources of the island permitted, and he departed much against the inclination of the chief.

From the Sandwich Islands, the Blossom continued her course to Kamschatka, and, on the 27th of June, anchored off the town of Petropaulski. At this place, the accounts of the failure of Captain Parry's expedition down Prince Regent's Inlet were awaiting the Blossom's arrival, in consequence of which, Capt. Beechey's attention was directed towards meeting Captain Franklin. A short time was left for the Blossom to find her way to the appointed rendezvous in Kotzebue's Inlet, in consequence of which her departure was hastened. Instead of the oppressive warmth of the tropical regions, attended with fine weather and a moderate trade-wind, the chilly fogs of the high northern latitudes were experienced, and for the delightful scenery of the islands which the Blossom had lately visited, was substituted the bleak lands and snow-capped mountains of Kamschatka and Beering's Straits.

After a rather tedious passage across Beering's Straits, the Blossom having crossed Kotzebue Sound, Captain Beechey says,

"At four o'clock in the morning of the 25th, we reached our appointed rendezvous at Chamisso Island, five days later than had been agreed upon by Captain Franklin and myself, but which, it appeared, was quite early enough, as there were no traces of his having arrived. On approaching the island, we discovered, through our telescopes, a small pile of stones upon its summit; and as every object of this kind which was likely to be the work of human hands was interesting, from the possibility that it might be the labour of the party we were in search of, it was not long in undergoing an examination; there was nothing however to lead to its history, but conjecture attributed it to Captain Kotzebue, who visited that spot in 1816."

The Blossom had now arrived at the most interesting part of her voyage, and each day brought fresh hopes of the appearance of Captain Franklin, and his party. The vessel was anchored in the interior of Kotzebue Sound, where preparations were made for proceeding along the coast, to the northward, as had been agreed on. Kotzebue sound is a spacious inlet on the American coast, between the latitudes of 66° and 67° , explored by the Russian navigator of that name, who mentions, in the account of his voyage, an extraordinary ice formation in Escholtz bay, as being 'covered with a soil half a foot thick, producing the most luxurious grass,' and containing a number of mammoth bones. Captain Beechey went in search of it, and says,

"As we rowed along the shore, the shining surface of small portions of the cliffs attracted our attention, and directed us where to search for this curious phenomenon, which we should otherwise have had difficulty in finding, notwithstanding its locality had been particularly described; for so large a portion of the ice cliff has thawed since it was visited by Captain Kotzebue and his naturalist, that only a few insignificant patches of the frozen surface now

remain. The largest of these, situated about a mile to the westward of Elephant Point, was particularly examined by Mr. Collie, who, on cutting through the ice in a horizontal direction, found that it formed only a casing to the cliff, which was composed of mud and gravel in a frozen state. On removing the earth above, it was also evident, by a decided line of separation between the ice and the cliff, that the Russians had been deceived by appearances. By cutting into the upper surface of the cliff three feet from the edge, frozen earth, similar to that which formed the face of the cliff, was found at eleven inches' depth; and four yards further back, the same substance occurred at twenty-two inches' depth.

"This glacial facing we afterwards noticed in several parts of the sound; and it appears to me to be occasioned either by the snow being banked up against the cliff, or collected in its hollows in the winter, and converted into ice in the summer by partial thawings and freezings—or by the constant flow of water during the summer over the edges of the cliffs, on which the sun's rays operate less forcibly than on other parts, in consequence of their aspect. The streams thus become converted into ice, either while trickling down the still frozen surface of the cliffs, or after they reach the earth at their base, in which case the ice rises like a stalagmite, and in time reaches the surface. But before this is completed, the upper soil, loosened by the thaw, is itself projected over the cliff, and falls in a heap below, whence it is ultimately carried away by the tide. We visited this spot a month later in the season, and found a considerable alteration in its appearance, manifesting more clearly than before the deception under which Kotzebue laboured.

"The deserted village upon the low point consisted of a row of huts, rudely formed with drift-wood and turf, about six feet square and four feet in height. In front of them was a quantity of drift-wood raised upon rafters; and around them there were several heaps of bones, and skulls of seals and grampuses, which in all probability had been retained conformably with the superstitions of the Greenlanders, who carefully preserve these parts of the skeleton.* A rank grass grew luxuriantly about these deserted abodes, and also about the edges of several pools of fresh water, in which there were some wild fowl. We returned to the ship late at night, and found her ready for sea."

On the 30th of July, Captain Beechey having deposited a cask of flour in an unfrequented place, and erected signals, to give information to Captain Franklin, in case of his arrival at Kotzebue Sound during his absence, proceeded with his ship to the northward. At Cape Krusenstern, the northern point of Kotzebue Sound, a letter was deposited, and a direction-post was left, for Captain Franklin's guidance, after which the master of the Blossom, Mr. Elson, was directed to take charge of the barge, and accompany the ship, examining the shore closely in the progress to the northward. This part of the coast trends to the north-west, in which direction a current sets at the rate of a mile or a mile and a half per hour; but at Point Hope, a short distance farther north, it increased to three miles per hour. This was, however, found to be only superficial.

The Blossom had already been assailed by the Esquimaux Indians of these regions, who seem to be accustomed to the presence of visitors. We give the following as a fair specimen of these people:

"On the 2d, being favoured with a breeze, we closed with a high cape,

* Crantz Greenland, vol. 1.

which I named after Mr. Deas Thomson, one of the commissioners of the navy.* It is a bold promontory, 450 feet in height, and marked with differently coloured strata, of which there is a representation in the geological memorandum. As this was a fit place to erect a signal-post for Captain Frankland, we landed, and were met upon the beach by some Esquimaux, who eagerly sought an exchange of goods. Very few of their tribe understood better how to drive a bargain than these people; and it was not until they had sold almost all they could spare, that we had any peace. We found them very honest, extremely good-natured, and friendly. Their features, dress, and weapons, were the same as before described in Kotzebue Sound, with the exception of some broad-headed spears, which they had probably obtained from the Tschutschis. They had more curiosity than our former visitors, and examined very minutely every part of our dress; from which circumstance, and their being frightened at the discharge of a gun, and no less astonished when a bird fell close to them, we judged they had had a very limited intercourse with Europeans. The oldest person we saw among the party was a cripple about fifty years of age. The others were robust people, above the average height of Esquimaux: the tallest man was five feet nine inches, and the tallest woman five feet four inches. All the women were tattooed upon the chin with three small lines, which is a general distinguishing mark of the fair sex along this coast; this is effected by drawing a blackened piece of thread through the skin with a needle, as with the Greenlanders. Their hair was done up in large plaits on each side of the head, as described by Captain Parry at Melville Peninsula. We noticed a practice here amongst the women, similar to that which is common with the Arabs, which consisted of blacking the edges of the eyelids with plumbago rubbed up with a little saliva upon a piece of slate. All the men had labrets, and both sexes had their teeth much worn down, probably by the constant application of them to hard substances, of which their dresses, implements, and canoes, are made.

“They had several rude knives, probably obtained from the Tschutschis, some lumps of iron pyrites, and pieces of amber strung round their neck; but I could not learn where they had procured them.

“As soon as we finished the necessary observations with the artificial horizon, to the no small diversion and surprise of our inquisitive companions, we paid a visit to the next valley, where we found a small village, situated close upon a fine stream of fresh water flowing from a large bed of thawing snow. The banks of the brook were fertile, but vegetation was more diminutive here than in Kotzebue Sound; notwithstanding which, several plants were found which did not exist there. The tents were constructed of skins loosely stretched over a few spars of drift-wood, and were neither wind nor water tight. They were, as usual, filthy, but suitable to the taste of their inhabitants, who, no doubt, saw nothing in them that was revolting. The natives testified much pleasure at our visit, and placed before us several dishes, among which were two of their choicest—the entrails of a fine seal, and a bowl of coagulated blood. But, desirous as we were to oblige them, there was not one of our party that could be induced to partake of their hospitality. Seeing our reluctance, they tried us with another dish, consisting of the raw flesh of the narwhal nicely cut into lumps, with an equal distribution of black and white fat; but they were not more successful here than at first.

“An old man then braced a skin upon a tambourine frame, and, striking it with a bone, gave the signal for a dance, which was immediately performed to a chorus of *Angna aya! angna aya!* the tambourine marking time by being flourished and twirled about against a short stick, instead of being struck. The

* A cape close to this has been named Cape Ricord by the Russians.

musician, who was also the principal dancer, jumped into the ring, and threw his body into different attitudes, until quite exhausted, and then resigned his office to another, from whom it passed to a lad, who occasioned more merriment by his grimaces and ludicrous behaviour, than any of his predecessors. His song was joined by the young women, who until then had been mute and almost motionless, but who now acquitted themselves with equal spirit with their leader, twisting their bodies, twirling their arms about, and violently rubbing their sides with their garments, which, from some ridiculous associations no doubt, occasioned considerable merriment.

“Against an obscure part of the cliff near the village, was a broad iron-headed halberd placed erect, with several bows and quivers of arrows; and near them a single arrow, with a tuft of feathers attached to it, suspended to the rock. The Esquimaux were reluctant to answer our inquiries concerning this arrangement, and were much displeased when we approached the place. From the conduct of the natives at Schismareff Inlet toward Captain Kotzebue, it is not impossible that the shooting of this arrow may be a signal of hostility, as the natives of that place, after eyeing him attentively and suspiciously, paddled quickly away, and threw two arrows, with bunches of feathers fastened to them, toward their habitations, whence shortly afterwards issued two baidars, who approached Captain Kotzebue with very doubtful intentions.

“Upon an eminence beyond this cliff, we found several dogs tethered to stakes; and all the little children of the village, who had perhaps been sent out of the way, and who, on seeing us, set up a general lamentation.”

But our navigators were now fairly in an Esquimaux country, and more than once had to undergo “the full delights of an affectionate Esquimaux salutation.” At another of these interviews, which were generally attended with native music:—

“The vivacity and humour of the musician inspired two of the old hags, who joined chorus, and threw themselves into a variety of attitudes, twisting their bodies, snapping their fingers, and smirking from behind their seal-skin hoods, with as much shrewd meaning as if they had been half a century younger. Several little chubby girls, roused by the music from the subterranean abodes, came blinking at the daylight through the greasy aperture of the roof, and joined the performance; and we had the satisfaction of seeing a set of people happy, who did not seem to possess a single comfort upon earth.

“The village consisted of a number of ‘yourts’ excavated in a ridge of mud and gravel, which had been heaped up in a parallel line with the beach. Their construction more nearly approached to the habitations of the Tschutschi than those of the Esquimaux of Greenland. They consisted of two pits about eight feet deep, communicating by a door at the bottom. The inner one had a dome-shaped roof, made with dry wood or bones; it was covered with turf, and rose about four feet above the surface of the earth. In the centre of this there was a circular hole or window, covered with a piece of skin (part of the intestine of the whale), which gave, however, but very little light. The outer pit had a flat roof, and was entered by a square hole, over which there was a shed to protect it from the snow and the inclemency of the weather. A rude ladder led to a floor of loose boards, beneath which our noses, as well as our eyes, were greeted by a pool of dirty green water. The inner chamber was the sleeping and cooking room.

“Another yourt, to which a store of provision was attached, by a low subterraneous passage, was examined by Lieutenant Belcher the ensuing year: it was in other respects very similar, and, as I have given a section of it, needs no particular description. Of these yourts, one was of much larger dimensions

than the others, which, it was intimated by the natives, was constructed for the purpose of dancing and amusing themselves. Mr. Belcher was particularly struck with the cleanliness of the boards and sleeping-places in the interior of the yourt he examined; while the passage and entrance were allowed to remain in so filthy a condition: the air was too oppressive to continue in them for any length of time. Every yourt had its rafters for placing sledges, skins of oil, or other articles upon in the winter time, to prevent their being buried in the snow. The number of these frames, some bearing sledges, and others the skeletons of boats, formed a complete wood, which had attracted our notice at the distance of six or seven miles. Of the many yourts which composed the village, very few were occupied; the others had their entrances blocked up with logs of drift wood and the ribs of whales. From this circumstance, and the infirm condition of almost all who remained at the village, it was evident that the inhabitants had gone on sealing excursions, to provide a supply of food for the winter. The natives, when we were about to take our leave, accompanied us to the boat, and as we pushed off they each picked up a few pebbles and carried them away with them, but for what purpose we could not guess, nor had we ever seen the custom before:—

—a point for speculation, no doubt; and favourably as we might be inclined to think of these people, we can hardly imagine they were to be kept as mementos of the Blossom's visit.

At this time the barge was proceeding along the coast, where, in the parallel of 69° north, vegetation was as luxuriant as in Kotzebue Sound, more than a hundred miles to the southward. Several reindeer were seen; the cliffs were covered with birds, and the swamps generated myriads of mosquitoes.

Amidst fogs, attended alternately by calms and gales of wind, the Blossom penetrated to the northward as far as lat. $71^{\circ} 8'$, in long. 163. 40. on the 13th of August, from whence, observing the favourable condition of the ice to the north-east, Captain Beechey felt every inclination to attempt the north-east passage. But his orders requiring him to keep his ship from being beset, he was obliged at once to relinquish the idea, and therefore hastened to join the barge under Mr. Elson, which was to the southward, proceeding along the shore. As soon as the boat had joined the ship, preparations were made for sending her to the northward, in the charge of Mr. Elson. Captain Beechey says—

“ My instructions to Mr. Elson were to trace the shore to the north-eastward as far as it was possible for a boat to navigate, with a view to render the earliest possible assistance to Captain Franklin; and to obtain what information he could of the trending of the coast, and of the position of the ice. He was also directed to possess himself of facts, which, in the event of the failure of the other expedition, would enable us to form a judgment of the probable success which might attend an attempt to effect a north-eastern passage in this quarter: and further, he was to avoid being beset in the ice, by returning immediately the wind should get to the north-west or westward, and not to prolong his absence from the ship beyond the first week in September. He was at the same time ordered to place landmarks and directions in conspicuous places for Captain Franklin's guidance; and if possible, on his return, to examine the shoals off Icy Cape.”

We shall again return to this interesting expedition in our next

number. On the 17th, Mr. Elson parted company in the boat, and the Blossom directed her course to the southward, to await her return in Kotzebue Sound. On his way to this anchorage, Captain Beechey again visited the shore between the parallels of 68° and 69°; and the following will complete the picture of the Esquimaux :

“ From the desolate appearance of the coast where we landed, I scarcely expected to find a human being, but we had no sooner put our foot ashore, than a baidar full of people landed a short distance from us. Her crew consisted of three grown-up males and four females, besides two infants. They were as ready as their neighbours to part with what they had in exchange for trifles, esteeming our old brass buttons above all other articles, excepting knives. There was a bear-eyed old hag of the party, who separated from her companions, and seated herself upon a piece of driftwood at a little distance from the baidar, and continued there, muttering an unintelligible language, and apparently believing herself to be holding communion with that invisible world to which she was fast approaching. Though in her dotage, her opinion was often consulted, and on more than one occasion in a mysterious manner. We afterwards witnessed several instances of extremely old women exercising great influence over the younger part of the community. On this occasion, I purchased a bow and quiver of arrows for a brooch. The man who sold them referred the bargain to the old woman above-mentioned, who apparently disapproved of it, as the brooch was returned, and the bow and arrows redemanded. The males of this party were all provided with lip ornaments; and we noticed a gradation in the size, corresponding to the ages of the party who wore them, as well as a distinction in the nature of them. Two young lads had the orifices in their lips quite raw: they were about the size of a crow-quill, and were distended with small cylindrical pieces of ivory, with a round knob at one end, to prevent their falling out. For some time after the operation has been performed, it is necessary to turn the cylinders frequently, that they may not adhere to the festering flesh: in time this action becomes as habitual with some of them as that of twirling the mustachios is with a Mussulman. In the early stage it is attended with great pain, the blood sometimes flowing, and I have seen tears come into the boys' eyes while doing it. Lip ornaments, with the males, appear to correspond with the tattooing of the chins of the females; a mark which is universally borne by the women throughout both the eastern and western Esquimaux tribes: the custom of wearing the labrets, however, does not extend much beyond the Mackenzie River. The children we saw to-day had none of these marks; a girl, about eleven, had one line only; and a young woman, about twenty-three years of age, the mother of the infants, had the three perfect. One of her children was rolling in the bottom of the baidar, with a large piece of seal-blubber in its mouth, sucking it as an European child would a coral. The mother was rather pretty, and allowed her portrait to be taken. At first she made no objection to being gazed at stedfastly, as was necessary for an indifferent artist to accomplish his purpose; but latterly she shrunk from the scrutiny with a bashfulness that would have done credit to a more civilized female; and on my attempting to uncover her head, she cast a look of inquiry at her husband, who vociferated ‘naga,’ when she very properly refused to comply. The young men were very importunate and curious, even to annoyance; and there is little doubt that if any persons in our dress had fallen in with a powerful party of these savages, they would very soon have been made to exchange their suit of broad cloth for the more humble dress of furs. Their honesty was not more conspicuous than their moderation, as they appropriated to themselves several articles belonging to Mr. Collie.”

WORKS OF NAUTICAL SCIENCE AND ART.

CHARTS, PLANS, AND MAPS.

IRELAND. *Sheet 3. North East Coast, from Lough Larne to Lough Foyle.* By Commander W. Mudge, R.N., F.R.A.S. 1828. Price 2s. 3d. (No. 95.) *Size, Half Elephant Sheet.* Admiralty.

This chart includes the part of the coast of Ireland which forms the south side of the entrance to the North Channel. The method adopted in forming the scale on which each of these charts has been drawn, consists in taking the minute of latitude, or the geographic mile in the middle latitude, contained in each sheet, as equal to half an inch, a length which had been previously determined on as best adapted to the nature of the coast. From this, the minutes of latitude to the north and south, as well as that of longitude, have been obtained on the principles of Mercator's projection. The space included within the limits of this chart, is from lat. $54^{\circ} 50'$ to $55^{\circ} 26'$ N. and lon. $5^{\circ} 36'$ to $7^{\circ} 0'$ W. A plan on an extended scale is given on this chart, of the dangerous rocks called the Maidens, showing the position and height of the light-houses on the two principal rocks. The little Pier Harbour, called Port Rush, on the north coast, near the entrance of the river Bann, is also given on a larger scale in the chart, by which a stranger may enter it with safety. The Mull of Cantyre, on the opposite side of the channel, is marked in outline. This, and the sheet to the southward of it, are very desirable charts; it is a continuation of that series, the two first of which appeared in our first number.

A General Chart of the WEST INDIES, and GULF of MEXICO; describing the Gulf and Windward Passages, Coasts of Florida, Louisiana, and Mexico, the Bay of Honduras and Mosquito Shore, and the Coast of the Spanish Main to the Mouths of the Orinooco, with a Plan of the Virgin Islands. Four Sheets. *Size, Double Elephant.* Price 14s. (No. 702.) Admiralty.

This chart, which was constructed from the surveys of Mr. De Mayne, so long employed in the West Indies, as well as from the Spanish charts, and published in 1824, has lately received some very important improvements, from the recent surveys of Commander R. Owen, in H.M.S. Blossom. These are principally on the coasts of Honduras and Yucatan, where surveys have been made from C. Comorin, to the north end of Ambergis Kay. The features, as well as the position of the Swan Islands, and the Misteriosa Bank, are also new, as well as the great and little Caymans. Some material improvements have also been made about the islands of the windward passages, particularly between the Caicos and Silver Banks, which our West Indiamen would do well to consult.

The PENTLAND FRITH, by Mr. George Thomas Master, R.N. 1830. Price 8d. *Size, Quarto Sheet.* (No. 186.) Admiralty.

This is an unfinished survey, but sufficient to afford what the importance of the passage demanded; namely, the correct relative situation of the land by which it was formed. As such, it is valuable, and extends from the Pentland Skerries to Denet Head.

PORT STEPHENS, NEW SOUTH WALES, by Mr. W. Johns, Master of H.M.S. Rainbow. 1828. Price 6d. *Size, Quarto Sheet.* (No. 2121.) Admiralty.

The Australian Company, of course, possess this little plan, and, probably, had Port Stephens been examined before, we should not have seen their settlement formed on the margin of a mud flat, while there is a bold coast about a mile from it. A view is given, on this plan, of the entrance to the port.

CAPE BYRON BAY, CLARENCE STRAITS, and the SOUTH CHANNEL of MORETON BAY, by Mr. W. Johns, Master of H.M.S. Rainbow. 1828. Price 8d. *Size, Quarto Sheet.* (No. 2118.) Admiralty.

Such small piece-meal examinations, of a coast which has yet much to be discovered, are always desirable. It is by these little authenticated surveys of enterprising individuals, that we shall gradually bring our charts to perfection. Both these, and the foregoing plan, are creditable to Mr. Johns, and we should like to see more of them.

Part of the ARABIAN Side of the PERSIAN GULF, from Core Abdullah to Ras Reccan. Surveyed by Lieuts. J. M. Guy, G. B. Brucks, and W. E. Rogers, H.E.I. Co. Marine. 1825. Sheet 1st, and 5th of the Arabian Coast. *Size, Double Elephant Sheet.*

The whole of the southern side of the Persian Gulf is completed with this and the charts noticed in our last number; a part of the world which, until these valuable surveys were made, was entirely unknown. They have therefore filled an important blank in Hydrography. The limits of this chart extend from lat. $27^{\circ} 30'$ to $30^{\circ} 4' N.$ and from $47^{\circ} 37'$ to $49^{\circ} 24' E.$ longitude, including the spacious harbour of Grane, or Quade and Core Abdullah.

Trigonometrical Survey of the Entrance to the Rivers at the Head of the PERSIAN GULF. By Lieuts. G. B. Brucks and S. B. Haines, H.C. Marine. 1827. *Size, Double Elephant Sheet.* E.I. Company.

The channels at the mouths of the Bussorah river, were scarcely better known than the south shore of the Gulf, although they were more frequented. Here, however, they are well sounded; and the limits of the extensive sand-banks, formed by the waters of this river, are well defined. No ship should attempt to enter this river without this plan.

Part of the Coast of PERSIA, from Ras Tulop to Bushire. Surveyed by Lieuts. G. B. Brucks and R. Cogan, H.C. Marine. 1826. *Size, Half Double Elephant Sheet.* E.I. Company.

A small chart, which commences at the eastern entrance of the Bussora river, and belongs to the series of the Persian Gulf.

Chart of the Coasts of IRELAND and ST. GEORGE'S CHANNEL, exhibiting the Sea and Harbour Lights, under the management of the Corporation for Improving the Port of Dublin. Drawn chiefly from original surveys. By A. Nimmo, C.E. and Hydrographer. Two Sheets. *Size, Six Sheets Double Elephant nearly.* Dublin.

Every chart we see of Ireland, bears fresh proofs of the necessity there is for a survey of that dangerous coast. For instance,—let us compare the position of Cape Clear, a headland pretty well known to seamen:

By Norie's chart, of 1829, it is in lat. $51^{\circ} 18'$ —no longitude,

By Heather's chart, of 1807, lat. $51^{\circ} 21\frac{1}{4}'$, long. $9^{\circ} 38'$,

By Nimmo's chart, lat. $51^{\circ} 25'$, long. $9^{\circ} 30'$;

shewing a difference of seven miles in latitude alone!—Again, on the north coast, Tory Island, in the chart before us, lies in a direction about N.N.W. and S.S.E. (true), while, in Heather's and Norie's chart, it lies nearly east and west! We might multiply such comparisons, and find even greater differences, were it necessary; but we shall soon have them all rectified by Captain Mudge. Mr. Nimmo's chart is decidedly the best general chart of Ireland that is published, and contains his own accurate surveys of the principal ports for the Commissioners of the Irish Fisheries, since the year 1821. The Lighthouses are carefully laid down, and the limits at which they are seen indicated by a circular line—a method, of which we approve.

Map of INDIA, from the latest Surveys, of the best Authorities. Published principally for the use of the Officers of the Army in India. By Parbury, Allen, and Co. In Five Sheets. *Size, Atlas.*

This is a neat and elegant map; the details of it are clear and conspicuous; and it is just such a one as must be highly valuable to travellers, besides those for whom it is particularly intended.

BOOKS.

Rules for Finding DISTANCES and HEIGHTS at Sea. By Lieut. Henry Raper, R.N. London. Published at the Hydrographic Office, Admiralty.

This little work is calculated to do more towards improving navigation, than any we have seen for a long time. It is the production of an officer who has already distinguished himself as the inventor of a valuable little instrument used in surveying; a description of which appeared a short time since in the *United Service Journal*, and is the result of the best of all combinations—practical experience and mathematical knowledge. Lieut. Raper says—"It must have frequently occurred to seamen, that it would be a great advantage, in taking departures, to obtain promptly, and with accuracy, the distance of high land, by means of its altitude above the horizon;" and who has not felt the truth of this remark, excepting some few who content themselves with a rough bearing, taken by laying the hand across the compass, and an

estimated distance of the object, for a departure? Setting out with the distance of the horizon as being the same as the dip answering to the height of the spectator's eye, Lieut. Raper gives examples of determining the distance from an object beyond the horizon, both when its height is known, and when it is unknown. By these means, not only may a correct distance be obtained of land seen from sea at any time, but also the height of that land may be determined,—a point of no small importance in the construction of charts. Our limits will not allow us to quote an example, but the work should be in the hands of every seaman. We believe the same officer is at present constructing a small table, by which the distance of any point can be taken out by inspection, with merely two compass bearings of it, and the intermediate course and distance run.

Reflections on the State of BRITISH NAVAL CONSTRUCTION, in 1331; with Observations on the Nature of a Scientific System of Naval Architecture, and the means of establishing a Permanent Theory. By Henry Chatfield, of H.M. Dock-yard, Plymouth, &c. &c. Published by Sherwood, Gilbert, and Piper. London.

This is a dispassionate and candid dissertation on the vast and important subject of naval architecture,—a branch of science which, as Mr. Chatfield observes, certainly does not want friends to advance it, as the late experimental squadrons amply prove, but which is not yet arrived at that state of perfection which might be expected from the first maritime country in the world. Mr. Chatfield justly observes, that “a system of naval construction must be made up of pure science and experimental philosophy, the results of which, properly combined, constitute the theory of naval architecture.” Now, we are inclined to believe that, while science has not been wanting, its proper application has not been sufficiently assisted by experimental philosophy; for it is well known to all seamen, that a ship will be a fast sailer in the command of one officer, and in that of another, after having been paid off, will have entirely lost this essential quality, while her outward form remains the same. Had the second officer a knowledge of the arrangement of her stores, &c., under his predecessor, he would have been able to recover this quality, which is probably the first required by a man-of-war, for it is accompanied with incalculable advantages. Therefore, “the *weights* of all materially heavy articles should be known; likewise their *situations*, in order to estimate the effects of any proposed alteration: but if faithful accounts of a vessel's performance be not minutely recorded, and fully understood, reasoning of this kind would be of little or no avail; and the progress of naval architecture, if it advance at all, must be extremely slow.” Mr. Chatfield advocates a board of naval construction, formed of scientific and practical men. His pamphlet is full of useful information, which naval officers would do well to consult; and, while he has shewn himself master of his subject, he has also shewn that he had only one object in view when he wrote it, namely,—that of improving naval architecture,—on which grounds it is entitled to attention.

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

A spirit of enterprise is abroad among our ship-owners and merchants, well calculated to advance the real interests of this maritime country; and, as such, deserving of all possible encouragement. We allude to the various harbours which are contemplated, or in course of formation, on our coasts, evincing a determination to supply by art, that which nature has denied. The splendid works at Lowestoffe are no sooner completed, and the navigation of the Tees facilitated by constructing new channels, and deepening the old ones, than we find fresh companies forming for the same purpose to the northward.

The first is at the port of Sunderland, where two rival companies are contending for the construction of a harbour—one on the north, and the other on the south-side of the entrance to the river Wear. The question, which of the two shall be adopted, we believe has not yet been decided. For our own part, we are favourably inclined towards that on the northern side, under the direction of Mr. Brunel.

To the south of the Wear, the little fishing village of Hartlepool is likely to rise into importance, from the construction of a splendid harbour at that place; which, from the peculiar local advantages it possesses, of a large quantity of drowned land, called the Slake, and its easy approach both from land and sea, is likely to be attended with certain success. The plan of this harbour has been designed by Mr. Tennant, of Stockton; and we have no doubt that the obstacles which at present oppose its construction will be shortly surmounted.

To the south, again, we find that the proprietors of the Canterbury and Whitstable railway have constructed a safe and commodious harbour at the latter place, which was to be opened on the 29th ult.

In the west, we have already noticed the improvement about to take place in Swansea harbour, besides the contemplated erection of Tarbert pier, on the Shannon. At Holyhead harbour, the south pier has made considerable progress; and the pier of Ayr harbour is to be extended 300 yards further out, under the direction of Mr. Stevenson, civil engineer. In addition to these, a bill has been brought into parliament, to authorize the construction of a harbour at Largs, in the mouth of the Clyde.

The great importance of all these, as tending to increase the number of our commercial shipping, and thereby to give present employment to seamen, who, in time of war, will be ready to protect their country, must be evident to every one. They have our most cordial wishes for their success; and we shall endeavour to present our readers, from time to time, with accounts of their progress.

While our neighbours, on the opposite side of the channel, have been turning to a good account the leisure of these peaceable times, in making a minute survey of their coasts, under the able direction of M. B. Beaupres, an equally careful examination of our own has been proceeding, under the charge of several skilful naval officers. One of these, lately performed by Captain Vidal, in the temporary command of His Majesty's Schooner Pike, is peculiarly distinguished from the rest, being in its nature entirely new, and of invaluable service to seamen.

The dangerous nature of the west coast of Ireland, as a lee shore, in particular, is well known; and, in bad weather, when no observation can be obtained, and the reckoning cannot be depended on, even the lead would not indicate the distance of a ship from the land, because the soundings have

not hitherto been laid down on any chart. The arduous duty of doing this, was assigned to Captain Vidal, R. N., and was performed by him in the course of the last summer. Captain Vidal commenced his examination of the bank in the latitude of the southern part of Ireland, and traced its limits to a great depth, to the northward, along the western shore, and across the entrance of the north channel, by the Hebrides, as far as the Ferroe Islands. The deep-water soundings, at the entrance of the channel, were well known; but the results of Captain Vidal's survey are entirely new.

In the course of this duty, the limits of the bank, on which is situated the dangerous rock, known by the name of Rockal, were well ascertained, as well as the various depths on it; and the geographical position of the rock was accurately obtained by observation. Various other interesting points were investigated by Captain Vidal, which, in a future number, we shall endeavour to give more in detail. In the mean time, we hope shortly to congratulate our seamen on the acquisition they will derive from the efficient manner in which this service has been performed.

A short time since, some ignorant persons endeavoured to impose a forged statement on the public, relating to Captain Ross. The fraud was at once seen through, and very properly exposed in the *Athenæum*.

No accounts have yet reached us since Captain Ross left the Danish settlement, in Baffin's-bay; and, while we are anxiously looking out for news of his arrival in the Pacific, the following letter, extracted from the *Times*, will inform our readers of the particulars of his departure:—

“At this season of activity, among the vessels preparing for the Greenland fishery, I am anxious to call the attention of our adventurous seamen about to be engaged in that occupation, to the fate of their unfortunate countrymen, who, nineteen in number,

embarked three years ago on board a steam-vessel, and quitted this country on the no less hazardous enterprise than that of attempting the long-sought north-west passage. As they have not yet returned to any land with which we are acquainted, there is too much reason to apprehend that they have met with some serious accident; and that, if living, they are cut off from the means of communication with the civilized world, and are prolonging their miserable existence on some part of the coast of the Polar sea.

“It is well known that this enterprise was under the direction of Captain Ross, R. N., who commanded the first expedition to the arctic regions; and that its object was to endeavour to penetrate some of the sounds on the western coast, or at the head of Baffin's-bay. The direction in which the absentees are to be sought with the greatest likelihood of success, may, therefore, easily be conceived; and every person, possessed of a spark of humanity, must join with me in the hope that our fishermen will use every endeavour to gain information of them, both from the inhabitants at Disco, and from the Esquimaux to the northward of that settlement; and that they will follow up any clue that may seem likely to lead to their place of refuge.

“It has been rumoured that Government have it at this moment in contemplation to send a vessel in search of them; but, as we have not as yet seen any preparations for that measure in our dock-yards, let the Greenlandmen act as if it were not true; and let their owners invest the masters of their vessels with the power to follow up any information that may seem to them to be well grounded, and likely to lead to the discovery of our suffering countrymen.

“I am unwilling to believe that this anticipated measure of Government is but an idle report, and that nineteen brave British seamen will be permitted to perish, unheard of, uncared for, by this nation; whilst our

neighbouring country has, not long since, actually equipped a fleet, and has shown herself ready to expend hundreds of thousands of pounds, to rescue but one of its meanest of subjects from the persecution of the tyrant of Portugal. Such indifference on our part cannot surely exist.

"Some circumstances connected with the above-mentioned expedition of Captain Ross, are of great interest; and, being known to few individuals, I trust I shall stand excused for trespassing further on the limits of your columns.

"Captain Ross, it may be remembered, returned unsuccessful from the expedition with which he was intrusted in 1818. Up to that period his character was unblemished, and his fame stood high in the chronicles of our naval service. Naturally of an ardent and ambitious disposition, Ross could not brook the obloquy that attached to that fatal mistake at the entrance of Lancaster Sound, and his whole mind was bent upon redeeming the error.

"In this state of feeling he happened to be dining with a friend in London, when a gentleman who sat next to him, whose name ought to be written in letters of gold, thus addressed him:—'Pray, Captain Ross, how should you like again to attempt the north-west passage?' Astonished at the question, and at the same time impressed with the hopelessness of such an event, Ross replied, 'Alas, Sir, I should be too happy, but there is no chance of that; I have no expectation of being so employed by the Government, even supposing it contemplated another expedition to the Polar regions.' 'Well, but, continued his friend, I suppose there is no monopoly of the road to Baffin's-bay: fit out a ship of your own.' 'Indeed, Sir,' replied Ross, 'I have as little hope of succeeding in that, as my fortune is by no means adequate to the expense.' 'Oh, is that all!' hastily rejoined his generous patron, eager for an opportunity of extending his bene-

volence to a man whom misfortune seemed to have ground to the dust. 'Is that all? Well, you sha'n't fail for want of funds; go and hire a vessel, or build one if you please, and send the bills to me; only you must have a share in it yourself, you know, or you will be but my servant, and I shall run away with the merit of your discoveries; so you shall pay £10 toward the outfit, and be a proprietor, only take care you do not mention my name.' Ross, overwhelmed with this unexpected burst of liberality and kindness from a man who was almost a stranger to him, could scarcely believe what he heard; but, being assured of the sincerity of the offer, he gladly accepted it, and immediately purchased a steam-boat, which, being equipped under his own direction, left this country in the spring of 1829, with a crew, consisting of Captain Ross, Commander J. Ross, his nephew, an enterprising and scientific young officer, who had sailed two or three voyages with Captain Parry; a surgeon, and, I believe, sixteen seamen. Since that time they have been heard of but once, when they were still in Baffin's-bay.

"I regret that I am not at liberty to mention the name of the generous patron of this private expedition; whose princely munificence unquestionably vies with that of a Romanzoff.

"Apologizing for the length of my communication, I am, Sir, your constant reader,

"Hull, March 1."

The commencement of the present year has been marked, by an event in the annals of the army and navy, which, while it promises the success of an important institution, reflects honour on the individuals who, after much labour, have succeeded in overcoming every difficulty which was opposed to its first formation. We allude to the commemoration of the establishment of 'the United Service Museum,' the members of which already amount to upwards of two

thousand individuals. It is almost undeniable, that the officers of the two services possess the greatest means of enriching such an establishment: for while those of one profession are busy in collecting the specimens in foreign lands, those of the other are exploring the shores of the ocean in all parts of the world. We would point this out to our nautical readers, as affording them an easy access to a large collection of natural curiosities, as well as an extensive library, where reference may be made to scarce and *valuable works*.

Dr. Weatherhead has published a pamphlet on the Beulah Saline Spa, at Norwood, a short distance from London. To those who have been hitherto the visitors of Cheltenham, on account of its waters, we would recommend the perusal of this pamphlet, as, by a comparison which Dr. Weatherhead makes of the component parts of the two springs, a considerable superiority is evident in the Beulah over that of Cheltenham Spa.

There are several institutions of a most valuable description which are not generally known among the classes of society which they are intended to benefit; and one of these, the Adult Orphan Institution, holds out advantages to naval officers, a knowledge of which cannot be too widely diffused. It is intended as 'an asylum for those orphan daughters of the clergy, and of military and naval officers, who should be left, friendless or unprovided, to contend with the hardships and temptations to which they might be exposed.' The institution has been established twelve years, and in 1831 contained forty-two orphans; the candidates being admitted by ballot; the annual subscription of £1, or the donation of £5, entitling a person to a vote. Of those in this establishment last year, sixteen are the daughters of clergymen, fourteen of army officers, eight of naval

officers, and four of marine officers. The number of subscribers and donors, which amount to more than eleven hundred, is sufficient evidence of the value of this institution. Our naval readers must see how nearly it concerns them; and in calling their attention to it, we will merely add, that the residence of the Secretary, the Rev. R. S. B. Sandilands, is at the Institution, St. Andrew's Place, Regent's Park.

From a pamphlet just published by His Majesty's Commissioners for Emigration to the British colonies in North America, we learn that no part of the passage expenses is defrayed by Government; but that agents are maintained at the principal colonial ports, whose duty it will be, without fee or reward from private individuals, to protect emigrants against imposition on their first landing; to acquaint them with the demand for labour in different districts; to point out the most advantageous route; and to furnish them with all useful advice upon the objects which they had in view on emigrating; all of which, to a person landing in a country to which he is an entire stranger, is invaluable.

The following are the rates of passage for one person:—From the Thames, or east coast of Great Britain, £6 with provisions, or £3 without. From Liverpool, Greenock, and Ireland, from £4 to £5 with provisions; and £2, to £2. 10s., without. It is possible that, in March and April, passages may be obtained from Dublin for 35s., or even 30s.!

Many of our readers were acquainted with the good qualities of the late Mr. Fallows, in his public capacity, as Astronomer at the Cape, as well as his private virtues; and we acquit ourselves of a duty to departed worth, in recording the following biographical memoir of him. It was pronounced by His Royal Highness the Duke of Sussex, the President of the Royal Society; and is at once honourable to

the memory of the individual, and gratifying to his surviving friends.

“The Rev. Fearon Fallows was a distinguished contemporary of Sir John Herschel, at Cambridge; and, throughout his life, an ardent cultivator of astronomical science. In the year 1821, he was appointed Astronomer Royal at the Cape of Good Hope, to which place he immediately proceeded, though provided only with a small transit, and an altitude and azimuth instrument, a clock, and a few other absolutely necessary appendages of an observatory. In the course of the two following years, he completed a catalogue of 273 southern stars, which was published in our Transactions for 1824. The delays which subsequently took place in the building of the observatory, which was not completed before 1828; and the want of those capital instruments which were required to put it into complete operation, although they did not interrupt or check either the industry of his research, or the accuracy of his observations, yet, by making them necessarily imperfect, deprived them of a very considerable part of their value.

“When the mural circle at last arrived, and when he at length imagined himself in possession of the means of effecting the great object of his ambition, by making the catalogues of the stars of the southern hemisphere rival, in accuracy and completeness, those of the northern, he found new difficulties meeting him in the derangements occasioned in so large an instrument, by embarking, disembarking, and fixing it, thus producing errors which were nearly irremediable, in the absence of the original maker, or of any superior artist. In the midst of these harassing discouragements, he was attacked by severe illness; and, at the same time, deprived of his assistant by a similar cause; yet, even under these afflictions, he continued true to his duty; and, in a letter to one of his friends, a short time before his death, he de-

scribes himself as being carried daily in a blanket by his servants, from his sick room to the observatory, for the purpose of winding up his clocks and chronometers. His disease at last assumed the form of an incurable dropsy, and he died a short time before his intended embarkation for England, whither at last he had reluctantly consented to return, when his recovery at the Cape was pronounced to be hopeless.

“In the course of the year 1829, he made, in conjunction with Captain Ronald and Mr. Johnstone, a very complete series of pendulum observations, which were published in our Transactions for the year 1830: and the Lords of the Admiralty are in possession of a very extensive series of astronomical observations, made during the last seven years of his life, which it is to be hoped that, before long, they will cause to be given to the public.

Our establishment at the Gambia has been recently attacked by the Mandingo negroes in such numbers, that, had it not been for the French man-of-war brig *Bordelaise*, it is probable that it would have been completely destroyed, and every person there killed. The Mandingoes occupied the left bank of the river, and made a sudden and unexpected attack on the town of St. Mary's, at a time when the Governor, was too unwell to go out against them. The *Bordelaise* was fortunately in the river, and her officers and crew hastened to repel the assailants, and kept up an incessant fire from her guns for five hours and a half, whilst part of her men were in boats rendering similar assistance, several of whom have been wounded.

Although driven back, the natives commenced preparations to renew their attack, and on the 25th of September made another attack, in which they were driven back with severe loss. On the 22d of October, assistance was received from Sierra Leone, which enabled the Governor of Bath-

urst to take those measures for the future preservation of the colony, which had been hitherto saved only by the presence of the French.

An interesting paper has been lately read before the Geographical Society of Paris, communicated by M. D'Urville, on the inhabitants of the islands of the Pacific ocean, from observations made during his recent voyage. M. D'Urville has arrived at the same conclusion as the celebrated Cuvier, in establishing three distinct races, which he terms the *Caucasique*, or white, the *Mongolique*, or yellow, and the *Ethiopique* or black.

Not many days after the first appearance of the Nautical Magazine, we were favoured with the first Number of the Penny Magazine, of the Society for the Diffusion of Useful Knowledge. The experiment has already succeeded with others of far less pretensions to public utility, and, under the auspices of the Society, we have no doubt of its taking the precedence of all, to the exclusion of

some, which, from their political deformities, are offensive to well-inclined persons. The specimen number of the Penny Magazine contains nothing of a political nature, to make it repugnant to the feelings of men either in or out of office, but is replete with good sound information, well calculated to be of use to those for whom, by its price, it is intended, and to serve as a useful reference to other classes of more extended means. In the leading article, entitled 'Reading for all,' prejudice, and a desire of monopoly, is amusingly illustrated. An outline of the history of Van Diemen's Land, from the Almanack of that distant country, 'A naturalist's note-book,' illustrated by an excellent wood-cut, 'A description of Poland,' and 'How to light a fire,' are the principal articles which it contains, amongst other valuable notices. The success of the Penny Magazine is certain, and it promises a store of information on subjects of general utility, at the lowest possible price. We hope the volumes, as they are completed, will each be furnished with an index.

NAVAL INTELLIGENCE.

(From the Naval Papers.)

THE ROYAL NAVY IN COMMISSION.

*. S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

- ACTÆON**, 26—Hon. F. W. Grey, 8th Feb. Constantinople.
ÆTNA, S. V. 6—Com. E. Belcher, 2d Feb. Gambia.
AFRICAN, St. V. 1—Lt. J. Harvey, Med.
ALBAN, St. V.—Lieut. H. Walker, (a) 8 Feb. at Malta.
ALFRED, 50—Capt. R. Maunsell, 8 Feb. at Malta.
ALLIGATOR, 28—Capt. G. R. Lambert, 15 Jan. arrived at Rio.
ALGERINE, 10—Com. Hon. J. P. De Roos, 12th Jan. arrived at Rio from Cape.
ARACHNE, 18—Com. W. G. Agar, 5th Dec. sailed from Barbadoes.
ARIADNE, 28—Capt. C. Phillips, 23d Dec. sailed from Bermuda.
ASIA, 84—Capt. P. Richards. Flag of Adml. Parker, 16th Feb. Tagus.
ASTREA, 8—Capt. W. King, Falmouth.
BADGER, 10—Com. G. F. Stowe, Nov. at Mauritius.
BARHAM, 50—Capt. H. Pigot, Feb. 8, at Malta.
BEAGLE, 10—Com. R. Fitz-Roy, 27th Dec. sailed for S. America.
BEVIDERA, 42—Capt. Hon. R. S. Dundas, 8th Feb. Nap. di Romaia.
BLANCHE, 46—Capt. A. Farquhar, K. H. C. B. 27th Nov. at Bermuda.
BLOSSOM, S. V. 16—Com. R. Owen, 27th Dec. at Port Royal, Jamaica.
BRISK, 3—Lieut. E. H. Butterfield, 18th Jan. at Gambia.
BRITANNIA, 120—Capt. P. Rainier, Guard-ship, Portsmouth.
BRITON, 46—Capt. J. D. Markland, C. B. 28th Jan. Sailed from Madeira.
CALEDONIA, 120—Capt. J. Hillyar, Plymouth.
CHALLENGER, 28—Capt. C. H. Freemantle, 30th Nov. Singapore, from Madras.
CHAMPION, 18—Com. F. V. Cotton, 25th Dec. sailed from Jamaica.
CHARYBDIS, 3—Lieut. R. B. Crawford, 18th Jan. Gambia.
CHILDERS, 18—Com. R. Deans, 25th Feb. at Lisbon.
CLIO, 18—Com. J. J. Onslow, November, Callao.
COLUMBIA, St. V. 2—Lieut. R. Ede, coast of England.
COLUMBINE, 18—Com. O. Love, 20th Dec. Jamaica.
COMET, 18—Com. A. A. Sandilands, 22d Sep. sailed from New South Wales for Madras.
COMET, St. V.—Woolwich.
CONFIANCE, St. V. 2—Lieut. H. F. Belson, coast of England.

- CONFLICT**, 12—Lieut. G. Smithers, Dec. at Ascension.
CONWAY, 28—Capt. Eden, Chatham.
CORDELIA, 10—Com. C. Hotham, 26th Jan. at Malta.
CRACKER, 1—Lieut. J. P. Roepel, 18th Feb. sailed from Portsmouth.
CROCODILE, 28—Capt. J. W. Montagu, Sept. Madras.
CRUIZER, 18—Com. J. Parker, July, Swan River.
CURAÇOA, 26—Capt. D. Dunn, 7th Jan. sailed for East Indies.
CURLEW, 10—Com. H. D. Trotter, Qct. at Mauritius.
DONEGAL, 74—Capt. J. Dick, 8th Feb. Malta.
DRYAD, 42—Capt. J. Hayes, C. B. 22d Nov. Fernando Po.
DRUID, 46—Capt. G. W. Hamilton, C. B. 12th Jan. arrived at Rio from Bahia.
DUBLIN, 50—Capt. Rt. Hon. Lord J. Townsend, 29th Dec. at Rio.
FAIRY, S. V. 10—Com. W. Hewett, Sheerness.
FAVOURITE, 18—Com. J. Harrison, 6th Dec. sailed from Sierra Leone for Congo.
FIREBRAND, St. V.—Lt. T. Baldoek, Medit.
FIREFLY, 2—Lieut. J. M'Donnell, Bahamas.
FLAMER St. V.—Lieut. R. Bastard, Woolwich.
FLY, 10—Com. P. M'Quhae, 2d Feb. arrived at Madeira.
GANGES, 81—Capt. G. Burdett, March, Portsmouth.
GANNET, 18—Com. M. H. Sweney, 10th Jan. Port au Prince.
HARRIER, 18—Com. H. L. S. Vassal, Plymouth.
HYACINTH, 18—Com. W. Oldrey, 26th Dec. at Jamaica.
IMOGENE, 28—Capt. P. Blackwood, 14th Jan. arrived at Rio.
INVESTIGATOR, 16—Mr. G. Thomas, Woolwich.
ISIS, 50—Capt. J. Polkinghorne, 18th Jan. at Gambia.
JASEUR, 18—Com. F. Harding, Dec. at the Cape.
KANGAROO, 3—Lieut. J. Hookey, 31st Dec. at Nassau.
LEVERET, 10—Lieut. W. F. Lapidge, coast of England.
LIGHTNING, 18—Com. T. Dickinson, Cape Frio.
LIGHTNING, St. V.—Woolwich.
MADAGASCAR, 46—Capt. E. Lyons, 7th Feb. sailed for Mediterranean.
MAGICIENNE, 24—Capt. J. H. Plumridge, arrived at Rio, 31st Dec. and sailed for India 5th Jan.
MAGNIFICENT, 4—Lt. J. Paget, Port Royal.
MAIDSTONE, 42—Capt. C. M. Schomburg, Nov. Simon's Bay Flag-ship.
MASTIFF, S. V. 6—Lieut. J. Wolf, 8th Feb. Malta.
MELVILLE, 74—Capt. H. Hart, 27th Jan. sailed for East Indies. Flag-ship. V.-Adm. Sir J. Gore, K. C. B.
MESSENGER, St. V.—Lieut. B. Aplin, Woolwich.
METEOR—Com. R. C. Copeland, 8th Feb. Malta.
METEOR, St. V. 2—Lieut. W. H. Symons, Woolwich.
MINX, 3—Lieut. J. Simpson, Port Royal.
NAUTILUS, 10—Com. Rt. Hon. Lord G. Paulet, Feb. 21st, at Oporto from Cork.
NIMBLE, 5—Lieut. J. M. Potbury, Bahama Islands.
NIMROD, 20—Plymouth.
OCEAN, 80—Capt. S. Chambers. Flag-ship, Sheerness, V.-Adm. Sir J. P. Beresford, Bt. K. C. B.
ONYX, 10—Lieut. A. B. Howe, Cork.
ORSTES, 18—Com. W. N. Glasscock, Irish Station.
PALLAS, 42—Capt. M. H. Dickson, 28th Jan. at Barbadoes.
PEARL, 20—Com. R. Gordon, 8th March. sailed from Plymouth.
PÉLICAN, 18—Com. J. Gape, 8th Feb. Corfu.
PELORUS, 18—Com. R. Meredith, 26th Jan. sailed from Gambia for Sierra Leone.
PHILOMEL, 10—Com. W. Smith, 2d Feb. sailed from Gibraltar for Marseilles.
PICKLE, 5—Lieut. T. Taplen, 13th Jan. arrived at Maranham from Bermuda.
PIKE, 12—Lt. A. Brooking, coast of England.
PINCHER, 5—Lt. W. S. Tulloh, Bahamas.
PLUMPER, 12—Lieut. T. Cresser, 18th Jan. River Gambia.
PLUTO, St. V.—Lieut. G. Buchanan, 27th Jan. sailed from Gambia for Sierra Leone.
PRINCE REGENT, 120—Capt. J. W. D. Dundas, Portsmouth.
PROCRIS, 10—Com. J. T. Talbot, 8th Feb. Corfu.
PYLADES, 18—Com. E. Blankley, 2d Dec. sailed from Rio.
RACEHORSE, 18—Com. C. H. Williams, 26th Dec. Sailed from Jamaica.
RAINBOW, 28—Capt. Sir J. Franklin, Knt. 8th Feb. Corfu.
RALEIGH, 18—Com. A. M. Hawkins, 8th Feb. Nap. di Romania.
RANGER, 28—Capt. W. Walpole, 16th Jan. sailed from St. Christophers.
RAPID, 10—Com. C. H. Swinburne, 8th Feb. Marseilles.
RATTLENAKE, 28—Capt. C. Graham, 2d Dec. sailed from Rio.
RAVEN, S. V. 4—Lieut. W. Arlett, Africa.
RECRUIT, 10—Lt. T. Hodges, coast of England.
REVENGE, 78—Capt. D. H. Mackay, Portsmouth.
ROSE, 18—Com. E. W. Pilkington, 7th Jan. at Port Royal.
ROYALIST, 10—Lt. R. N. Williams, Oporto.
ST. VINCENT, 120—Capt. H. F. Senhouse, 8th Feb. Nap di Roma. Flagship V.-Adm. Sir H. Hotham, K. C. B., &c.
SAMARANG—28, Capt. C. H. Paget, 13th Dec. sailed from Bahia.
SAN JOSEPH, 110—Capt. R. Curry, Plymouth, Flag-ship Admiral Sir M. Dixon, K. C. B.
SAPPHIRE, 28—Capt. Hon. W. Wellesley, 15th Jan. sailed from Maranham.
SATELLITE, 21—21st Sept. sailed from Ceylon.
SAVAGE, 10—Com. Rt. Hon. Lord E. Russel, Cork Station.
SCYLLA, 18—Com. Hon. G. Grey, 8th Feb. at Tripoli.
SRINGAPATAM, 46—Capt. Hon. W. Waldegrave, Oct. at Coquimbo.
SKIPJACK, 5—Lt. W. Shortland, Bahamas.
SOUTHAMPTON, 52—Capt. J. M. Laws, 17th Sept. at Madras.
SPARROWHAWK, 18—Com. D. Mayne, 30th Dec. sailed from Jamaica.
SPEEDWELL, 5—Lt. W. Warren, Nassau.
STAG, 46—Capt. Sir T. Trowbridge, Cork.
SULPHUR, 8—Com. W. T. Dance, King George Sound. Australia.

SWAN, 10—Lieut. J. E. Lane, North Sea.
SYLVIA, 1—Lieut. T. Spark, North Sea.
TALAFERA, 74—Capt. S. Brown, 16th March, left Sheerness.
TALBOT, 28—Capt. R. Dickinson, C. B. Nov. Simon's Bay.
TWEED, 28—Com. A. Bertram, 18th Jan. sailed from Madeira, 5th Feb. arrived at Bermuda.
TYNE, 28—Capt. C. Hope, 4th Dec. off Pernambuco.
UNDAUNTED, 46—Capt. E. Harvey, 26th Dec. at Cape, from Mauritius.
VICTOR, 18—Com. R. Russell, 16th Feb. left Lisbon for Halifax.

VICTORY, 104—Capt. H. Parker, Flag-ship. Admiral Sir T. Foley, G.C.B. Portsmouth.
VIPER, 6—Lieut. H. James, Home Station.
VOLAGE, 28—Capt. Right Hon. Lord Colchester, Pacific.
WARSPITE, 76—Capt. C. Talbot, Flag-ship. Adm. Sir T. Baker, K.C.B. 9th Dec. at Rio.
WINCHESTER, 52—Capt. Rt. Hon. Lord W. Paget, 16th Jan. left Barbadoes for Jamaica. Flag-ship Vice-Adm. Sir E. G. Colpoys.
WOLF, 18—Com. W. Hamley, 21st. Feb. arrived at Ceylon.
ZEBRA, 18—Com. D. De Saumarez, July, at Madras.

MOVEMENTS OF TRANSPORTS.

The *Amphitrite*, Lieut. Cooley, Agent, sailed on 16th March from Chatham, with Government stores, for Portsmouth.

The *Arab*, Lieut. Harris, Agent, arrived on 20th Feb. at Falmouth, and, on 6th March, at Portsmouth, from the Mauritius, in 140 days, with the head-quarters of the 82d Regiment. The 82d Regt. were landed at Cowes, on the 8th, and went into the Albany Barracks, and she is refitting and preparing for her passage to Leith.

Cygnat, Lieut. Lester, Agent, arrived at Gibraltar on the 4th Feb. from Cork, with sundry detachments for that Garrison. She returned to Portsmouth on the 8th March with various other detachments, from whence she sailed on the 13th for the Nore.

The *Diligence* arrived at Plymouth on 12th December.

The *Ebenezer* arrived at Dublin from Woolwich on the 20th February.

The *Hope*, Lieut. Ryder, Agent, sailed 15th March from Portsmouth for Plymouth, with stores.

The *Neva*, Lieut. Adamson, Agent, sailed from Rio de Janeiro on the 26th of December, and may be daily expected at this port.

The *Orestes*, Lieut. Garrett, Agent, arrived on 27th Feb. from the Mauritius, last from Plymouth, with detachments of the 72d, 75th, and 82d Regiments. The latter, under the command of Capt. Latham, proceeded in the depot vessel on Tuesday, to Albany Barracks, Isle of Wight. The *Orestes* sailed on 1st March for the Nore, with sundry detachments and Government stores for Woolwich and Deptford.

The *Prince Regent*, Lieut. C. Binsted, Agent, arrived at Gibraltar on the 14th Feb. from Dublin, with the remaining part of the 67th Regiment, on their way to Malta.

The *Stentor*, Lieut. Barber, Agent, arrived at Gibraltar on the 8th ult. from Cork, with part of the 67th Regiment, on their way to Malta.

The *Supply* arrived at Portsmouth on the 20th, with stores for that Dockyard.

The *Sylvia*, Lieut. Wesley, Agent, arrived at Malta, on the 17th of Feb. with detachments of the 42d and 93d for that island.

The *William Harris*, Lieut. Stevens, Agent, arrived at Malta on the 17th of Feb. with detachments of the 42d and 93d for that island.

EAST INDIA SHIPPING.

By the Hon. Company's Ships the *Buckinghamshire* and *Waterloo*, from China, which arrived off the Lisard, on the 19th of February; having left China October 21st; the whole of the ships of the season (except the *Winchester*) had arrived in China. The Hon. Company's Ships the *Lady Melville*, *Thames*, and *Duke of Sussex*, were to be despatched about the 16th November for England.—*Hampshire Telegraph*.

On the 29th of February, a Court of Directors was held at the East India House, when the following Commanders took leave of the Court, previous to departing for their respective destinations, viz.: Captain John Innes, *Abercrombie Robinson*, for Bombay and China; Capt. Charles S. Timins, *Reliance*; and Captain John Rennie Manderson, *Charles Grant*, for Bengal and China. Captain Frederick Malan was sworn in to the command of the Ship *Berwickshire*, consigned to China direct.

On the 9th of March, the despatches for Bengal and China, by the Ship *Reliance*, Captain Charles S. Timins, were closed at the East India House, and delivered to the purser of that ship.

On the 12th of March, the despatches for Bombay and China, by the ship *Abercrombie Robinson*, Capt. John Innes, were closed at the East India House, and delivered to the purser of that ship.

At a Court of Directors, held on Thursday, the 15th of March, at the East India House, the following Commanders took their leave previous to their departure for their respective destinations, viz.: Capt. A. F. Proctor, *Windsor*, for St. Helena, Prince of Wales Island, Singa-

pore, and China; and Capt. T. Smith, *London*, for China direct.

The East India Company's Ship *Thames* arrived off Portland the 13th of March; she left China the 18th of November, (in company with the *Lady Melville*, *Farguharson*, *Repulse*, *Duke of Sussex*, and *Vansittart*.) and St. Helena, the 28th of January. The *Repulse*, *Duke of Sussex*, and *Vansittart*, had arrived at St. Helena.

Honourable Company's Ship *Thames*, Captain Forbes, (all well) off Portland, the 13th of March; left China, the 18th of November, 1831; Java Head, the 5th of December; St. Helena, the 29th of January, 1832. The *Vansittart* sailed from St. Helena eight hours before the *Thames*. The *Repulse* and *Duke of Sussex* were to sail the same day. The *Lady Melville* and *Farguharson*, which were despatched from China at the same time as the above four ships, had not arrived at St. Helena when the *Thames* left. The *Atlas*, from the Mauritius; *Vesper*, from Bombay; *Meta*, from London; and *Francis Charkotte*, from Madras, had arrived at St. Helena.

Accounts to the 19th of November have been received from China by the *Thames*, Forbes. By them we learn that the Select Committee have arranged, that all the Chinamen shall be despatched home as soon as they have loaded their cargoes, as the state of affairs was of a very unsatisfactory nature.

On 29th March, the despatches for St. Helena, Prince of Wales's Island, Singapore, and China, by the Ship *Windsor*, Capt. Andrew Frederick Proctor, were closed at the East India House, and delivered to the purser of that ship.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LIST, 1832.

Continued from page 45.

VESSELS' NAMES.	MASTERS NAMES.	WHERE FROM.	WHERE TO.	WHERE LOST.	WHEN.	PARTICULARS.
73 Albion	Hamilton	Glasgow	Sligo	Rosses	4 Feb.	6723
74 America	Donal		Batavia	Torres Str.	31 Oct.	6720 Crew saved.
75 Ann		Glasgow	Arbroath	Off Montrose	8 Mar.	6724 Crew saved.
76 Annie		Aberdeen	Arbroath	Off Montrose	8 Mar.	6724 Crew saved.
77 Betsey		London	Bristol	Off Padstow	19 Feb.	6719 Crew saved.
78 Briton	Dixon	Miramichi	London	St. Paul's Id.	2 Decr.	6724 Crew saved.
79 Cookson	Robinson	Belfast	Maryport	Balcarray Bay	6 Mar.	6725 Crew saved.
80 Ceres	M'Andrew	Glasgow		Scattaree Id.	24 Dec.	6724 Crew 3 saved.
81 Ceres	Hemlin			Stavauger	1 Feb.	6721 Crew saved.
82 Devonshire	Curry	Riga	Antwerp	Doubtful		6720
83 Dolphin	Mitchie	Aberdeen	Sunderland	Foundered	6 Mar.	6724 Crew saved.
84 Eclipse	Winn	Nw. York	Halifax	Sable Island	21 Jan.	6718 All lost.
85 Editha	Law	Quebec	Liverpool	Terceira	21 Feb.	6724 Strauded.
86 Elizabeth		St. John's		Baker Island	19 Jan.	6719
87 Faithful	Carruthers	Sunderland	London	Cook Sand	7 Mar.	6723 Crew 3 drow.
88 Fancy		Jersey	Lisbon	Doubtful		
89 Fresdon	Dawson	Maryport	Belfast	Off Maryport	24 Nov.	6722
90 Gen. Putnam		Liverpool	New York	Barnegat Sh.	30 Jan.	6723
91 Hibernia	Herring	Liverpool	Mobile	E. Breaker	3 Feb.	6723 Doubtful.
92 Hope	Robinson	Liverpool	Eastport	Ragged Id.	10 Jan.	6721
93 Huntley		New Brunswick	Liverpool	West Coast of Ireland	Feb.	6718 Abandoned.
94 Jane	McNaught	M. Video	Bristol	Off Bahia	9 Dec.	6718 Crew mutind.
95 Lady Forbes	Sanderson	Frazerburg	Leith	Off Aberdeen	6 Mar.	6723 Crew saved.
96 Lavinia	Hann	Liverpool	Bremen	I. of Jura	12 Mar.	6725 Crew saved.
97 Maotua	Fish	Yarmouth	Shields	Off Shields	6 Mar.	6723 All saved
98 Margaretta	Spinning	London	Lubeck	Uddewalla	13 Feb.	6718 Crew saved.
99 Mary	Driscoll	Belfast	N. Orleans	Id. of Vache	12 Jan.	6722 Crew saved.
100 Morning Star	Randall	Halifax	Leghorn	Run down	9 Feb.	6720 Crew saved.
101 Nancy	Fotheringham	Jamaica	London	Doubtful		6725
102 Nancy	Strachan	Jamaica	Halifax	Sable Island	Jan.	6723 All saved.
103 Premier		London	Africa	R. Volto	7 Nov.	6723 Crew saved.
104 Red Rover, Yt.	Passmore	England	S. America	R. Real	24 Oct.	6718 All saved.
105 Richard	Taylor	London	Yarmouth	Lowestoffe	7 Mar.	6723
106 Robert and Sarah	Crow	Sunderland		Dudgeon	6 Mar.	6724 Crew saved.
107 Roy. Eagle	Huncal	St. Michl's	London	Doubtful		6725
108 Samuel	Leacy	Newry	London	Doubtful		6724
109 Sir P. Maitland	Johnson		Halifax	Mc. Nab's Id.	19 Dec.	6720
110 Sophia		Peterhead		Off Montrose	7 Mar.	6724 Crew saved.
111 Success		Newcastle	Yarmouth	Dudgeon	5 Mar.	6723 Crew saved.
112 Sussex Oak	Dyer	Sunderland	L. Hampton	Cross Sand	6 Mar.	6723 Crew saved.
113 Swallow	Gregory	Plymouth		Near Bridport	6 Mar.	6723 Crew saved.
114 Thistle	Banks	Glasgow	Westport	Westport	4 Mar.	6724 All saved.
115 Thomas St.	Dall	Leith	Arbroath	Doubtful		6720
116 Union	Wells	Hull	Yarmouth	Mundsley	19 Feb.	6719 All saved.
117 Venus	Wilson	Soderham		Xabia	19 Feb.	6724 Crew saved.
118 Westmoreland		P. Rush	Liverpool	C. Ireland	5 Feb.	6724 All lost.
119 William IV.	Ataval	St. Michl's	London	Doubtful		6724
120 Wm. Henry	McBean	Barbadoes	St. Andrews N.B.	Seal Island	28 Dec.	6723 Crew saved.

VARIETIES.

Convention between His Majesty and the King of the French, for the more effectual Suppression of the Traffic in Slaves. (From the *Portsea Herald*.) Signed at Paris, November 30, 1831.—The courts of Great Britain and France being desirous of

rendering more effectual the means of suppression which have hitherto been in force against the criminal traffic known under the name of "the Slave Trade," they have deemed it expedient to negotiate and conclude a convention for the attainment of so

salutary an object; and they have, to this end, named as their plenipotentiaries, that is to say—His Majesty the King of the United Kingdom of Great Britain and Ireland, the Right Hon. Viscount Granville, Peer of Parliament, Member of the Privy Council, Knight Grand Cross of the Most Honourable Order of the Bath, Ambassador Extraordinary and Plenipotentiary at the court of France; and His Majesty the King of the French, the Lieut.-General Count Horace Sebastiani, Grand Cross of the Order of the Legion of Honour, member of the Chamber of Deputies of the Departments, and Minister and Secretary of State for the Department of Foreign Affairs; who, after having exchanged their full powers, found to be in due form, have signed the following articles:—

Art. 1.—The mutual right of search may be exercised on board the vessels of each of the two nations, but only within the waters hereinafter described, namely, along the western coast of Africa, from Cape Verd to the distance of ten degrees to the south of the Equator—that is to say, from the 10th degree of south latitude to the 15th degree of north latitude, and as far as the 30th degree of west longitude, reckoning from the meridian of Paris. All round the island of Madagascar, to the extent of twenty leagues from that island. To the same distance from the coasts of the island of Cuba. To the same distance from the coasts of the island of Porto Rico. To the same distance from the coasts of Brazil. It is, however, understood, that a suspected vessel descried and begun to be chased by the cruisers whilst within the said space of twenty leagues, may be searched by them beyond those limits, if, without having ever lost sight of her, they should only succeed in coming up with her at a greater distance from the coast.

Art. 2.—The right of searching merchant vessels of either of the two nations in the waters hereinbefore men-

tioned, shall be exercised only by ships of war whose commanders shall have the rank of Captain, or at least that of Lieutenant, in the navy.

Art. 3.—The number of ships to be invested with this right shall be fixed, each year, by a special agreement. The number for each nation need not be the same, but in no case shall the number of the cruisers of the one nation be more than double the number of the cruisers of the other.

Art. 4.—The names of the ships, and of their commanders, shall be communicated by each of the contracting governments to the other, and information shall be reciprocally given of all changes which may take place in the cruisers.

Art. 5.—Instructions shall be drawn up and agreed upon in common by the two governments for the cruisers of both nations, which cruisers shall afford to each other mutual assistance in all circumstances in which it may be useful that they should act in concert. The ships of war authorized to exercise the reciprocal right of search, shall be furnished with a special authority from each of the two governments.

Art. 6.—Whenever a cruiser shall have chased and overtaken a merchant vessel as liable to suspicion, the commanding officer, before he proceeds to the search, shall exhibit to the captain of the merchant vessel the special orders which confer upon him, by exception, the right to visit her; and in case he shall ascertain the ship's papers to be regular, and her proceedings lawful, he shall certify upon the log-book of the vessel, that the search took place only in virtue of the said orders; these formalities having been completed, the vessel shall be at liberty to continue her course.

Art. 7.—The vessels captured for being engaged in the Slave-Trade, or as suspected of being fitted out for that infamous traffic, shall, together with their crews, be delivered over, without delay, to the jurisdiction of the nation to which they shall belong. It is furthermore distinctly understood,

that they shall be judged according to the laws in force in their respective countries.

Art. 8.—In no case shall the right of mutual search be exercised upon the ships of war of either nation. The two governments shall agree upon a particular signal, with which those cruisers only shall be furnished which are invested with this right, and which signal shall not be made known to any other ship not employed upon this service.

Art. 9.—The high contracting parties to the present treaty agree to invite the other maritime powers to accede to it within as short a period as possible.

Art. 10.—The present convention shall be ratified, and the ratifications of it shall be exchanged, within one month, or sooner, if it be possible.

In faith of which, the plenipotentiaries have signed the present convention, and have affixed thereto the seal of their arms. Done at Paris, the 30th of November, 1831.

GRANVILLE, (L. S.)

HORACE SEBASTIANI, (L.S.)

Fall of the Cliff at Fowey.—On the 23d of February, the cliff near Punch's Cross, at the entrance of Fowey Harbour, on the eastern side, which had for several days been observed in a tottering condition, fell with a tremendous crash, when about 30,000 tons of stones and earth are supposed to have been separated from the main land.—*Portsmouth Herald.*

Whitstable Harbour.—For some time past the spirited proprietors of the Canterbury and Whitstable Railway have been engaged in constructing, at an immense expense, a large and commodious harbour at Whitstable, on the coast of Kent, which must be of great advantage, not merely to that part of the country, but to merchants and ship-owners in this neighbourhood, who carry on a trade with the south of England. Vessels going there will not henceforth be exposed to the danger they have hitherto had to encounter

from lying unprotected on the beach. The harbour is just finished, and is to be formally opened on the 19th of this month. Every arrangement has been made at Whitstable to facilitate the quick loading and unloading of ships. Contrary to the practice in the generality of costly undertakings of this description, the tonnage dues are, we are assured, very moderate, and much lower than those at Margate, Ramsgate, and Dover.—*Hull Advertiser.*

The Compass.—A series of experiments were tried some years since in various parts of the globe, by Lieut. W. P. Green, of the Royal Navy, for the purpose of ascertaining the true cause of the dip and aberration of the compass, and to illustrate the mysteries of the magnet. Subsequent experiments, chiefly during his voyage to and from South America, in his Majesty's Packet Frolic, have confirmed the results to which he had been previously led, and have induced him to suggest an improvement in the Mariner's Compass.* By removing the thin glass commonly used to cover the compass card, and substituting two glasses about six times as thick, and by substituting for the common box a double box made without nails or screws, saturating the wood with oil, he found that no quantity of metal that could be applied to the glass of the compass-box, would occasion the least deviation of the needle from the true North; nor was any difference perceptible between the lee and weather compasses, such difference being very considerable when the common compasses are compared, as is well known to nautical men. This and other experiments have led Lieut. G. to recommend the use of boxes or cases made of thick glass, with jingles of the same material, and that the binnacle be made without metal, (dove-tailed and with wooden pins,) which he states will wholly prevent what is termed local attraction. Lieut. G. also found a similar counteraction of the local attraction by applying a thick

* We must still doubt this, and have quoted the above, to promote inquiry on the subject.—*E*

cement to the inside, and painting the outside, of the compass-box. A compass of this description, upon which experiments had been made, with a description of the same, was forwarded to the Admiralty by Lieut. G. in July last. The same officer has also invented a new construction for a paddle-wheel for steam-boats, which admits of the wheels being unshipped with the greatest facility, and the whole apparatus being removed from the sides and deck of the vessel, and stowed in the hold, when, the wind being fair, it may be desirable to save the fuel; an improvement which will enable steam-boats to undertake long voyages with a similar quantity of coal. Lieut. G. also plies the same wheels by power gained from a set of revolving sails at the stern of the ship, on the principle of the wind-mill, thus wholly dispensing with steam.

The Compass.—It is known that from the firing of cannon, and violent concussions of the other kinds, the magnetism of the compass needle becomes deranged or confused, in which state it will be generally found to have several instead of two poles, and its directive power is consequently destroyed. A method of restoring the power of the needle has been recently found out; it is by striking it transversely on each side of its centre, which instantaneously and perfectly restores its power.—*Cambrian.*

Loss of the Ship Huntley, and dreadful Sufferings of the Crew.—This ship, the property of Messrs. Cannon and Miller, of Liverpool, and commanded by Capt. Hanna, sailed from St. Andrew's, New Brunswick, on the 12th ultimo. On the 4th March, lat. 49° 50' long. 21°, nearly 1000 miles from the coast of Ireland, she was struck by a heavy sea, which stove in her stern. The master and crew sought refuge in the tops, where they remained two days. On the third day, the weather having moderated, they succeeded in getting the long-boat out. Unfortunately, they could procure no provisions, and the master and crew, six-

teen in number, committed themselves to the mercy of the waves, with only the clothes they had on, without provisions, except a few pieces of raw salt beef, without water, and without even a compass. After having been buffeted about for some days, (during which a boy, named John Biggin, died from eating the raw meat and drinking salt water), they made, on the 12th inst. Shoe Head, and were descried from Boffin Island, about forty miles from Westport, on the coast of Ireland. A boat was immediately sent off to the assistance of the survivors, who were brought into the harbour. The spectacle of suffering which they exhibited was truly appalling. It was with the utmost difficulty the inhabitants could be got to render assistance to lift them out of the boat, being impressed with the idea that they had come from a ship which had the cholera on board! They were taken to the house of Mr. Hildebrand, and the most prompt and humane attentions were paid to them. They were afterwards removed to the hospital at Westport, having been brought from Boffin by the Hamilton revenue-cutter, and were under care of Dr. Dillon. We regret to state, that two of the crew, the carpenter and a Dutchman, died before their removal. It was feared that some more of the crew could not long survive, having been frost-bitten before they left St. Andrew's. Capt. Hanna, his son, the second mate, and three or four of the seamen, are likely to recover.

Mariner's Church.—Owing solely to the health of his family, we understand that the Rev. W. Scoresby, the highly respected minister of this church, is about to retire from the duties of the establishment, and to accept of a living in the south of England. The vacancy created by the circumstance of the reverend gentleman's removal will not be filled up before the beginning of April next.—*Liverpool Albion.*

His Majesty's Ship Athol, 28, lately returned from the coast of Africa, will shortly be docked, and, probably,

broken up. She was built from larch grown on the estate of the late Duke of Athol, whence her name. The noble Duke planted enormous quantities of larch trees by way of experiment, and the Athol was built at the same time as the Niemen, the former of larch, the latter of Riga fir. This was done by order of the late Admiralty, in order to ascertain the comparative durability of these two kinds of timber. About three years ago these two ships were surveyed at this port, and the result of the survey appears to have been in favour of larch timber over Riga, as the Niemen was broken up immediately after the survey. Larch timber is not, however, fit for building large ships, its lengths being so short.—*Portsmouth Herald*.

Larch timber was first introduced into this country by the late Duke of Argyle. The two first trees of this species, planted by his Grace, are still growing at Dunkeld: they have been transferred from the green-house to the open air, and are said to be magnificent specimens; although some of their offspring, growing in the neighbourhood of Blair, in Scotland, are much more so, having attained the height of 120 feet.—*Inverness Journal*.

It is proposed to erect a Chain Bridge from Saltash, in Cornwall, across the Tamar River to Devonshire, and a bill is now in parliament to carry the measure into effect. An objection has been raised at Plymouth as to some of the provisions of the bill, one clause of which will prevent a boatman from plying within half a mile of the bridge; every cow is to pay one shilling, and every small parcel, even a lady's reticule, will be taxed sixpence. These matters must be altered.—*Hants Telegraph*.

American Navy.—The officers of the United States Navy consist of 1 Admiral, 2 Rear-Admirals, 30 Captains, 30 Commanders, 230 Lieutenants, 400 Midshipman, 35 Surgeons, 50 Assistant-Surgeons, and 35 Pursers. The rate of pay is as follows:—Half-pay on shore—Admiral, 4,000 dollars per annum; Rear-Admiral, 3,000;

Captain, 2,500; Commander, 1,600; Lieutenants are all kept employed—pay as below. Employed in actual service—Admiral, 5,000 dollars per annum; Rear-Admiral, 4,500; Captain commanding a squadron of 150 guns and upwards, 4,000; Captain commanding a squadron less than 150 guns, 3,500; Captain of a ship of the line, 3,200; Captain of a first-class frigate, 3,000; Captain of a second-class frigate, 2,800; Commander, 2,200; Lieutenant commanding a small vessel, or First Lieutenant of a ship of the line, 1,600; First Lieutenant of a frigate, 1,400; First Lieutenant of a sloop of war, 1,300; Lieutenant, and First, of brig or schooner, 1,200; Master of a ship of the line, 950; Boatswain, Gunner, Carpenter, and Sailmaker of a ship of the line, 700; of a frigate, 600; of a sloop, 500.—*Portsmouth Herald*.

Medal to Serjeant Seymour of the Royal Marines.—In consequence of a recommendation from Col. Sir Richard William, K.C.B. Commandant of this division of Royal Marines, the Lords Commissioners of the Admiralty have been pleased to grant a medal and gratuity to Serjeant-Major Richard Seymour, on his discharge, for his meritorious services and general good conduct during a period of twenty-five years. The medal was presented on the 24th ult. in the presence of the battalion, by Lieut.-Col. Hornby, with a very neat and appropriate speech. We trust this will have a good effect, and act as an incentive to others to acquire so honourable a testimonial of their services and good conduct.—*Portsmouth Herald*.

Breadth of the Sound.—The frozen state of this great inlet suggested, a short time ago, to the citizens of Elsinore, to make an exact measurement of its breadth, when it was found to be 6605-Swedish ells (above four miles) at the narrowest part, viz.: between the Stone-halls, on the Swedish side, and the extreme point of the fortress of Kroborg, on the Danish. But from the opposite harbours, Elsinore and Helsingborg, the distance is greater, viz.:

7395 Swedish ells, or fully five miles. We need not thus wonder that the passage of the sound should have been twice effected by our fleets without loss from the fire of the Kroborg batteries, viz.: by Sir John Norris, a century ago, and by Sir Peter Parker, in 1801. — *Edinburgh Journal*.

Royal Munificence. — We have lately learnt the particulars of an act of Royal bounty, that took place a few days previous to their Majesties' departure from Brighton for town, which reflects so much credit and honour upon the humane and benevolent heart of the Sovereign, that it is with the utmost pleasure we advert to it. It having been intimated to the Royal ears, that an officer in the Navy, residing at Brighton with his wife and five children, had been obliged to leave his home through the apprehension of arrest for debt, and that during his absence an execution had been put into his house, which having remained several days unsatisfied, the property, even to the very beds the family lay upon, was about being removed to be sold. His Majesty, on hearing this, in the promptest manner instantly replied, "Go, pay it immediately, never mind what it is, and turn the fellows out." While preparations were going on for the removal of the goods, the lady was astounded by the intelligence that the demands were satisfied, and was convinced of the fact by seeing the officers retire; but still ignorant how it had been accomplished, or who was her generous benefactor that had saved her from ruin. On the following day the visit of a female from the Pavilion, to inquire what was the amount of the debt which was the cause of her husband's absenting himself, enlightened her mind as to the noble author of her salvation. The particulars having been communicated to the King, his Majesty, in the most gracious and generous manner, ordered the debts instantly to be paid; and further directed it to be made known to the lady, that he would see what could be done for her husband, to enable him for the future

better to provide for his family. — *Morning Chronicle*.

Removal of Quarantine Regulations at Hamburg. — Accounts from Hamburg to the 27th February state, that the Senate of Hamburg, in compliance with the wishes of neighbouring states, have come to a determination on the subject of vessels arriving from London or other places infected with cholera. The following are the regulations to be observed:—

"Every ship with a foul bill of health must bring up at Cuxhaven.

"If the crew and passengers are found to be in good health, and five days have elapsed since the ship left the infected place, she is to obtain permission to sail up the Elbe. If less than five days have elapsed since the ship left the infected port, she must remain in quarantine at Cuxhaven till the five days are expired.

"If the ship has cholera patients on board, or if any one has died of the cholera during the passage, she must remain under quarantine for ten days, calculated from the day on which the last patient died or recovered. The ship will be allowed to return to the port whence she came, in case of a refusal to submit to the prescribed quarantine.

"Every ship arriving from an infected port, must, before entering the harbour, deliver to the custom-house yacht the written permission obtained at Cuxhaven to come up the river."

ON COMETS.

There is so much interest in the following, from the pen of M. Arago, that we copy it verbatim from the *Times*.

On Comets in general, and, in particular, on the comet which is to re-appear in 1832, and whose revolution is of six years and three-quarters.

THE public has been a good deal occupied about the comet which is to re-appear in 1832. Many of the daily papers in France have even asserted

that this comet will impinge upon the earth, and break it to pieces; the Board of Longitude has, therefore, thought it advisable to give, in this notice, all that science has hitherto discovered with precision, with certainty, and mathematically, on the route of this heavenly body. This was at first the only object of this article; but, the plan having extended itself, I have been induced to occupy myself, not only with the supposed dangers with which we are threatened by the approaching comet, but I have also discussed the parts and agency which some illustrious philosophers have allotted to many comets, which have appeared in former times, in their explanations of the great physical revolutions to which our globe has been subject.

This notice, or treatise, will be divided into two distinct parts. All the points I touch on in the first might be well introduced into a formal treatise on astronomy. The second section will examine in detail certain hypotheses, which I should have left unnoticed, if the return of the now approaching comet had not called them forth into importance.

2. *What is it that we call a comet?*

A comet, etymologically considered, means a star with a head of hair. The most luminous point, seen at or near the centre, is called the nucleus. The nebulosity, or foggy luminous aureola, which surrounds the nucleus on every side, is called the hair. The nucleus, and this hair together, form the head of the comet. The luminous trains, some long, some short, with which most comets are accompanied, whatever direction they may be projected in, are called tails.

The peculiar motions of comets through the heavens, distinguish them from those new stars, recorded in the history of astronomy, which have appeared suddenly in certain constellations, and which have there been extinguished without changing their place.

The extreme elongation of their

orbits, forms a marked difference between comets and planets; although, when Herschell first discovered Uranus, some observation was necessary before it was decided that this star was not a comet, although it had neither tail nor hair. It was only after an attentive study of the motion of Uranus, that it was proved that this planet described almost a circle round the sun.

3. *Nature of cometary orbits, and their elements.*

Comets, which some ancient philosophers considered as meteors, originating in our atmosphere, are in fact real stars. The simultaneous observations made on them at different stations in the earth, at great distance from each other, proves this.

Since the time of Tycho, who made this discovery, it has been ascertained that comets revolve round the sun, according to regular laws, similar to those which regulate the planetary movements, only that their orbits are very long ellipses, of which the sun always occupies one of the foci. The summit of the ellipse, nearest the sun, is called the perihelion; the opposite point of the ellipse is called the aphelion. These, and all the other technical terms, should be remembered.

Comets are seldom seen from the earth, except when near their perihelion; and, although it cannot well be given here, a simple calculation demonstrates that three observations made on a comet from the earth are sufficient to determine its orbit.*

4 & 5. *On the means of knowing when a comet appears, if it be a new one, or if it has been seen before.*

As soon as a comet has been observed three times, astronomers can calculate its orbit; and they immediately examine and inquire, whether or no the elements of this orbit have been previously registered in the catalogue of comets. By following up this inquiry, and by attending to other

* M. Arago here enters into some considerations of the properties of the parabola and ellipsis, as well as into some astronomical definitions, too profound for the general reader.—Tr.

particulars well known to astronomers, they can decide whether or no the comet under consideration has appeared before or not; and, in this way, Halley has shewn us, that the comets seen by Kepler, in 1607, and by himself, in 1682, were identical—that is, they were the same comet, This gives us an interval of seventy-five years; and, if Halley's conjecture were correct, this same comet ought to have appeared about seventy-five years before 1607; and, in fact, a comet was observed at Ingoldstadt, in 1531 (that is, seventy-six years before 1607) whose inclination, longitude, and other elements of its orbit, agreed with the two succeeding ones; and astronomers no longer doubted the identity of these three comets.

Halley, on this, immediately predicted that this comet would re-appear at the end of 1758, or the beginning of 1759—the elements of whose orbit would differ but little from those just noticed; and this prediction having been fulfilled, at once gave a new era in cometary astronomy. But Halley was prevented from being very precise as to time, from his belief that the motion of this comet would be retarded by the attraction of two of the planets, and that it would employ about 618 days more to reach its perihelion than it did in the preceding revolution; that is, 100 days from the effect of Saturn, and 518 days from the action of Jupiter. The appearance of this comet, therefore, at its perihelion, was calculated by Halley for about the middle of April, 1759. Clairaut, however, discovered that Halley had neglected some small elements; and showed that this comet would be at its perihelion on the 12th of March, 1759; and the event justified these calculations. No doubt being, therefore, left as to the identity of this comet, M. Damoiseau, of the Board of Longitude, having, by immense labour, taken into calculation all the causes of perturbation which will affect this comet on its return, particularly the effect of the planet

Uranus, whose existence was not known in the time of Clairaut, this astronomer, our colleague, has lately come to the following conclusion:—viz., “The interval between the arrival of the comet of 1759, and that of its approaching arrival at its perihelion, will be 28,007 days; which, reckoning from the 12th of March, 1759, will bring us to the 16th of November, 1835.” Thus, then, in the middle of November, 1835, we shall see again, passing near the sun, that comet which, in 1456, with a tail of sixty degrees in length, terrified all Europe by its brilliancy, by its causing astrological predictions, and by a superstitious application of its appearance to the then fearful progress of the Mahometan arms.

6. M. Arago here enters into some details on the comet of 1767, and 1770, whose revolution was fixed at five years and a half, by accurate observation; but he tells us, too, that in 1767, when that comet approached Jupiter, its elliptical orbit was not of five, but of fifty years; and that afterwards, in 1779, on this comet's emerging from the sphere of Jupiter's attraction, its orbit was so altered from what it had been in 1770, that its duration was of twenty years. “Hence,” says he, “we are justified in concluding that this comet of 1770, was brought within the sphere of our vision, in 1767, by the action of Jupiter; and that, in 1779, its orbit was so lengthened by the same action, that we lost sight of it.”

7. *We now come to the comet usually called “the Comet of the Short Period.”*

This comet was discovered at Marseilles, in 1818, by M. Pons; and M. Bouvard presented the elements of its orbit to the Board of Longitude, in January, 1819. A member of the Board was struck with the similarity of these elements to those of a comet observed in 1805; and no doubt was entertained that these comets were the same. It was then suggested that the comet might have returned more than

once in the thirteen years which had elapsed between 1805 and 1818; and this was found to be the truth, by M. Encke, of Berlin, who established, by indisputable calculations, that the elliptical orbit of this comet was completed in about 1,200 days, or about three and three-tenths years. This period of its revolution has been since established by actual observation; for this comet, of 1818, re-appeared in 1822, in 1825, and in 1829, in the places assigned to it by M. Encke beforehand, with very little variation, of which we shall consider the causes presently. This comet will reach its perihelion the 4th of May, 1832; but the astronomers of the Cape of Good Hope, and of New Holland, will be much more advantageously situated to observe it than those of Europe.

8. *The comet of six and three-quarter years.*

We are now arrived in our list at another comet, which will re-appear in 1832, and whose proximity to us will be, we are assured, so fatal to the earth and its inhabitants.

This comet, which astronomers have agreed to call the $6\frac{3}{4}$ years comet, and which has been announced by several writers as threatening our globe with such dreadful ruin during this year of 1832, was first perceived at Johannisberg by M. Biela, on the 27th of February, 1826, and ten days after by M. Gambart, at Marseilles, who, calculating its parabolic elements, ascertained that this comet had been observed before in 1805 and in 1772. This comet, therefore, is periodical, and it became necessary, in order to determine accurately the time of its revolution, to quit the parabolic elements, and to found calculations on its elliptical elements. M. M. Clausen and Gambart undertook this calculation, and they both came to the result, that this comet revolved round the sun in something less than seven years.

This result was adopted at once, for in 1826 philosophers had completely

abandoned the old notion, that the revolutions of comets must be, of necessity, of very great length and duration. However, after the example of the comet of 1770, it would have been hazardous to predict the future re-appearance of this heavenly body, before calculating all the derangements which it might suffer from different planets; our colleague, M. Damoiseau, therefore undertook this long and minute calculation, and the result was, that the comet of $6\frac{3}{4}$ years will cross the plane of the ecliptic, that is, the plane in which the earth moves, on the 29th of October, 1832, before midnight. Now, as the earth during its course round the sun never quits the plane of the ecliptic, it is in that plane alone that a comet can strike against it, so that, whatever dangers we may have to fear from the comet in question, will be on the 29th of next October, before midnight.

The next consideration is,—will this comet, when it crosses the plane of the ecliptic, pass near, or over, any part of the earth's orbit? for this it must do, to cause any mischief.

On this point, M. Damoiseau's calculations show us that the comet will cross the plane of the ecliptic *a little within our orbit*, and at such a distance from it as is equal to four radii and two-thirds of our globe; and, we may say, that this small distance *may disappear entirely*, if the elements given by M. Damoiseau be submitted to certain minute variations, which it would not be easy to account for, or remove.

Let us take, however, the distance of four radii and $\frac{2}{3}$ as the real and true distance, we must recollect that this distance is measured from the centre of the comet, and then let us consider whether or no the dimensions of this body be sufficiently great for some part of it to overlap or lie on our orbit.

(To be concluded in our next.)

PROMOTIONS AND APPOINTMENTS.

From the Naval Papers.

PROMOTIONS.—*Captains*, R. Webb; C. Wyvill. *Commanders*, E. H. Butterfield. G. Gratrix, *rel.* C. Richardson, *rel.* W. A. Thompson. *Lieutenants*, C. H. Badoes; C. Eden; G. A. Henry; W. Houston. *Royal Marine Corps*. *Lieut.-Col.* T. Adair, C. B. Major. N. Cole. *First Lieutenants*, C. Barnes, J. Collia.

APPOINTMENTS.—*Captains*, H. Eden, Conway; *Commanders*, J. Drake, Britannia; O. Foley, Asia; G. A. Sainthill, Britannia. *Lieutenants*, J. Burrough, Melville; J. M'Clin-toch Clive, St. Vincent; G. A. Henry, War-spite; W. Johnstone, Conway; B. Kerr, Con-way; A. Lavie, Winchester; Hon. D. W. A. Pelham, Conway; Lord Clarence Paget, St. Vincent; T. Richmond, Isis; J. Thompson, Brisk. *Masters*, J. Fanshaw, Victory; J. Hen-derson, Asia; G. Smith, Pearl; A. Thompson, Talavera; *Second Masters*, W. T. Onion, Victo-ry; C. L. Spence, Victory. *Midshipmen*, G. B. Hooke, Rainbow; G. A. Shafto, Conway; A. Wilson, Ariadne; *Assistant Surgeons*, J. Atcheson, Victory; J. Lambert, Pigeon; J. Morrison, Conway; *Purser* J. B. E. Soden, Samarang; *Clerks*, W. Adam, Alfred; G. Dix, Jupiter; D. J. Simpson, Britannia. **ROYAL MARINES.** *Lieut. Col.* T. Adair, C. B. Chat-ham Division; H. N. English, Retired List. *Majors*, N. Cole, Plymouth Div.; R. S. Wil-kinson, Paymaster Chatham Div.; *Captains*,

J. E. Jones, Portsmouth Div.; R. Webb, Chatham Div. *First Lieutenants*, C. Barnes, Portsmouth Div.; J. B. Castieax, Artillery; J. Collis, Portsmouth Div.; W. H. Devon, Chath. Div.; R. Henry, Artillery; R. Steele, Adj. Ports. Div.; *Second Lieutenant*, F. W. Malthy, Victory; *Assistant Surgeons*, J. Clark, Woolw. Div.; J. Donovan, Portsm. Div.; J. Lardner, Chath. Div. *Chaplains*, T. Terris, Asia; G. Fisher, Victory; C. H. Lethbridge, San Josef.

The King has been graciously pleased to appoint John Tremayne Rodd, Esq. and the Hon. Fhos. Capel, C. B., Rear-Admirals of the White, to be Knights Commanders of the Most Honourable Military Order of the Bath, in the room of Admiral Sir Richard Hussey Bickerton, Bart. and Vice-Admiral Lord Henry Paulet, deceased.

Capt. G. W. Courtney, R. N. late of His Majesty's Ship *Mersey*, is appointed His Ma-jesty's Consul at the Island of St. Domingo.

The Gazette of the 24th Feb. states, that Captain W. A. Montagu, C. B., R. N. has re-ceived the honour of Knight Commander of the Royal Hanoverian Guelphic Order.

Mrs. Smith, widow of the late Mr. Smith, who was killed at Navarin, while holding the situation of Master of His Majesty's Ship Asia, is appointed Housekeeper at the Ad-miralty.

FOREIGN MAILS.

For
BOMBAY—Boyne, *Brown*, from East India Docks, April 8th.
BUENOS AYRES—Sarah Birkett, *Cook*, from Liverpool, April 1st.
CALCUTTA—Hercules, *Faughan*, from East India Docks, April 3d. Hindostan, *Redman*, from West India Docks, April 20th.
CAPE OF GOOD HOPE—Mary and Jane, *Winter*, from London Docks, April 2d.
CEYLON—Salacia, *Addison*, from London

Docks, April 2d. Achilles, *Duncan*, from London Docks, April 10th.
MADRAS—Madras, *Beach*, from East India Docks, May 1st.
MAURITIUS—Salacia, *Addison*, from London Docks, April 2d.
SYDNEY—Pegasus, *Hewlett*, from London Docks, April 15th.
SWAN RIVER—Edward Lombe, *Frceman*, from St. Katherine's Docks, April 10th.

Births.

On Monday, the 21st of February, at Barton Cottage, near Lichfield, the lady of Captain Wm. Proby, R.N., of a son and heir.
Lately, the lady of Captain W. Hillyar, R.N. Somerset-place, Plymouth, of a daughter.
Lately, the lady of Captain George Peirce, R.N., Home Park, of a daughter.
At his residence in Cold Harbour, Gosport, on the 29th of February, the lady of Captain James Burney, R.N., of a son.
On the 26th of February, at George-place, Lewisham, the lady of Commander William Tucker, R.N., of a son.
On the 10th of August last, at Bombay, the lady of Captain Sir Charles Malcolm, R.N., and superintendant of the Bombay marine, of a son.
On the 1st of March, at Clifton, the wife of Lieut. H. M. Deuham, R.N., of a daughter, her fourth child.
At Strete Raleigh, the lady of Capt. Buller, R.N., of a daughter.
On Monday the 5th of March, at Southsea, the lady of Captain H. Gould, R.N., of a son.
On the 1st of March, the wife of Mr. John Thomas Crout, Master, R.N., of a daughter.
On Sunday the 4th of March, at Falmouth, the lady of Lieut. Griffin, of His Majesty's brig Eclipse, of a daughter.

At Stoke, on Tuesday the 13th of March, the lady of Captain Edward Hawes, R.N., of a son.
The lady of Lieut. Macarthur, of Bideford, of a daughter.
On the 10th of March, in George-street, the wife of Lieut. Shapcote, R.N., of a daughter.
On the 17th of March, in High-street, the lady of Captain the Right Hon. Lord W. Paget, R.N., of a son.
On Wednesday the 14th of March, at Ply-mouth, the lady of Captain Maule, of the Royal Marines, of a daughter.
At Trafalgar Place, Stoke, on Wednesday, the 14th of March, the lady of Captain J. Wil-son, R.N., of a daughter.
On the 17th of March, at Trematon Castle, Cornwall, the lady of Captain John Jervis Tucker, R.N., of a daughter.
On the 29th of February, the lady of Capt. W. Mudge, R.N., of a daughter.

Marriages.

At Newhaven, by the Rev. James Carnegie, Vicar of Seaford, the Rev. C. H. Lethbridge, Chaplain of His Majesty's ship San Josef, to Sarah Anne, eldest daughter of the late J. B. Stone, Esq., of Newhaven.
At Florence, Captain Oakes, R.N., and son of O. R. Oakes, Esq., of Newton and Bury St. Edmund's, Suffolk, to Caroline, daughter of Wm. Bryan, Esq.

On the 15th of March, at North Berwick, Henry William Bruce, Esq., Captain in the Royal Navy, and second son of the late Sir Hervey Bruce, Bart., of Downhill, county of Londonderry, to Mary Minchin, youngest daughter of the late Col. George Dalrymple.

At St. Margaret's, in Westminster, W. R. Cooley, R. N., to Margaret, youngest daughter of the late Joseph Tilstone, Esq., of Newcastle, Staffordshire.

Deaths.

On Tuesday the 14th of February, at his residence in Halberton, Captain Henry Laroche, R. N., aged 64, a magistrate and deputy lieutenant for the county of Devon.

At Stapleton-place, Bristol, Commander Donovan, R. N.

At Worthing, on the 20th of February, Dr. John White, Royal Navy.

On the 20th of February, at the Royal Naval Hospital, Plymouth, of an affection of the heart, Lieutenant Walter Lloyd, of that division of Royal Marines.

Lately, at Guernsey, Mr. John O'Connor, Purser, (1877.)

On the 20th of February, after a long and painful illness, at the Royal Academy, Cold Harbour, Gosport, in the 70th year of his age, William Burney, Doctor of Laws, and an active and zealous magistrate of the county of Hants. Dr. Burney was the author of an extensive Marine Dictionary, and other valuable works; and was well known to the scientific world, by his excellent Meteorological Observations. In early life he established the Royal Academy at Gosport, which has flourished for more than forty years with unprecedented success, many of our most distinguished naval and military officers having been educated under this accomplished scholar, and worthy man, whose urbanity and kindness secured the esteem and regard of his numerous pupils, many of whom, in the time of war, were at an age fully to appreciate his valuable services.

During the last four years, the young gentlemen have been deprived of his personal superintendence, by the severe illness which terminated his useful life; but his place was most ably supplied by his son, H. Burney, of the University of Cambridge, who had assisted his lamented father for more than ten years. Dr. Burney was without ostentation, pious, steady and earnest in his religious duties, a truly affectionate and kind husband and parent; an upright magistrate, tempering justice with mercy; a patient and zealous preceptor, and a most worthy benevolent man. His memory will long be cherished by his family, and a numerous circle of friends; for, throughout his long and useful life his conduct was such as to afford the brightest example to all around him. His loss will be long deplored by the poor and needy; and his bounty will be remembered with gratitude, by many once friendless individuals now comfortably stationed in life through his benevolent exertions. Doctor Burney has left a widow and large family to lament his loss, and the inhabitants of Gosport to deplore the death of a most excellent man, whose heart was susceptible of the finest feelings of charity and benevolence. We are authorized to state, that his Majesty has been most graciously pleased to continue his royal patronage to the Academy at Gosport, and to express through Sir Herbert Taylor, his condolence and regret, to the family, on the death of the late Dr. W. Burney.—*Portsmouth Herald.*

Melancholy Death of Lieutenant R. Hambley, R. N.—On the morning of Thursday the 1st of March, as a boy named Woolcock was gathering limpets in a small solitary creek, about two miles east of Portreath, Cornwall, he espied the leg of a human body protruding from a large crevice in one of the rocks. Alarmed at the

discovery, he was afraid to approach the spot, but gave information to some cottagers who lived near, and who, on hastening to the place, found it was the body of a man; but so firmly fixed in the crevice, by an accumulation of sand and stones, that they had considerable difficulty in disengaging it. On bringing the corpse to the top of the cliff, it appeared from its apparel to be that of some respectable individual, but it was extremely difficult to guess the cause of its being found in such a place. The head, also, being covered with blood, indicated that the deceased had approached the cliff from the land. The body was then taken to the inn at Portreath, but no one could be found to recognise it. Nothing but a few pence was found in the pockets, and the only clue to the identity of the body was the initials R. H. marked on its clothes. A coroner's inquest was held on Saturday morning. Verdict, "Found dead." Nothing, however, appeared, to clear up the mystery, until intelligence was received that Lieutenant Hambley, of the coast guard station at Mousehole, had been several days absent from his family, and was known to be in a state of mind which warranted the most alarming apprehensions of his safety. Some of the boatmen who had been in search for him came to Portreath, and identified the body to be that of the unfortunate officer. It appears that some years ago he was wounded in his head, while on service in the West Indies, from the effects of which he never completely recovered, and had returned from an asylum but eight weeks before the melancholy catastrophe occurred.—*Morning Post.*

At Putney, on the 4th of March, after a severe illness, George Pettitward Eyre, Esq., of the Royal Navy, in the 41st year of his age.

On Thursday, the 8th of March, aged 56, Mr. Thomas Slade, sen. of the Rainbow, St. George's-square, Portsea.

On Sunday, the 4th of March, at his house, Chapel, in the 77th year of his age, Mr. John Bray, Harbour Master, at Southampton.

At Bugle-street, Southampton, Lieut. N. F. Nixon, R. N., aged 83 years.

At Mousehole, Mr. Joseph Soady, Purser of the Royal Navy.

Lately, Lieut. Mr. G. Royle, late Chaplain of His Majesty's Ship Dryad.

On the 17th of March, at his father's residence, in the Royal Hospital, at Haslar, Lieut. Frederick William Bolton Pearce, R. N.

The following is an extract of a letter, dated Bermuda, December 31, 1831:—"On the morning of the 11th," observes Mr. Campbell, the Surgeon of the *Winchester*, "I accompanied Lieut. Taplen in his gig to Hamilton; at half-past three we put off from the wharf, and pulled out to the middle of the harbour, when Lieut. Taplen ordered the sail to be set; this was immediately done; but considering it pressed too much on the gig, he ordered the boat's crew to take a reef in; the sail was then lowered a little, but not down altogether, and when in the act of leaning over to reef the sail, a sudden squall took the boat, which was in an instant upset, and, lamentable to say, poor Taplen was drowned. By the prompt assistance of a boat, belonging to a vessel which had arrived that morning from New Providence, my own life, and that of all the boat's crew, was miraculously saved, after being twenty minutes in the water. I supported poor Taplen some time with my arm, but I was so exhausted, that I was reduced to the frightful extremity of disengaging myself from him, in order to save my own life. The boat's crew then took hold of him; although life was extinct, he was never allowed to sink; the body was conveyed with me to the hotel, where a coroner's inquest was instantly held upon it, and, on the following day, the remains of my departed friend were removed to the Naval Hospital for interment."—*Hampshire Telegraph.*

THE
NAUTICAL MAGAZINE,

§c.

MAY, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

26. DANGER between *Isle D'Yeu and the Coast of France*. Lat. 46° 41' N. Long. 2° 9' W. *Depth of Water uncertain*. Var. about 2½ pts. W.

(TRANSLATION.)

“ The Prefect of Marine at Rochfort, in the commencement of last year, forwarded the following notice to the Minister of Marine.

“ A ship has sunk at sea in the vicinity of *Isle D'Yeu*. One of her masts, which appears to have been broken off near the deck, is inverted, and only held by the rigging. It remains projecting five or six feet above the surface of the water, inclined in the direction of the current.

“ The position of the danger on which this ship lies is exactly in the route from *Isle D'Yeu* to *St. Gilles sur Vie* (French coast), about half-way between the island and the main land. It is two and a half leagues S. E. by E ½ E. from *Point du Corbeau* of *Isle D'Yeu*, and N. W. by W ½ W. at the same distance from *Point Pilours St. Gilles*.”

In the beautiful charts of the French coast, constructed under the direction of *M. Beautemps Beaupré*, about a quarter of a mile to the northward of this danger, there is twelve fathoms; but the bottom appears uneven. To avoid it, when in the latitude of it, keep over towards the island or the coast.

27. SOUTH STACK LIGHT, COAST OF WALES.

Notice to Mariners.

“ *Trinity-House*, London, 29th March, 1832.

“ Notice is hereby given, That, with a view to facilitate the passages of His Majesty's Post Office Packets, from *Dublin* to *Holyhead*, this Corporation has

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caused a moveable Light Room to be constructed, for the purpose of exhibiting a light near the margin of the sea, at times when the high land, upon which the South Stack Light House stands, is enveloped by fog, and the said light is thereby obscured.

"This *occasional* light is now ready for exhibition, and masters of vessels and other mariners are to observe, that the Light will be coloured *red*, and placed upon the N. W. point of the island, about 25 feet above high-water mark:—that it will be visible in a W. S. W. and N. N. E. bearing:—and that it will be lighted at nine o'clock in the evening, on occasions only of thick or hazy weather upon the high land, when the revolving light is supposed to be obscured.

"By order,

"J. HERBERT, Secretary."

28. BIDEFORD BAR LIGHTS, NORTH COAST OF DEVON.

Notice to Mariners.

"Trinity-House, London, 12th April, 1832.

"A dangerous Shoal having recently grown up in the Fairway, within Bideford Bar; and it having, consequently, become necessary to alter the line of direction of the Leading Light-Houses on Braunton Burrows, which can no longer be safely used upon their former bearing of S. 49° E.:—

"Notice thereof is hereby given, and that the works for that purpose will be completed on the 10th day of May next, on and from which date the line of those Light-Houses will be altered, and vessels may then safely cross the Bar, with the Lights in one bearing about S. 42° E. (instead of S. 49° E.) which will lead them to the north-eastward of the Bank in question, when, passing the Buoys upon their starboard hand, they may proceed up to Appledore Pool, as heretofore.

"By order,

"J. HERBERT, Secretary."

29. ANGERSTEIN'S ROCKS. *North Coast of Brazil.* Lat. 4° 28' S. Long. 37° 6' W. *Soundings 11 Feet.*

Extract of a letter from Mr. John Bouch, master of the brig Angerstein, dated Rio Jaguaribe, 15th December, 1830:—

"In lat. 4° 28' S. and long. 37° 6' W. I came through a cluster of rocks, thirteen in number, from two to three fathoms under water. I ran close along side of one; it was quite visible under the water, and I hove the lead on it myself, and had not more than 11 feet water. They are not dangerous by day; but I should not like to be among them by night, with a sea on. The rocks being of a dark-brown colour, they shew themselves sufficiently for a vessel to pass clear of them; and before a second cast of the lead can be got, you are in 10 fathoms water. They lie in a triangular form, about 11 miles from the land, with Ponto do Mel, S. S. E. $\frac{1}{2}$ E. the Red Mount on the Return, W. by N. $\frac{1}{2}$ N. 7 or 8 leagues. If you think this worth communicating, I shall be obliged by your doing so, as they are not laid down in any chart that I have seen.

"JOHN BOUCH."

30. **THE ARIEL ROCKS.** *Coast of Buenos Ayres.* Lat. $40^{\circ} 1' S.$
Long. $57^{\circ} 37' W.$ *Rocks supposed to be above water.*

Extract from the log-book of the schooner Ariel, of Whitehaven, Thomas Dixon, master, on her passage from Liverpool to Valparaiso, December 22d, 1827.

"At 11 hours 45 minutes A.M. moderate breezes from the N.E. steering S.S.W. by compass, saw something of a reddish appearance a little above water, at about a quarter of a mile distant. Hauled in for it, sounded, and obtained bottom at 47 fathoms, fine grey sand; the object seen was about 6 feet above the water, and twenty or thirty feet in circumference, but more extensive underneath. When close to, we saw another head at about two or three cables' length to the N.E. of the first, also of a reddish appearance. The sea was breaking over them with a noise; there was some sea-weed and a number of sea-birds about them. These dangerous rocks lie in the general track of vessels round Cape Horn, to the west coast of South America. The latitude was obtained by a good meridian altitude of the sun, and the longitude by good lunar observations taken that day, and by chronometric observations.

(Signed)

"THOS. DIXON, Master."

31. **MARINER'S ROCK.**—*North of the Azores.* Lat. $46^{\circ} 0' N.$
Long. $29^{\circ} 37' W.$ *No Soundings.*

Extract of a letter from Mr. Swinton, master of the Ship Mariner, from London to Miramichi, dated 11th of May, 1831:—

"At 9 A.M. on the 20th of April, we had a very narrow escape of being lost. The ship was laid to the wind, under a close-reefed main-topsail and main trysail, in a heavy gale from the westward, and a high sea, when we saw the sea breaking on something to leeward, not more than 50 or 60 yards from the ship, which we at first took for a vessel bottom upwards; but on nearing it, it could plainly be seen to be a large rock, about 60 feet in length, ragged at the top and high at one end, with weeds growing on it. We set the fore-trysail, and just cleared it not more than thirty yards' distance. By the observation at noon, and longitude by chronometer, it lies in lat. $46^{\circ} 0' N.$ and long. $29^{\circ} 37' W.$ not laid down in the chart; and, I think, will only be seen when there is a heavy sea running; but we could see it very plainly in the hollow of the sea. The south end appeared to be the highest part of it. Sights were obtained for the chronometer at half-past 9, and the meridian observation was very good."

32. **THE RIFLEMAN'S SHOAL.** *Northumberland Strait, Gulf of St. Lawrence.* *Soundings 8 feet.*

Situation of a shoal off the south coast of Prince Edward's Island, in the Gulf of St. Lawrence, on which His Majesty's Sloop Rifleman, Commander William Webb, grounded on the 23d of June, 1826. Var. about $1\frac{1}{2}$ pt. W.

"Remarks taken at anchor, in 7 fathoms, about $2\frac{1}{2}$ or 3 cables' length, S.S.W. of that part on which the Rifleman grounded, are, Point Prim, N.N.W. $\frac{1}{2}$ W.; South Woody Island, E. by S. $\frac{1}{2}$ S.; a point (supposed Point

Jennings) N. $\frac{1}{2}$ W.; a merchant brig on shore on the Indian Rocks, bore S.E. about 3 or 4 miles distant.

"The least water found upon the shoal was 8 feet, about $\frac{1}{2}$ a cable's length to the northward of where the Rifleman grounded. It appears to be a rocky shoal of considerable extent."

33. PASSAGE THROUGH THE BARRIER REEFS, AUSTRALIA.

The passage through the Barrier Reefs for homeward-bound ships from Sydney is now no longer a matter of difficulty or uncertainty, two considerable openings in them having been found in the course of last summer; one to the northward, and the other to the southward, of that called "Stead's Passage," which was previously used.

One of these, discovered by the brig *Joseph Winter*, Richardson, master, is described in the following extract from the log of that vessel:—

Variation $5\frac{1}{2}$ E.

"On 30th May, 1831, we sailed in company with the brig *Rifleman* from Sydney, New South Wales, towards Torres Straits, and on the 18th of June we made breakers ahead between the hours of nine and ten A.M. which proved to be detached from the great Barrier, with several black rocks above water, on their northern side. In the centre the water was very smooth, and as green as grass, although blowing a brisk trade from E.S.E. They appeared to be three miles north and south, and four and a half or five miles east and west, the latitude of the centre would be $12^{\circ} 0'$ S. as near as possible by the observation at noon. From the look-out at the mast-head we saw more breakers, bearing about N. E. a little northerly of us, distant about eight miles, from the east end of the detached reef. We sailed along the north side of the said reef, and soon made the great Barrier ahead, with a fresh wind, and cloudy weather; and as we approached nearer, we made a fine opening nearly ahead, about three-quarters of a mile broad, which we steered for, and, as soon as we got through, anchored under the lee of the Barrier in twenty fathoms water, coarse sand and coral, where we could see more openings both to the north and south of us. The next day, June 21st, we had squally weather, with rain at intervals; did not attempt to get under way. The latitude of the ship at anchor was $11^{\circ} 55' 49''$ S. and $143^{\circ} 47'$ E. long. by means of three good time-keepers, which afterwards agreed to half a minute of the longitude of Booby Island, taken with a good sextant well adjusted. The nearest opening to the northward of us is what is called Stead's Passage. The ebb sets to the eastward and flood to the westward; rise and fall of tide, measured on a small sand-patch, covered at high-water, six feet. The latitude of what we named *Joseph Winter's Strait* (which is that now discovered) is $11^{\circ} 58'$ S. and $143^{\circ} 48'$ E. or thereabouts. Both King's and Flinder's charts are far from being correct about the Barriers.* On the 21st of June we hove up the anchor, and steered about W. and W. by N. and soon passed three sand-patches to the south of us, distant from the Barrier about eight or ten miles, with a few low sand-patches on our starboard hand, one of which bore N. by E. to E. from the western sand

* Neither of these officers had time or opportunity for examining the *Barrier*. Their operations were mostly limited to the coast, and the in-shore dangers, which they met with.—*Ed.*

on our larboard hand : at noon Sir C. Hardy's Island bore S. $\frac{1}{2}$ W. distant seven miles, latitude observed $11^{\circ} 51'$ S. steering about W. by N. ; soundings, since we got under way, eight, nine, and ten fathoms, sailing along Cockburn's Reefs and Islands on our larboard hand, and an extensive reef on our starboard hand. At three hours and thirty minutes P. M. made Bird Isles, between which and Cockburn's Reefs lay two or three small dangers, scarcely visible until almost upon them, right in the track of vessels ; at five P. M. came to anchor in twelve fathoms water, distant one mile from the largest of the Bird Isles ; sent a watering party on shore for the night.

"On the 22d June, eight A. M. got under way, and made sail, sailing about N. by W. with the main land of Australia in sight ; and we find Capt. P. P. King's chart correct from the Bird Isles through the remainder of the strait.

(Signed)

JOHN RICHARDSON.

Brig Joseph Winter.

We have been favoured with a copy of the new edition of Captain Horsburgh's chart of the " Passages through the Barrier Reefs," in which we find the *Joseph Winter's* track laid down, and the opening named accordingly. In addition to this, Captain Horsburgh has inserted the track of the *Eliza*, Groves, master, which vessel passed through an opening in lat. $11^{\circ} 53'$ S. to the northward of Stead's Passage, at the same time that the *Joseph Winter* made her discovery.

These passages, which will, no doubt, become the high road through the Barrier Reefs, are clearly shewn in Captain Horsburgh's above-mentioned useful little chart.

ISLANDS IN THE PACIFIC.

34. CLARION ISLAND, by His Majesty's Sloop *Alert*, in Lat. $18^{\circ} 24'$ N. Long. $114^{\circ} 33'$ W.

His Majesty's Sloop *Alert*, commanded by Captain J. C. Fitzgerald, on her way to San Blas from Callao, in April, 1831, met with an island not laid down in the charts. Bowditch, in his Navigation, places an island called " Clarion Island" in a position three miles of latitude to the southward, and nineteen minutes of longitude to the westward of this discovered by the *Alert* ; and as it is most probably the same island, the above name has been preserved. The middle of the southern side of Clarion Island, by the *Alert*, is in lat. $18^{\circ} 24'$ N. and long. $114^{\circ} 33'$ W.

Captain Fitzgerald describes Clarion Island as rather high, particularly towards the western end, and about eight miles long, in a direction from east to west. From the S. W. it makes in three hummocks, which give it the appearance of a cluster of islands. The south side is bold and steep, with a very heavy surf breaking on it, excepting in one place near the middle, where there is a sandy beach, on which Captain Fitzgerald landed with some difficulty. At less than a mile from this part of the beach, a depth of

eleven fathoms was found. The sea was observed to break off the east end; and off the west end are some rocks, which are high and apparently bold. No fresh water was found on the island. It is frequented by American whalers, probably for the sake of its turtle, a great number of which were seen from the Alert, and one was taken on the beach.

The following islands are mentioned in Bowditch's Navigation; but the position he assigns to them being uncertain, a confirmation of each is very desirable:—

Cloud's Island,	Lat. 19° 46' N.	Long. 115° 0' W.
An Island	.. 19 22	.. 115 15
Gallego Island	.. 1 42	.. 104 5
Nublada	.. 18 17	.. 114 3

The Alert passed about ten miles to the northward of the position of Nublada without seeing the island.

35. COCOS ISLAND. Lat. 5° 33' 10" N. Long. 86° 59' 30" W..

An uncertainty still prevails respecting the size of this island, which some of our readers may have a future opportunity of deciding. With this object, we have extracted the following remarks on it from a review of Captain Vancouver's works, that appeared a short time ago in the United Service Journal. A ship sailing by the island would decide the question; and an opportunity of doing so should not be lost.

"Captain Vancouver also gives a plan of Cocos Island, at which he touched on his way to the Galapagos Islands, and the Ethiopic Memoir for 1824 contains the following remarks on it. 'It is extraordinary that he (Captain Vancouver) should represent the island as only four miles and a half in length, while Captain Colnett gives that length as twelve miles; and this is the more singular, because he has given a plan of the island, and those plans, widely different from each other, correspond with the respective descriptions. We presume that Captain Colnett must be nearest to the truth, and that Captain Vancouver's scale of *miles* should be *leagues*.'

The writer then gives the following reasons for differing from this conclusion.

"In the voyage of the Spanish vessels (*Descubierta* and *Atrevida*) in 1791, we find its situation was determined by the *Atrevida*, and stated to be little more than a league in extent. 'La isla de Cocos tiene poco mas de una legua de extension.' Admiral Krusenstern assigns to it the same in the memoir accompanying his atlas, but does not state his authority. And as the account of Captain Colnett remains unsupported by other authority, we are justified in believing that some unaccountable error must have got into his plan, rather than that the three which we have cited should be incorrect."—*United Service Journal*, v. i. part 2. p. 732.

The following Notes, which are to be continued, are the results of Captain F. W. Beechey's observations in His Majesty's Ship Blossom :—

36. ISLAND OF SALA Y GOMEZ. S.E. *extreme is in* Lat. $26^{\circ} 27' 46''$ S. Long. $105^{\circ} 20' 08''$ W. Var. $8^{\circ} \frac{1}{4}$ E.

This island, when first seen, has the appearance of three rocks: its direction is N. W. and S. E. and it is something less than half a mile long, and a fifth of a mile wide. Some sunken rocks lie off the N. E. and S. E. points; in other directions the island may be approached within a quarter of a mile. A depth of 46 fathoms, sand and coral, will be found N.W. $\frac{1}{4}$ W. distant three-fourths of a mile; and 140 fathoms gray sand N.W. by N. distant $1\frac{1}{4}$ mile from it.

37. EASTER ISLAND. *Perouse Point of Cook's Bay is in* Lat. $27^{\circ} 08' 46''$ S. Long. $109^{\circ} 24' 36''$ W. Var. about 9° E.

The island is of a triangular shape: its length is exactly nine miles from N.W. to S. E., nine and three-quarters from W. N. W. to E. S. E., and thirteen from N.E. to S.W. The highest part of it is 1200 feet above the sea, and in clear weather it may be seen distant sixteen or eighteen leagues. It is 2000 miles distant from the coast of Chili. When first seen, bearing about W. by N., it appeared to be divided into two, rather flat at the top, with rounded capes, the N. E. of which is distinguished by two hillocks. There are a great many volcanic craters on the island, none of which were in action at the time of the Blossom's visit in November, 1825.

ON TIDES.

We are indebted to a correspondent for the following important communication :—

MR. EDITOR,—The vast importance of the maritime interests of a country, so peculiarly situated and so essentially commercial as Great Britain, is so evident, that any and every effort for supporting and cherishing those interests, and defending them from hidden danger, by the diffusion of knowledge, must meet with decided attention: a periodical, therefore, particularly devoted to this purpose, is entitled to the warmest wishes for success from every individual, but more especially from us whose

—“Home is on the deep.”

Allow me then, Sir, through such a channel, to call the attention of our brother sailors in general to a subject intimately connected with Hydrography, but which appears to have been too much neglected—I mean that of *tides*—not to the investigation of the theory of tides; that is a subject worthy the notice of our first mathematicians, and has been ably treated by a Newton, Bernouilli, Mac-lauren, La Place, and, more recently, Lubbock; but it is to actual observations on the *time* and *height* of high and low water, that I would call their attention. The existing observations not only are scanty but extremely inaccurate; in

many cases it is doubtful which tide has been registered; and even on our own coasts are not to be depended on. Without going further, I may point out the port of London as an instance. By referring to three books of navigation within my reach, I find 2h. 46m. 30, and 3h. 22m. given as the time of high water on full and change at London bridge! whereas the fact is 2h. 7m. as shewn in Mr. Lubbock's valuable paper on tides in the Philosophical Transactions for 1831. The observations, even at the London docks, though valuable from their number, are far from correctly taken; both there and at our sea-ports I should be glad to see tide-gauges erected, and the observations accurately registered. The only good one of the sort with which I am acquainted, is in His Majesty's Dock-yard at Sheerness, where there is a tide-gauge, graduated to the tenth of an inch, a good clock by its side, so that the observer may read off the minute of high water; but, to ensure correctness, and to obviate the necessity of watching by night, the ingenious civil engineer of that yard, Mr. Mitchell, has contrived, by the aid of a simple but beautiful piece of machinery, that the gauge shall register itself: nothing further is requisite than to put a sheet of paper round a cylinder, at new and full moon, on which not only the times of high and low water, and the range of the tide, are accurately traced, but every irregularity in its rise and fall may be seen, on simply inspecting the diagram; a self-registering wind-gauge will also shortly be added to this, shewing both the direction and force of the wind, which will make this instrument one of the most perfect of its kind in Europe. The examination of these diagrams is extremely interesting, and had we such from each of our great ports in England, we should be able to arrive at some conclusion as to the disturbing causes: at present we only see the irregularities, but whether arising from local circumstances or otherwise, we know not: that they do not entirely depend upon the wind, is evident, as the highest spring-tide yet measured at Sheerness, viz. 20ft. and the lowest neap 7ft. 9½in. both occurred with a strong S. W. wind. These tide-gauges are very well, and very requisite, in our own ports; but my object, in troubling you with this letter, is to induce officers of ships of war, and captains and masters of merchantmen, to make observations abroad in any part they may chance to be. Such observations require neither skill nor trouble—simply half an hour's attention daily, till well set going, when any commonly attentive observer would do the rest: the results, registered in tables, might be sent either to some dépôt; or perhaps you, Mr. Editor, in your zeal for the advancement of science, would receive them.

Did we sailors only supply observations, mathematicians, with the aid of theory, would furnish us with almost as correct a set of tables for the motions of the ocean, as we have already for those of the celestial bodies; and when such men have devoted their valuable time to these inquiries, surely it is a reproach to us, that they cannot pursue the truth of their theories, or reduce them to practice, for want of our simple observations.

I am, Mr. Editor,

Your constant reader and well-wisher,

NAUTICUS.

March 20, 1832.

[It is to be hoped that the remarks of our correspondent on this important subject may not be made in vain. We believe that the observations on the tides are in progress at some of our ports, but that they are not so generally made as they might be. One of the principal objects of this work is to diffuse all hydrographical information, and we will gladly do all in our power towards forming tide tables from any observations with which our nautical readers may furnish us for that purpose. We would suggest that the time should be noted, whether *mean* or *apparent*, by which these observations are made; and also that the rise and fall of the water above and below a particular fixed mark on the tide-pole be noted, which mark may be taken at pleasure, and called a zero point.—Ed.]

VOYAGES AND MARITIME PAPERS.

I.—*An HISTORICAL SKETCH of the RUSSIAN NAVY, with a Statement of its present Condition.*

THE Russian Navy, although it bears no proportion to the land-forces of that gigantic empire, already begins to rival those of the other great powers of Europe. One hundred and thirty years have hardly elapsed from the capture of *Azof* by Peter the Great, to the battle of *Navarino*; and this short space of time has sufficed, to two of her monarchs, to raise it to its present respectable condition. It is difficult to conceive how these persevering men so soon succeeded in overcoming the repugnance of a class of people so continental in their habits, to an element to which from time immemorial they had been absolutely strangers. In risking himself on the ocean, the Russian, yet a barbarian, trampled on all his most inveterate prejudices, and renounced every object of his affection, to enter on a career, the novelty and danger of which must have inspired him with horror. Nevertheless, these prejudices have been overcome; and Russia, at this day, possesses a hardy race of seamen, well versed in all the various branches of their duty, and who have nobly upheld the honour of her flag.

The history of the Russian Navy cannot be dated previous to the reign of *Alexis Mikhailovitch*. We find an abridged, though faithful account of it, prefacing the regulations which Peter the First gave to his fleet in 1720. This document is very remarkable, from the description it contains, (drawn up, in all probability, by the monarch himself,) of the state in which he found the navy on his accession to the throne, and of what he had done to raise it from its absolute state of nullity. He appears to attach no great importance to the maritime enterprises in the Black Sea, of the immediate successors of *Rurik*. In the 15,000 barques, which *Igor* led before *Constantinople*, he sees but a vast assemblage of mere canoes; yet he deploras that this weak beginning should have led to no more important results, owing to the dismemberment of the empire by *Vladimir the Great*.

From that period, nothing more is heard of the Russian Navy till the reign of *Ivan IVth Vassilievitch*. This enlightened prince, in 1581, invited several Dutch ship-builders to *Arkhangel*, the only port which at that time Russia possessed. The Tartars of the *Crimea* surrounded the shores of the Black Sea, while the Swedes were masters of the mouths of the *Neva* and the *Narova*. The Russians, in fact, possessed but the *Caspian*, and the *White Sea* covered during nine months of the year with ice.

Alexis was the first who saw the importance of a Navy, and, having established a dock-yard on the river Oka, at a short distance from Moscow, he engaged in his service David Butler, a Dutchman, who constructed for him a ship of war, and a small flotilla. This little squadron descended the Volga to the Caspian Sea, but it was almost immediately destroyed by the revolt of Stianka Rasene, which broke out about the same time on that coast. All the crews perished, with the exception of the surgeon, and a Dutchman named Karsteen Brandt, destined by fate to second, at a subsequent period, the son of the Czar, in his great work of creating a navy. This prince, when he was at Izmailof, visited several edifices containing various objects of curiosity, collected by his grandfather, Nikita Ivanovitch Romanof, and he discovered in a loft a sloop built by order of his father. Struck with its form and construction, the young prince questioned his tutor, Zimmermann of Strasburg, if it were yet possible to make use of it. The tutor commissioned Brandt to repair it, and the young prince was impatient to make a trial of the little vessel. Shortly afterwards, Brandt built, by his orders, two small frigates and three yachts, and, in 1649 the young Czar repaired with his squadron to Arkhangel, where, to his inexpressible joy, he embarked, for the first time, on the open sea. His wars with the Turks first gave him the idea of establishing a dock-yard on the Voronega, and in 1696 he launched upon this river two ships, two galleots, twenty-three galleys, and four fire-ships. This squadron contributed powerfully to the capture of Azof, which opened to the Czar the navigation of the sea so called, with which view he established the port of Taganroy.

Such was the slender origin of the Russian Navy; but even so feeble a beginning served to inflame still more the mind of this great monarch, whose whole life appeared to be in the future. The Czar resolved that the Russians should teach themselves an art, which hitherto he had cultivated with the assistance of foreigners. For this purpose, several Russian young gentlemen were sent to Holland, to study ship-building and navigation. The Czar subsequently repaired there himself, and it is a well known historical fact, that Peter Mikhailof worked as master carpenter at Sardam. In 1698, a line-of-battle ship arrived at Arkhangel, mounting 60 guns, in the construction of which, the monarch had himself assisted, and this was the first that Russia ever possessed. This vessel was followed by several others, and thus the Russian navy received its first impulse. In the year 1718, the Russian Navy was composed of twenty-three line-of-battle-ships, and three frigates fit for service, besides a vast number of small craft, manned by upwards of eight thousand men and officers, mostly foreigners. In the year 1723, Peter celebrated a fête, worthy of constituting an era in Russian history. On this

occasion, the Czar exhibited to his navy at Kronstadt, the little sloop that had so powerfully acted upon his youthful imagination. While he steered her, Prince Menchtchikof, and the admirals Sievers, Gordon, Siniavene, and Sanders, were stationed at the oars; and the master-general of the ordnance worked the gun she carried. The whole Russian squadron was drawn up in order of battle, and as the little vessel passed along the line, each ship lowered her flag, and fired a salute, and the crews manning the yards gave three Russian hurrahs: a splendid dinner terminated this solemnity. This sloop, called in Russia, the Sire of the Navy, may be still seen in the fortress opposite the Cathedral of St. Peter and Paul at Petersburg.

It has been calculated that Peter built, during his reign, 112 line-of-battle ships and frigates, that he purchased 20, and captured from the enemy, 1 line of battle-ship, 6 frigates, 6 galleys, 4 yachts, and 65 sloops. He revised with his own hands the regulations of the navy, and established the magnificent ports of St. Petersburg and Kronstadt. Under his two successors, Anna Ivanorna, and Elizabeth Petrovna, the Russian marine was neglected, until the reign of the great Catherine, who, constantly at war, either with the Turks or the Swedes, increased it rather too hastily to a prodigious force. She kept up in the Baltic, one hundred armed vessels, among which were fifty ships of the line, and twenty-two frigates. In the Black Sea she had thirty ships of the line, and frigates, and more than sixty vessels of a smaller class; and in the Caspian sea she had three frigates, two bomb-vessels, three brigs, and several transports. Her squadron of galleys was besides composed of one thousand vessels with oars, two hundred of which were large gun-boats. This immense naval force astonished all Europe, and the splendid victory gained with it by Count Orloff, over the Turkish squadron at Tchesme, in the Archipelago, astonished all Europe. The peace of Koutchour-Kaïnardjo, and the free navigation of the Black Sea, were the fruits of this victory. At a subsequent period, Otchakof and Kinbourn fell into the hands of the Russians, and the conquest of the Crimea made them masters of the entire northern shores of the Black Sea. Taganroy and Coffa lost all their importance after the foundation of Kherson, Odessa, and Sevastopol, and this last-named place became the principal naval station of Russia in that quarter.

The late Emperor Alexander established better order and regularity in the naval affairs of Russia, and he wisely proportioned the number of his ships to that of his neighbours. In the Black Sea, Alexander made the greatest efforts to keep up the squadron, doubtless with the view of one day accomplishing the favourite policy of Russia, viz. the conquest of Constantinople; and under the present reign, a new impulse has been given to the proceedings of the Admiralty.

The Russian Navy, according to the last official return of the Minister of Marine, consists of 32 ships of the line, 25 frigates, 20 corvettes and brigs, 6 cutters, 7 brigantines, 54 schooners, 20 galleys, 25 floating batteries, and 121 gun-boats. This calculation gives a total of 310 vessels, mounting about 6000 guns, manned by 33,000 men, including 3000 marine artillery, and 9000 marines. They are divided into two squadrons, one of which is in the Baltic, and the other in the Black Sea.

The following are the principal ships composing these two squadrons.

IN THE BALTIC.

Line of Battle Ships.

	Guns.		Guns.
Alexander	110	Grand Duke Michel	74
Peter the First	110	Cesarevitch Constantine	74
La Pere Champenoise	84	Vladimir	74
Empress Alexandrina	74	Hangoud	74
Azof	74	Grand Syssoi	74
St. Andre	74	Kronstadt	74
Hezekiel	74	Emmanuel	60
St. Alexander Nefski	74		
			1178

Frigates.

	Guns.		Guns.
Constantine	44	Russia	44
Castor	44	Maria	44
Grand Duke Alexander	44	Provoonoi	44
Olga	44	Diana	44
Princess Lovitch	44	Mercury	44
Kraisser	44	Helena	36
Vestovoi	44		
			564

Corvettes.

	Guns.		Guns.
Greimiachtchü (Thunderer)	24	Gemanistü	24

Brigs.

Okhta, 18 guns; Zeleras, 18; Achilles, 18; Ulysses, 18; Telemachus, 18: in all 90 Guns. 10 line of battle-ships, and several heavy double banked Frigates are now building in the Dock-yards of Okhta and Petersburg.

SQUADRON OF THE BLACK SEA.

Line of Battle Ships.

	Guns.		Guns.
Paris	110	Pimenn	74
Francis the First	84	John Zlatooust	74
Empress Maria	84	Black Eagle	74
King of Prussia	84	Tschesuné	74
Panteleimon	84	Erivan	60
Omega	84	Archipelago	60
Holland	74	Tenedos	60
Superb	74		
Parmenion	74		
			1228

Frigates.

	Guns.		Guns.
Standard	56	Flora	44
Estafette	44	Eustafia	44
Alert	44		

232

Corvettes & Brigs.

	Guns.		Guns.
Diana	28	Mercury	20
Orpheus	20	Mongrelia	15
Jason	23	Papal	20
Ganymede	18		

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Besides which, a flotilla is kept on the Caspian sea, and another on the sea of Okhotsk.

A line-of-battle ship and several frigates form the *squadron of the guard*, manned in time of war by the regiment of sailors of the guard. The remainder of the fleet forms three divisions, each of three squadrons; the first is commanded by a vice-admiral, and the last by a rear-admiral.

The highest rank in the Russian service is that of High Admiral, generally conferred on a member of the Imperial family. The admirals are next, and rank with generals in the army. The vice-admirals rank with lieutenant-generals, and rear-admirals with major-generals. Ships of the line and large frigates are commanded by captains of the first class, and rank with colonels; captains of the second class rank with lieutenant-colonels, and captain-lieutenants with majors. All naval officers, like those of the army, are allowed a number of servants in proportion to their rank. The sailors for the Russian navy are obtained by a conscription similar to that of the army, consisting of one in five hundred, throughout the empire. The conscripts from the Baltic provinces generally make the best sailors.

The expense of supporting the Russian Navy scarcely ever exceeds twenty-five millions of roubles. The pay of the officers is so extremely low, that the government make them a handsome allowance in the shape of table-money. The pay of the sailor is about half a crown a month, and their rations are on a most economical scale; when afloat, they receive daily a pound and a half of biscuit, and a glass of brandy. They receive further, once a month, fourteen pounds of salt beef, five pounds of butter, three pounds of pease, twelve pounds of oatmeal, and one pound and a half of salt, and their ordinary beverage is a fermented liquor called quass.

The discipline of the Russian service is extremely severe. All the crews are organized like the military, and are well drilled in the evolutions of infantry; thus the crew of a Russian man-of-war, on her return from a foreign station, is never paid off, and sent

adrift, as with us; but, on their ship being laid up, they land, and do duty on shore in the arsenals, as marines. In general, the officers are more scientific than practical, though we must allow that some of the ships of Count Heyden's squadron, in the Mediterranean, are manœuvred with a celerity equal to our own. The two admiralties, one of which is at St. Petersburg, and the other at Nikolaev, direct all the operations of the fleets of the Baltic and Black Sea. The principal dock-yards are at Okhta, Kronstadt, Kherson, Archangel, and Voronega. There are eleven hospitals and lazarettos, for the reception of invalids. At St. Petersburg there is a naval college for cadets, and at Kronstadt another for pilots. Two similar establishments are to be found at Nikolaev, and also a school of naval architecture and navigation, besides which, in various parts of the empire, there are several other institutions for the education of sailors' children.

The most important naval station in the Russian empire is Kronstadt, which is capable of containing twenty-five ships of the line. The roadstead is large and spacious, but affords no shelter from the westerly winds, so dangerous in those latitudes. The channel is full of shoals, and the fort has many defects. The mouth of the harbour is so narrow, that no ship can work out with the sea-breeze; the freshness of the water destroys the shipping; besides which, the ice of the gulf of Finland does not allow them to put to sea before the month of May. The Port of Revel, re-established in 1820, is deeper than that of Kronstadt, and the water more saline, but the approach is difficult. Baltiiskoi, formerly Rogerveck, also in Esthonia, is a most spacious harbour, but too shallow for large ships. Catherine the Second conceived the plan of making this port the grand naval station of the empire in the Baltic, but insurmountable obstacles obliged her to relinquish the undertaking. In the White Sea, the port of Arkhangel is safe and commodious, formed by a bay near the mouth of the Dwina. A sand-bank at the entrance may be avoided by sailing along the coast, which is free from shoals. This port, however, is closed by ice for nearly eight months of the year, but it contains an extensive dock-yard.

The principal port in the Black Sea is Sevastopol, in the Crimea. It is a small bay, five versts (about three geogr. miles) in length, and situated upon the southern point of the peninsula. The entrance is defended by some rocks, but the harbour is sufficiently deep for ships of the largest draught, which it effectually protects from the tempestuous weather of this sea. Sevastopol, and the adjoining roadstead of Aktiar, is now the centre of the naval forces of Russia in that quarter. But it is unfortunately situated at an immense distance from the great forests of the empire, from whence it derives its materials for building, and the *terredo navalis* commits such fearful ravages, that ships are obliged to



E. Barrett, Sculp.

*The Remains of His Majesty's late Ship Thais, wrecked at Cape Frio 4 Dec. 1830.
Sketched from the Diving bell 23 Nov. 1831.*

London: Pinner, Son, & Co. & F. B. Nairn 1832

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be refitted every two years. This inconvenience does not exist at Odessa; but this harbour is open to the gales from the south-west, and consequently, while these winds blow, it is insecure.

The port of Kherson, the first Russia ever possessed in these latitudes, has been abandoned. The port of Nikolaev at the mouth of the Ingoul, is the station of the squadron of galleys; it is likewise the seat of the admiralty that directs all the operations of the navy of the Black Sea. Ships navigating this sea will find good anchorage and shelter in the ports of Kzolof and Kertch, where they may winter in perfect safety.

The Caspian Sea presents on its eastern shores a vast number of commodious harbours, hitherto but little frequented. The flotilla kept up by Russia on this sea, is stationed at Arkhangel on the Volga, situated thirty versts (17½ geogr. miles) from its mouth. Large ships are obliged to anchor outside, from the shallowness of the water.

Russia possesses two other ports upon the eastern coast of Asia, *Petropavlofsk* and *Okhotsk*. The former is situated on the sea of Kamstchatka, and is 12,337 versts from St. Petersburg. The water is extremely salt, and tides very strong. *Okhotsk* is situated on the sea of that name, and is 9693 versts from St. Petersburg. It serves the Russians as a point of departure, in their voyages to Kamstchatka and America.

Such is the present condition of the naval power of an empire, whose gigantic military resources, combined with the grasping ambition of the government, have, ever since the memorable campaign of 1812, given her such a decided preponderance in the political system of the European continent. So long, however, as Russia preserves her present geographical *arrondissement*, there will exist physical obstacles to her becoming a great maritime power. But should ever the gigantic designs of the Imperial Catherine be realized, should ever the Russian eagle soar above the towers of old Stambol, the naval resources of this empire will then receive a rapid and powerful development, that the combined efforts of Europe would in vain oppose. In her vast inland lake, the Euxine, free from every hostile demonstration, Russia might form a fleet, that at its maturity would rush like an avalanche into the Mediterranean, and sweep every thing before it.

II.—WRECK OF THE THETIS.

LIKE Captain Dickinson, we had also concluded our operations at Cape Frio, when we were favoured with the sketch that accompanies our present number. We consider ourselves fortunate in being able to present our readers with so novel and curious a production, as a view of the bottom of the ocean, in any part of the world

—but here it is strewed with some of its own lawful spoils, the last fragments of the poor Thetis. To nautical readers our sketch will need no explanation, the situation of the anchor and the keelson will sufficiently point out the position of the wreck when she settled down into her last bed, and we propose merely adding a remark or two, from the letters which have been published in the Portsmouth Herald.

The parts marked +, indicate the places from whence the principal part of the treasure has been recovered.

“In compliance with orders to that effect, we went down in the small diving-bell on the 22d of November, 1831. We landed, in the first instance, on a part of the keelson of the Thetis, to which we found still attached several of the floor timbers, those on the larboard side being tolerably perfect, but those on the starboard side being broken off about two feet from the keelson. This mass of wreck was about twenty feet in length, lying in a S.S.E. and N.N.W. direction, the centre part of it being about 180 feet from the lower platform, in from six and a half to seven fathoms water, and being nearly covered with ballast, shot, copper bolts, and broken iron-work of various descriptions.

“On the bell being shifted a little farther out, to the S.W. we observed a chain bower cable, but we were unable, by the strictest scrutiny, to find either an end or a shackle. There were two long 18 pounders, a large stone of from three to five tons weight, and a quantity of rubbish upon it. There were two smaller rocks inside this large one, and we saw several dollars lying around them, but from the irregularity of the bottom, it will be impossible to effect a landing, with a view to their recovery, until after the removal of these rocks. At a short distance we saw a part of the fore-castle bulwark, with the breeching of the long gun attached to it; and while at the depth of eleven fathoms, which was as far out as the guys, and as deep as the hose would allow us to go, we also discovered five pigs of silver.

“About twenty feet W.S.W. from the cable, was the capstan, which did not appear to be much injured. We did not land on it, as the ground-swell was increasing, and we were very desirous of exploring as much of the bottom of the cove as possible, and particularly to examine the large stone that we had so frequently, but ineffectually, endeavoured to remove.

“We were then transported about in various directions, and fell in with seven long 18 pounders, and four 32 pounder carronades. We landed on two of the long guns, and one carronade, and on scraping and beating them, we found they were very much corroded; indeed, they were quite honey-combed. We also saw a quantity of old rigging, blocks, bolts, and, in fact, stores of almost every description; but they were all much injured, and consequently of little or no value.

“ On coming to the large stone already mentioned, we were hauled all round it, and were lowered on its inside or N.E. part. The water having become thick in consequence of the groundswell, it was scarcely possible to form any accurate estimate of the weight of this huge block, but, as near as I could judge, it appeared to be from twelve to fifteen feet both in length and width, and certainly nine or ten feet in height; and therefore it would be extremely difficult, if not altogether impossible, to remove it, even supposing its base to rest on the surface of the bottom of the cove, and not at all buried, but which we could not ascertain.

“ We saw some few dollars scattered about between the stone and the keelson, over a space of, perhaps, eighteen or twenty feet, and succeeded in picking up 400 under the corner of one of the two stones inside the large one, where in all probability the greater part of the remaining treasure lies, and which may be recovered by removing the stones.

“ With regard to the recovery of stores, there are two anchors, bower and a kedge, (the latter of which we saw,) a quantity of ballast, copper bolts, iron-work and shot, which we could get up, but the recovery of the chain cable appears impracticable, as well as that of the capstan and guns, without additional launches or gear, as they lay in deeper water, and were nearly covered with large stones and detached pieces of wreck, &c.

“ The bottom of the cove we found throughout to be exceedingly rough and irregular, consisting of rocks and large stones, with the interstices filled up with wreck and rubbish of all descriptions, of which broken glass formed a large proportion, and which has considerably increased the labour and difficulty of saving the treasure we have already got up.

“ The danger of working a bell on so uneven a bottom, and in so exposed a situation, has been excessive, and, even in favourable weather, there is great difficulty, and even danger, in landing on the bottom of the cove, the bell frequently taking a swing or sweep of four or five feet, and then striking against a rock with a force that would have proved fatal, had it struck us, and which no cast-iron bell could have withstood. Taking every thing into consideration, the service, in which we have been employed for the last nine months, has been a most hazardous one, not only as regards the working of the bell itself, when in the cove, but also from the many narrow escapes we have had in transporting the launch to and from the cove, and through the gut.

“ To attempt to clear the cove of the whole of the wreck, stores, &c. would, if at all practicable, be the work of years, as every rock in the bottom will have to be moved.”

On the 9th of December following, little change had taken place in the position of the stores at the bottom of the cove, and it was supposed that, if the large rock could have been removed,

more dollars would have been found. This rock was considered to weigh about thirty-five or forty tons, and is conspicuously marked in the sketch. In various places among the rocks, particularly between the large rock and the capstan, several dollars were seen, but, from the difficulty of getting at them, few were recovered. The rapidity with which the iron work was found to have corroded is remarkable, and we have been favoured with the inspection of a bolt of the *Thetis*, now in the possession of J. Woodhead, Esq. of James Street, Adelphi, that has been sent home by Captain Dickinson. It appears that on the upper surface of this bolt, as it lay at the bottom, five dollars have rested on different parts of it, and the corrosion which has taken place in the iron has served to cement the dollars firmly to it, while the effect on the silver has been that of discolouring it. In the mass, along with the dollars, is also a piece of a broken glass bottle, which adheres to it as firmly as the dollars. We believe it is intended hereafter to lodge this specimen in the United Service Museum, where it is worthy of being preserved in remembrance of the *Thetis*, and the splendid exertions by which nearly the whole of the treasure sunk in her has been saved.

III.—*Fragments of Voyages and Travels.* By Captain BASIL HALL, R.N., F.R.S. *Second Series.* 3 vols. Cadell, Edinburgh.

It is certainly a fortunate thing for the rising generation of sailors, and, probably, no less so for the "elder folks," their parents, that Captain Hall has set to work, and given them these "Fragments" of his Voyages and Travels. To the former it is a production of great utility, combining all they can desire, the experience of thirty years in His Majesty's naval service, interspersed with amusing and interesting scenes of real life; while to the latter it will afford satisfaction to place it in their hands, as by so doing they will relieve themselves in some measure of the duty of giving advice, of which on many points they would be quite incapable. And certainly, if any thing was wanted, this was. Captain Hall has wisely opened his eyes to the deficiency, and we wish him all the success he deserves for making it good.

Long before the *Nautical Magazine* was thought of, the first series of this work had been in the hands of our readers, both at home and abroad, and, we will venture to say, is now treasured up by many a youth, who is anxiously looking forward to the happy time when he shall be launched from school into such scenes as they describe. A second series has quickly made its appearance, to be followed, no doubt, by a third, and probably a fourth. We will therefore devote all the space we can command to the second, reserving the first series of this valuable work for a future number.

Captain Hall opens the three volumes before us, with remarks on that important era in naval servitude, which he denominates "taking a line in the service." It is simply that time when a young man has got his lieutenant's commission, and, from a variety of circumstances, over some of which he has, and others he has no control, finds out what part he is destined to take in his profession. We must not allow ourselves to be led away by this subject, on which the navy list could pour forth volumes; and we will leave our young readers to benefit by Captain Hall's advice, assuring them, that more than they are aware of depends on *themselves*. We must also leave Captain Hall to make his peace with his friends in the north of Ireland, should he visit the rich vales of the "Green Isle" again, for his infidelity to the whiskey punch of the north, after he had a taste of what could be produced in the south.

It happened that a ship, to which Captain Hall was appointed as lieutenant, (the *Volage*,) was destined to take out Sir Evan Nepean, when he was appointed governor of Bombay; but the servants and attendants of Sir Evan were, in their own opinions at least, of far more importance than their master. After inveighing against this last sort of lumber in general on board of His Majesty's ships, Captain Hall thus exults, in true sailor fashion, at the change which a day or two at sea produced among these gentry.

"After leaving Spithead, our two days of fair wind were enough to take us clear of the channel, and well off the bank of soundings, far beyond the danger of return. A tolerable spell of bad weather then came on, which in one sense was of essential service, by contributing greatly to assist the first lieutenant's arrangements, though it discomfited most grievously the apple-pie order of those disturbers of his peace, the dandified, shore-going, long-coated gentry before alluded to, and whom the sailors, in their coarse but graphic vocabulary, call 'dog robbers,' from their intercepting the broken meat on its way to the kennel from their master's table. Our gale of wind, indeed, was no gale to speak of; but as the sea rose, and a heavy press of canvass laid the creaking old barky well over on her broadside, many of the beautifully piled boxes, the well-packed portmanteaus, the polished dressing-cases and writing-desks, the frail glass, crockery, and other finery, fetched way, and went rattling, smash! dash! right into the lee scuppers. Along with these dislodged goods and chattels went down, from time to time, several of the astonished proprietors of the half-ruined property, partly actuated by the praiseworthy but vain hope of arresting the course of gravitation and the momentum of a good heavy sea, and partly without the power of choice. In the next instant, the great bulk of these materials were jerked back again, nearly to their original situation, by that peculiar movement, so trying to unpractised nerves, called a lurch to windward. To unpractised ears, the sounds on this occasion lead one to suppose the ship is going to pieces; while the cries for help from the broken-shinned sea-sick landsmen, the bawling for cleats and lashings from the mate of the decks, the thumping of hammers, and the loud laugh of the light-hearted middies, enchanted with the uproar, make a fine concert. The sedative effect of two or three hours of this work exceeds fresh-water belief; so that in a day or two, Messrs. Neptune, Boreas, First Lieutenant, and Co., have re-established their legitimate authority so completely, that neither butler, cook, gentleman's gentleman, nor any other

passenger, ever afterwards ventures to indulge in those liberties which, at first coming on board, he fancied might be taken with impunity.

“Our amiable guest, indeed, the late Sir Evan Nepean, governor of Bombay, I must do him the justice to say, was the least troublesome of passengers. The rest of our party, too, though squeezed together in a manner every way different from their usual habits, made themselves so agreeable, not only by their conversation and accommodating manners, but by their constant desire to compensate to us for the derangement which their intrusion, as they were pleased to call it, made in our comforts, that we were heartily sorry to part with them.”

The passage out affords Captain Hall ample subject for instructive remarks on “the tropical regions at sea,” “the trade winds,” and “aquatic sports,” from which latter we must extract the account of taking a shark, that inveterate enemy of all sailors. Captain Hall always took care to have a monkey in the ship he commanded, from pure principle; and Jacko, it appears, was the first to discover the subject of the following story.

“The sharp-curved dorsal fin of a huge shark was now seen, rising about six inches above the water, and cutting the glazed surface of the sea by as fine a line as if a sickle had been drawn along.

“‘Messenger! run to the cook for a piece of pork,’ cried the captain, taking command with as much glee as if it had been an enemy’s cruiser he was about to engage.

“‘Where’s your hook, quarter-master?’

“‘Here, sir, here!’ cried the fellow, feeling the point, and declaring it as sharp as any lady’s needle, and in the next instant piercing with it a huge junk of rusty pork, weighing four or five pounds; for nothing, scarcely, is too large or too high in flavour for the stomach of a shark.

“The hook, which is as thick as one’s little finger, has a curvature about as large as that of a man’s hand when half closed, and is from six to eight inches in length, with a formidable barb. This fierce-looking grappling-iron is furnished with three or four feet of chain, a precaution which is absolutely necessary; for a voracious shark will sometimes gobble the bait so deep into his stomach, that, but for the chain, he would snap through the rope by which the hook is held, as easily as if he were nipping the head off an asparagus.

“A good strong line, generally the end of the mizen topsail-haulyards, being made fast to the chain, the bait is cast into the ship’s wake; for it is very seldom so dead a calm that a vessel has not some small motion through the water. I think I have remarked, that at sea the sharks are most apt to make their appearance when the ship is going along at a rate of somewhat less than a mile an hour, a speed which barely brings her under command of the rudder, or gives her what is technically called steerage-way.

“A shark, like a midshipman, is generally very hungry; but in the rare cases when he is not in good appetite, he sails slowly up to the bait, smells to it, and gives it a poke with his shovel-nose, turning it over and over. He then edges off to the right or left, as if he apprehended mischief, but soon returns again, to enjoy the delicious haut goût, as the sailors term the flavour of the damaged pork, of which a piece is always selected, if it can be found.

“While this coquetry, or shyness, is exhibited by John Shark, the whole after-part of the ship is so clustered with heads, that not an inch of spare room is to be had for love or money. The rigging, the mizen-top, and even the gaff, out to the very peak; the hammock-nettings and the quarters, almost down to the counter, are stuck over with breathless spectators, speaking in whispers, if they

venture to speak at all, or can find leisure for any thing but fixing their gaze on the monster, who as yet is free to roam the ocean, but who, they trust, will soon be in their power. I have seen this go on for an hour together; after which the shark has made up his mind to have nothing to say to us, and either swerved away to windward, if there be any breeze at all, or dived so deep that his place could be detected only by a faint touch or flash of white many fathoms down. The loss of a Spanish galleon, in chase, I am persuaded, could hardly cause more bitter regret, or call forth more intemperate expressions of anger and impatience, than the failure in hooking a shark is always sure to produce on board a ship at sea.

“On the other hand, I suppose the first symptom of an enemy's flag coming down in the fight was never hailed with greater joy than is felt by a ship's crew on the shark turning round to seize the bait. The preparatory symptoms of this intention are so well known to every one on board, that, the instant they begin to appear, a greedy whisper of delight passes from mouth to mouth amongst the assembled multitude; every eye is lighted up, and such as have not bronzed their cheeks by too long exposure to sun and wind to betray any change of colour, may be seen to alter their hue from pale to red, and back to pale again, like the tints on the sides of the dying dolphin.

“It is supposed by seamen that the shark must of necessity turn on his back before he can bite any thing; and, generally speaking, he certainly does so turn himself before he takes the bait. But this arises from two circumstances; one of them accidental, and belonging to the particular occasion, the other arising out of the peculiar conformation and position of his mouth. When a bait is towed astern of a ship that has any motion through the water at all, it is necessarily brought to the surface, or nearly so. This of course obliges the shark to bite at it from below; and as his mouth is placed under his chin, not over it, like that of a Christian, he must turn nearly on his back before he can seize the floating piece of meat in which the hook is concealed. Even if he does not turn completely round, he is forced to slue himself, as it is called, so far as to shew some portion of his white belly. The instant the white skin flashes on the sight of the expectant crew, a subdued cry, or murmur of satisfaction, is heard amongst the crowd; but no one speaks, for fear of alarming the shark.

“Sometimes, at the very instant the bait is cast over the stern, the shark flies at it with such eagerness, that he actually springs partially out of the water. This, however, is rare. On these occasions he gorges the bait, the hook, and a foot or two of the chain, without any mastication or delay, and darts off with his treacherous prize with such prodigious velocity and force, that it makes the rope crack again as soon as the whole coil is drawn out. In general, however, he goes more leisurely to work, and seems rather to suck in the bait than to bite at it. Much dexterity is required in the hand which holds the line at this moment; for a bungler is apt to be too precipitate, and to jerk away the hook before it has got far enough down the shark's maw. Our greedy friend, indeed, is never disposed to relinquish what may once have passed his formidable batteries of teeth; but the hook, by a premature tug of the line, may fix itself in a part of the jaw so weak, that it gives way in the violent struggle which always follows. The secret of the sport is, to let the voracious monster gulp down the huge mess of pork, and then to give the rope a violent pull, by which the barbed point, quitting the edge of the bait, buries itself in the coats of the victim's throat or stomach. As the shark is not a personage to submit patiently to such treatment, it will not be well for any one whose foot happens to be accidentally on the coil of the rope, for, when the hook is first fixed, it spins out like the log-line of a ship going twelve knots.

“The suddenness of the jerk with which the poor devil is brought up, when

he has reached the length of his tether, often turns him quite over on the surface of the water. Then commence the loud cheers, taunts, and other sounds, of rage and triumph, so long suppressed. A steady pull is insufficient to carry away the line, but it sometimes happens that the violent struggles of the shark, when too speedily drawn up, snaps either the rope or the hook, and so he gets off, to digest the remainder as he best can. It is, accordingly, held the best practice to play him a little, with his mouth at the surface, till he becomes somewhat exhausted. During this operation, one could almost fancy the enraged animal is conscious of the abuse which is flung down upon him; for, as he turns and twists and flings himself about, his eye glares upwards with a ferocity of purpose which makes the blood tingle in a swimmer's veins, as he thinks of the hour when it may be his turn to writhe under the tender mercies of his sworn foe!

"No sailor, therefore, ought ever to think of hauling a shark on board merely by the rope fastened to the hook; for, however impotent his struggles may generally be in the water, they are rarely unattended with risk when the rogue is drawn half way up. To prevent the line breaking, or the hook snapping, or the jaw being torn away, the device formerly described, of a running bow-line knot, is always adopted. This noose, being slipped down the rope and passed over the monster's head, is made to jam at the point of junction of the tail with the body. When this is once fixed, the first act of the piece is held to be complete, and the vanquished enemy is afterwards easily drawn over the taffrail and flung on the deck, to the unspeakable delight of all hands. But although the shark is out of his element, he has by no means lost his power of doing mischief; and I would advise no one to come within range of the tail, or trust his toes too near the animal's mouth. The blow of a tolerably large-sized shark's tail might break a man's leg; and I have seen a three-inch hide tiller-rope bitten more than half through, full ten minutes after the wretch had been dragged about the quarter-deck, and had made all his victors keep at the most respectful distance. I remember hearing the late Dr. Wollaston, with his wonted ingenuity, suggest a method for measuring the strength of a shark's bite. If a smooth plate of lead, he thought, were thrust into the fish's mouth, the depth which his teeth should pierce the lead would furnish a sort of scale of the forced exerted.

"I need scarcely mention, that when a shark is floundering about, the quarter-deck becomes a scene of pretty considerable confusion; and if there be blood on the occasion, as there generally is, from all this rough usage, the stains are not to be got rid of without a week's scrubbing, and many a growl from the captain of the afterguard. For the time, however, all such considerations are superseded, that is to say, if the commander himself takes an interest in the sport, and he must be rather a spoony skipper that does not. If he be indifferent about the fate of the shark, it is speedily dragged forward to the fore-castle, amidst the kicks, thumps, and execrations of the conquerors, who very soon terminate his miserable career, by stabbing him with their knives, boarding-pikes, and tomahawks, like so many wild Indians.

"The first operation is always to deprive him of his tail, which is seldom an easy matter, it not being at all safe to come too near; but some dexterous hand, familiar with the use of the broad axe, watches for a quiet moment, and at a single blow severs it from the body. He is then closed with by another, who leaps across the prostrate foe, and with an adroit cut rips him open from snout to tail, and the tragedy is over, so far as the struggles and sufferings of the principal actor are concerned. There always follows, however, the most lively curiosity on the part of the sailors to learn what the shark has got stowed away in his inside; but they are often disappointed, for the stomach is generally empty. I remember one famous exception, indeed, when a very large fellow

was caught on board the *Alceste*, in Anjeer Roads at Java, when we were proceeding to China with the embassy under Lord Amherst. A number of ducks and hens, which had died in the night, were, as usual, thrown overboard in the morning, besides several baskets, and many other minor things, such as bundles of shavings and bits of cordage, all which things were found in this huge sea monster's inside. But what excited most surprise and admiration was the hide of a buffalo, killed on board that day for the ship's company's dinner. The old sailor, who had cut open the shark, stood with a foot on each side, and drew out the articles one by one from the huge cavern into which they had been indiscriminately drawn. When the operator came at last to the buffalo's skin, he held it up before him like a curtain, and exclaimed, 'There, my lads; d'ye see that! He has swallowed a buffalo, but he could not dis-gest the hide!'

If sailors enjoy their jokes and fun, none really feel the ties of affection more than they, of which here is a specimen.

"I remember once, when cruising off Terceira in the *Endymion*, that a man fell overboard, and was drowned. After the usual confusion, and long search in vain, the boats were hoisted up, and the hands called to make sail. I was officer of the forecabin, and on looking about to see if all the men were at their stations, missed one of the foretop-men. Just at that moment I observed some one curled up, and apparently hiding himself under the bow of the barge, between the boat and the booms. 'Hillo!' I said, 'who are you? What are you doing here, you skulker? Why are you not at your station?'

"'I am not skulking, sir,' said the poor fellow, the furrows in whose bronzed and weather-beaten cheek were running down with tears. The man we had just lost had been his messmate and friend, he told me, for ten years. I begged his pardon, in full sincerity, for having used such harsh words to him at such a moment, and bid him go below to his birth for the rest of the day.

"'Never mind, sir, never mind,' said the kind-hearted seaman, 'it can't be helped. You meant no harm, sir. I am as well on deck as below. Bill's gone, sir, but I must do my duty.'

"So saying, he drew the sleeve of his jacket twice or thrice across his eyes, and, mustering his grief within his breast, walked to his station as if nothing had happened."

A Sunday on board of one of His Majesty's ships is observed with more decorum and downright religious feeling than people on shore are aware of. The very nature of a sailor's profession is calculated to produce it: "They that go down to the sea in ships, that do business in great waters," says the Psalmist, "these see the works of the Lord, and his wonders in the deep;" and the long weary hours of the night-watch afford them ample time to contemplate them. We must refer our readers to Captain Hall's description of a church at sea, and give them a sample of the interruptions to which a sailor's prayers are liable.

"In returning to the subject of the church, it must be remembered that the circumstances of wind and weather will often interfere with the regularity of our Sunday service. To which it may be added, that the public duty upon which the ship is employed must often modify these observances very much, in spite of all our endeavours. In some parts of an Indian voyage, for instance, it may be safely calculated that no interruption will take place, while there occur other stages of the passage when divine service must of necessity be stopped, to shorten sail or trim the yards. In peace-time, or in harbour, or in

fine weather at sea, no such teasing interference is likely to arise; but in war, and on board a cruising ship, the public service frequently calls a ship's company to exchange smartly their bibles and prayer-books for the sponges and rammers. The collect in which they have petitioned to be defended from the fear of their enemies, and that their time might be passed in rest and quietness, may hardly have passed their lips, before they are eagerly and joyfully scampering up the rigging to shake the reefs out in chase of an enemy, with whom, in the next hour, they will perhaps be engaged in hot fight!

"I remember once in a frigate, cruising deep in the Bay of Biscay, just as the captain had finished the Litany, and the purser, whose greatest pleasure it was to officiate as clerk, had said Amen, that the man at the main-royal-mast head screamed out, 'A strange sail, broad on the lee bow!'

"The first effect of this announcement was to make the commander turn round involuntarily to the man at the wheel, and exclaim, 'Put the helm up!' He then closed the book with a degree of energy, of which he was made somewhat ashamed when the sound was echoed by that of the rapidly closing volumes all around him.

"My lads," said he quickly, but not without solemnity, 'our duty to our king is our duty to God; and if, as I hope, this sail turn out to be the ship we have been so long looking after, you will not give a worse account of her to the country, I am sure, for having applied in good earnest for assistance from aloft.' After which, suddenly changing his tone and manner, he sung out loudly and clearly, 'Hands, make sail! Let go the bow-lines! Round in the weather braces! Mast-head there, let me know when the strange sail is right ahead!'

"Then leaping on the hammocks, and resting his glass against the after-swifter of the main rigging, he swept the horizon impatiently for the stranger. Meanwhile, the rattling of the chairs, capstan-bars, match-tubs, and shot-boxes, gave token of the rapid demolition of our nautical church. The studding-sail booms shot out like spears from the yard-arms, and the sails which these spars were to expand hung dangling and flapping in the air, as if the canvass had been alive, and joined in the eagerness of the chase, while the gay ship herself, trembling fore and aft under these fresh and spirit-stirring impulses, dashed away at the rate of ten and a half.

"Such are the incidents which happen on board single frigates, those rattling, joyous, fly-along, Salee-rover sort of cruisers, which range at large over the wide ocean, scour every coast, and keep the war famously alive. A much more stately ceremonial is observed on board fleets, whether at sea, blockading a port, or lying in harbour. The ships of the different divisions, or squadrons, wait till the admiral hoists at his mizen peak the signal indicating that divine service has commenced. The bell is then tolled in each of the other ships, the usual pendant is displayed, and the first article of war (already quoted) is complied with, not only to the letter, but often, we may hope and trust, fully up to the spirit. At all events, I have heard many clergymen declare, that they never beheld any congregation in which more attention and decorum prevailed than in our ship churches."

Such are the interruptions incidental to a sailor's devotions—more frequent in time of war, when every sail that appears, whether she prove to be friend or foe, produces temporary, but immediate employment.

After treating on naval ratings and sea pay, Captain Hall gives some amusing accounts of "sailor's pets," which we regret that our limits will not allow us to do justice to by extracting. The account

of the currents off the Cape of Good Hope, and a sample of the progress of an island chief in acquiring our language, are interesting and instructive. But we come now to a subject worthy, indeed, of forming the theme of a more classical personage than the captain of a man of war; namely, "the duty of cheerfulness." Captain Hall is not insensible to the dangers incurred by one who, ill versed in theological study, attempts to compose a sermon; and yet he straightway grapples with them, and that, too, very successfully. He, of course, addresses himself to his crew, but to no class of life is the subject inapplicable; and he could not have selected one better adapted to that for which it was intended. We have said he acquitted himself well, and we will quote the following concluding paragraphs.

"With regard to the advantages of cheerfulness in the performance of professional duties, a great deal might be said. It is sufficiently familiar to every one's experience, indeed, that the man who goes through his labour with a light heart, not only bears it better, but performs it better, than one whose feelings are morose, and his disposition churlish and discontented. In no walk of life, perhaps, is this truth more apparent than on board ship, where we are jammed so close together, and where, in spite of all our discipline and distinctions, we are compelled to act in companionship, in all weathers and under all circumstances. We are boarded and lodged pretty much alike; we travel together, and fight together; we enjoy in company the luxuries as well as endure the hardships of remote and varied climates; we sink or swim under one course of fortune, and are alike exposed to sickness and other disasters; why, then, should we not be, in truth and sincerity, one family, linked together by a common set of interests, duties, and hopes? As the advantages of our situation afloat certainly far overbalance the inconveniences, it would surely be a great step in nautical morals, if we could teach our young men, and, indeed, teach ourselves, old as well as young, to consider uniform cheerfulness so much in the light of a positive duty, that its sunshiny influence should never leave our minds, but permanently regulate and temper the whole of our mutual intercourse."

"The most sacred and solemn engagements of any man's life, his most disagreeable and arduous duties, as well as those which are trivial or monotonous, may all be performed in the spirit recommended, not only without interruption, but with great advantage to the public service. In nothing does the truth of this appear more forcibly than in the discipline of a ship of war, where orders and counter-orders, in endless complication, must frequently be given; where the temper of the officer and the patience of his people are so severely tried; where the sources of mortification and disappointment are so numerous; where fatigue, hunger, and disease so often combine to disturb both the animal and the intellectual economy of our nature; where all our habits are broken up, and our own private wishes frequently obliterated in those of the public service; where punishments must sometimes be inflicted; where favours may either be granted or refused; where resolutions require to be formed on the instant, and carried into execution with promptitude and certainty of purpose, otherwise all may be lost; and where, finally, on occasions when vigorous action is required at our hands, unless there be a firm and hearty cohesion of all the different powers which the ship includes, the whole scheme of our boasted discipline may fall to pieces, and the best expectations of our country be cruelly thwarted. At such times, the transcendent advantages of cheerfulness are made apparent. With what renewed vigour have not all of us been made to spring to our stations,

and labour with unflinching spirits, when called upon by the animated voice of an officer, whom habit had taught us to know was always 'of good cheer' himself, and always considerate of others. Every one, likewise, must have remarked the stimulating effects of these qualities, even on those indolent growlers and skulkers, who, in all ships, hang about the decks like drones. Constant good spirits, indeed, in an officer, are far more effectual in seasons of protracted hard work than splicing the mainbrace every half hour. His very look and tone impart fresh vigour to the well-disposed, give new energy to the languid and wearied, and hold out intelligible and manly motives, even to the discontented.

"In conclusion, it may be useful to remember, that 'there are, in fact, but two circumstances which can reasonably deprive us of this cheerfulness of heart. The first of these is a sense of guilt. A man who lives in a state of vice and impenitence can have no title to that evenness and tranquillity of mind which is the health of the soul, and the natural effect of virtue and innocence.*' The other circumstance is irreligion, or that desolate and dreary state in which the soul, capable of such great things, when duly associated with its Maker and its Saviour, is left to drift about on the wide and shoreless ocean of infidelity, not only without the breath of hope to fill its sails, but without needle or pole-star to point out its course, and give useful direction to its own feeble, unassisted, wavering impulses.

"Let us then avoid this miserable condition, by being true not only to our earthly, but to our heavenly King; a double allegiance in name, but single in purpose. For we may rest assured, that a well-understood religion stands in the way of nothing that is right, never fails to give warning when dangers are ahead, cheers and animates every enterprise, while most truly it is written, *her ways are ways of pleasantness, and all her paths are peace.*"

We shall reserve the remainder of these interesting volumes to be taken up with the first of the series in a future number.

IV.—*Voyage of His Majesty's Ship, Blossom, to Beering's Straits.*

(Concluded from p. 89.)

MR. ELSON, the master of the Blossom, who had charge of the launch, penetrated along the American coast to the north-east, and named the furthest land Point Barrow, which he determined in lat. $71^{\circ} 23' 31''$ N. and long. $156^{\circ} 21' 30''$ W. Finding on signs of Captain Franklin and his party, he returned to the southward, and, after undergoing considerable risk of losing the boat, finally rejoined the Blossom. The shore remaining to be explored between the two points reached by this expedition, and that of Captain Franklin, is only 146 miles.

In our preceding number, we gleaned from Captain Beechey's work an ample picture of the Esquimaux Indians, in these snowy regions; and we shall now conduct our readers to the more enticing plains of California, "diversified by hill and dale, partly

* Addison, Spect. No. 381.

wooded, and partly disposed in pasture lands of the richest kind." Thither the Blossom directed her course, after waiting in Kotzebue Sound in vain for the arrival of Captain Franklin, till the near approach of winter was a signal for her departure. The visit of the Blossom to San Francisco, in Upper California, for the purpose of obtaining provisions, afforded Captain Beechey an opportunity of observing the effects of the system pursued by the Spanish government, for civilizing the Indians by the establishment of missions. According to his account, they appear to have made no great progress since Vancouver's time, but we may be inclined to think, that the fault lies more with the dilatory proceedings of the Spanish government than with those to whom this duty is entrusted. After describing the beauties of the country, and its vast resources, Captain Beechey gives a particular statement of the various missions of San Francisco and Monterey, and the method pursued in converting the Indians. The following is the character of the people to whom this duty is entrusted.

"The worthy and benevolent priests of the mission devote almost the whole of their time to the duties of the establishment, and have a fatherly regard for those placed under them, who are obedient and diligent; and too much praise cannot be bestowed upon them, considering that they have relinquished many of the enjoyments of life, and have embraced a voluntary exile in a distant and barbarous country. The only amusement which my hospitable host of the mission of San José indulged in during my visit to that place, was during meal times, when he amused himself by throwing pancakes to the *muchachos*, a number of little Indian domestics, who stood gaping round the table. For this purpose, he had every day two piles of pancakes made of Indian corn; and as soon as the ólla was removed, he would fix his eyes upon one of the boys, who immediately opened his mouth, and the padre rolling up a cake, would say something ludicrous in allusion to the boy's appetite, or to the size of his mouth, and pitch the cake at him, which the imp would catch between his teeth, and devour with incredible rapidity, in order that he might be ready the sooner for another, as well as to please the padre, whose amusement consisted in a great measure in witnessing the sudden disappearance of the cake. In this manner the piles of cakes were gradually distributed among the boys, amidst much laughter and occasional squabbling.

"Nothing could exceed the kindness and consideration of these excellent men to their guests and to travellers, and they were seldom more pleased than when any one paid their mission a visit: we always fared well there, and even on fast-days were provided with fish dressed in various ways, and preserves made with the fruit of the country. We had, however, occasionally some difficulty in maintaining our good temper, in consequence of the unpleasant remarks which the difference of our religion brought from the padres, who were very bigoted men, and invariably introduced this subject. At other times they were very conversible, and some of them were ingenious and clever men; but they had been so long excluded from the civilized world, that their ideas and their politics, like the maps pinned against the walls, bore date of 1772, as near as I could read it for fly-spots. Their geographical knowledge was equally backward, as my host at San José had never heard of the discoveries of Captain Cook; and because Otaheite was not placed upon his chart, he would scarcely credit its existence."

And yet these benevolent and kind-hearted men can allow such scenes as the following to be exhibited under their authority:—

“ On the 12th of December a salute was fired from the battery ; high mass was said in all the missions, and a grand entertainment, to which all the officers were invited, was given at the presidio, in honour of Santa Senora Guadalupe. There was also to have been a fight between a bear and a bull, but for some reason not known to us—probably the trouble it required to bring the animal so far, as the bears do not come within many miles of the presidio—it did not take place ; and we were all greatly disappointed, as we had offered to reward the soldiers for their trouble, and had heard so much of these exhibitions from every body, that our curiosity had been highly excited. This is a favourite amusement with the Californians, but it is of rare occurrence, as there is much trouble in getting a bear alive to the scene of combat, and there is also some risk and expense attending it. We were informed, that when a fight is determined upon, three or four horsemen are despatched with lassos to the woods where the bears resort, and that when they come to an advantageous spot, they kill a horse or bullock as a bait, and hide themselves in the wood. Sometimes they have to wait a whole day or more before any of these animals appear, but when they come to partake of the food, the men seize a favourable opportunity, and rush upon them at different points with their lassos, and entangle one of them until he is thrown upon the ground, when they manage to suspend him between the horsemen, while a third person dismounts and ties his feet together ; he is then extended upon a hide, and dragged home ; during which time it is necessary, they say, to keep him constantly wet, to allay his thirst and rage, which amounts almost to madness—and woe to him who should be near, if he were to break away from his fastenings ! The entangling of the animal in the first instance appears to be by no means devoid of risk, as, in case of the failure of a lasso, it is only by speed that a rider can save himself and his horse. The bear being caught, two or three men are despatched for a wild bull, which they lasso in an equally dexterous manner, catching him either by the horns, or by whichever leg they please, in order to trip him up, and retain him between them.

“ It is necessary to begin the fight as soon as the animals are brought in, as the bear cannot be tempted to eat, and is continually exhausting himself in struggling for his liberty. The two animals are then tied together by a long rope, and the battle begins, sometimes to the disadvantage of the bear, who is half dead with exhaustion, but in the end almost always proves fatal to the bull. It is remarkable, that all the bears endeavour to seize the bull by the tongue, for which purpose they spring upon his head or neck, and first grapple with his nose, until the pain compels the bull to roar, when his adversary instantly seizes his tongue, pierces it with his sharp talons, and is sure of victory. These battles were the everlasting topic of conversation with the Californians, who indeed have very little else to talk about, and they all agreed as to the manner of the fatal termination of the spectacle.”

“ Cada pais tiene sus costumbres,” say the Spaniards; and if the people of Madrid have their bull-fights, the Californians surpass them by inflicting torment and death on two animals at once.

Captain Beechey says,

“ By Christmas-day we had all remained sufficiently long in the harbour to contemplate our departure without regret : the eye had become familiar to the picturesque scenery of the bay, the pleasure of the chase had lost its fasci-

nation, and the roads to the mission and presidio were grown tedious and insipid. There was no society to enliven the hours, no incidents to vary one day from the other, and, to use the expression of Donna Gonzales, California appeared to be as much out of the world as Kamschatka."

The Blossom made the best of her way to the Sandwich Islands, for those supplies of provisions which could not be obtained either at San Francisco or Monterey. In February, 1827, the Blossom reached her former anchorage at Honoruru, where one or two important events had taken place relating to the government. The natives of these islands make tolerable seamen, and, from being so accustomed to the water, they are as much at home on that element as on land, and having frequently encountered gales of wind in their open canoes, they have no apprehension of them on board a strongly-built ship. They make voyages to the coast of California, under the direction of foreigners. If they make good sailors, it seems they are equally inclined to turn their hand to the military art, as we find by the following amusing remarks :

"The Sandwich Islanders will apparently make as good soldiers as they do sailors, and are so proud of the honour of being embodied in the corps of the state, that they cannot suffer a greater disgrace than to have the regimentals taken from them, and to be turned out of the ranks. They were repeatedly drilled by our serjeant of marines, and though under the disadvantage of not understanding the language in which the word of command was given, they improved quite as much as men in general would have done, who had been in the habit of seeing the exercise performed. The inhabitants appear disposed to learn any thing that does not require labour, and soldiering soon became so completely a mania, that the king had the choice of his subjects; and little boys were seen in all parts of the town tossing up a sugar-cane, with a 'shoulder ump!' and some of the troop, even after being dismissed, would rehearse the lesson of the day by themselves. The islanders have a good idea of acting in concert, derived from their early exercise of the *pulatu*, so interestingly described by Vancouver, in which they were accustomed to form solid squares; and when engaged, presented a formidable phalanx, which it was not easy to force."

Captain Beechey speaks in favourable terms of the climate of the Sandwich Islands, and prefers it to that of Otaheite, in nearly the same latitude, south of the equator. The mean temperature of the year 1821 was 75°, the maximum 88°, and the minimum 59°; while the daily range was on an average about 13°.

Leaving these islands on the 4th of March, the Blossom directed her course towards the Ladrone Islands, on her way to Canton. In the course of this passage, Captain Beechey made several observations, which had for their object the improvement of the charts, and which we shall hereafter notice under the head of Hydrography. The approach of the ship towards the principal port of the celestial empire, is thus told :

"Before daylight on the 10th, while we were crossing the channel to the westward of Formosa, going at the rate of ten miles an hour, we found ourselves surrounded by Chinese fishing boats, and narrowly escaped running over

several of them, as it was very dark, and they were so thick, that in trying to escape one, we endangered another, and were obliged to lie-to until daylight. These boats are large vessels, and would endanger a small merchant ship, were she to run foul of any of them. We were informed, that they were upon their usual fishing ground, and vessels therefore in approaching the spot should be cautious how they proceed, as these boats carry only a large paper lantern, which cannot be seen far off, and I believe they only show this when they perceive a strange vessel. They were fishing in pairs, one vessel being attached by cables to each end of an enormous net, which kept them both broadside to the sea; they were constantly covered with the spray, and being light, were washed about in so violent a manner, that it scarcely appeared possible for people to stand upon their decks. Still the crews of several which we passed, consisted principally of females, who did not appear to be in the least inconvenienced by their situation."

The object of this visit was merely to procure a few stores, not to be obtained elsewhere, which being done, Captain Beechey hastened away, to employ his time to advantage, in the examination of seas and coasts that were ill known, before it was necessary for him to return to Beering's Strait. In consequence of the water obtained at Macao turning out bad, the island of Loochoo was selected as a proper place to complete it, and the ship was shortly at anchor in the harbour of Napakiang. The shrewd character of the natives of Loochoo, soon showed itself in the extraordinary conduct of those who visited the Blossom.

"Before our sails were furled," says Captain Beechey, "the ship was surrounded by boats of various descriptions, and the tops of the houses on shore, the walls, and the forts at the entrance of the harbour, were crowded with spectators watching our operations. Several persons came on board, and with a respectful salutation begged permission to be allowed to look over the ship; but they were interrupted by the approach of a boat with an officer, apparently of rank, whom they wished to avoid. His person underwent a severe scrutiny through our telescopes, long before he came on board, and we could distinctly see that he had not the *hatchee-matchee*, or low cylindrical cap worn by persons of rank in Loochoo, in the same manner as the cap and buttons are by the mandarins of China, yet he was evidently a man of consequence, from the respect paid him by the natives in making room for his approach. When he came alongside he was invited upon deck, but for some time he stood minutely examining the outside of the ship, counting the number of port-holes, and apparently forming an estimate of her length and height. At last he ascended the side, and made a low salutation on the quarter-deck, bowing his head in a respectful manner, and clasping his hands to his breast, as before described. Finding we could not understand his language, he waved his hand to seaward, in intimation that we should not be allowed to remain in the port. He then looked down upon the gun-deck, and pursued his examination of the inside of the ship, with the same rigour that he had bestowed upon the exterior, making notes of what he saw. When he was satisfied, he expressed his thanks for our civility, and returned to the shore.

"Soon after his departure, several well-dressed persons, with boys holding parasols over them, were observed coming off to us: they were seated in Chinese style, upon mats spread in the bottom of the boat, over neat *rajan* platforms, and were propelled by several persons working at a large oar as a

skull, keeping time to a song, of which the chorus was *ya ha mashewdy*, or words very similar.

"They were elegantly dressed in gowns made of grass cloth, of which the texture was fine and open, and being a little stiff, formed a most agreeable attire in a country which was naturally warm. To prevent this robe being incommodious while walking, it was bound at the waist with a girdle, linen or silk, according to the rank of the wearer. They had sandals made of straw, and one of them, whose name was An-yah, had linen stockings. None of them had any covering to the head, but wore their hair turned back from all parts, and secured in a knot upon the crown, with two silver pins, *kamesashe* and *oomesashe*, the former of which had an ornamental head resembling a flower with six petals; the other was very similar to a small marrow-spoon. Each person had a square silken tobacco-pouch embroidered with gold and silver, and a short pipe, of which the bowl and mouth-piece were also silver, and one, who was secretary to An-yah, carried a massy silver case of writing materials.

"They saluted us very respectfully, first in the manner of their own country, and then of ours, and An-yah, by means of a vocabulary which he brought in his pocket, made several inquiries, which occasioned the following dialogue. 'What for come Doo Choo?*' 'To get some water, refit the ship, and recover the sick.' 'How many mans?' 'A hundred.' 'Plenty mans! You got hundred ten mans?' 'No, a hundred.' 'Plenty guns?' 'Yes.' 'How many?' 'Twenty-six.' 'Plenty mans, plenty guns! What things ship got?' 'Nothing, ping-chuen.†' 'No got nothing?' 'No, nothing.' 'Plenty mans, plenty guns, no got nothing!' and turning to his secretary, he entered into a conversation with him, in which it appeared almost evident that he did not wholly credit our statement. It was, however, taken down in writing by the secretary."

Permission was obtained for the officers of the ship to land, the greatest care being taken at the same time that they should not penetrate far from the shore, which was sufficient for making astronomical observations. A party of officers, however, were allowed to go further than this, and placed under the charge of a guide. The distress of this person, lest the party should transgress beyond the prescribed limits of their walk, is thus amusingly told:—

"After visiting the grave of one of the crew of the *Alceste*, who was buried in this island, we were satisfied with this tour of the tombs, and turned off inland, very much to the discomfiture of our guide, and in spite of a great many remonstrances. He was a silent companion until we came to a path that went back to the beach, and there, politely stepping forward, said it was the one that would take us where we wished to go, and, touching our elbow, he would have turned us into it, had he not thought it rude; but we pursued our original path, followed by a crowd of persons, who seemed to enjoy the discomfiture of our companion, and laughed heartily as we came to every track that crossed ours, each of which our officious and polite conductor would have persuaded us to take, as being far more agreeable than the other, and as leading to our destination. The mirth of the crowd pretty well satisfied us, there was no great danger in advancing, and we went on further than we should

* This word is pronounced Doo-Choo by the natives, but as it is known in England as Loo Choo, I shall preserve that orthography.

† A man-of-war in China is called ping-chuen, or soldier-ship.

otherwise have done; but in a little time they began to drop off, and we were at last left alone with the guide, who really became alarmed. We had reached the foot of the hill on which the capital is situated, and were ascending to have a nearer view of the houses, when he threw himself on his knees in evident alarm, bowed his head to the dust, and, embracing our knees, implored us to desist, assuring us, that the manderin would take his head off, if we did not. Some of the officers, who went in another direction, were told by their guide, that he would get bamboosed if they did not turn back, which is more probable than that the heavy penalty apprehended by our companion, should be attached to so light a crime."

After giving a sketch of his own proceedings at Loo Choo, Captain Beechey presents us with an elaborate historical account of the island, and we shall transfer to our pages the conclusions which he deduces therefrom.

"Thus Loo Choo, like almost every other nation, has been disturbed by civil wars, and the state has been endangered by foreign invasion: her towns have been plundered, her palaces consumed, and her citizens carried into captivity. Situated between the empires of China and Japan, she has been mixed up with their quarrels, and made subservient to the interests of both: at one time suffering all the miseries of invasion, and at another acting as a mediator. Allied by preference to China, and by fear and necessity, from her proximity, to Japan, she is obliged, to avoid jealousy, to pay tribute to both, though that to the latter country is said to be furnished by the merchants, who are most interested in the trade to that empire. Their conduct to strangers who have touched at their ports, has ever been uniformly polite and hospitable; but they would rather be exempt from such friendly visits: and though extremely desirous of obtaining European manufactures, particularly cloth, hosiery, and cutlery, they would oppose any open attempt to introduce them. The most likely means of establishing a communication with them, would be through Chinese merchants at Canton, who might be persuaded to send goods there in their own names, and under the charge of their own countrymen."

The time was now approaching when the Blossom was required to be again in Beering's Straits, to look for Captain Franklin, and, leaving Loo Choo on the 25th of May, she made the best of her way to the northward. A group of islands, which from their position were considered to be the *Islas del Arzobispo* of the Spaniards, detained the Blossom on her way, after which she reached Awatska Bay on the 3d of July. The interval between this and the 18th of the same month, was employed in surveying the bay, and in fitting the ship for her cruise to the American coast, where she arrived in Kotzebue Sound on the 5th of August. From here the launch was despatched, with orders to penetrate along the coast as before, while the ship followed as the wind permitted her. The highest latitude attained in this second visit was $70^{\circ} 47' N.$, and finding that the ice prevented him from getting further, Captain Beechey returned to Kotzebue Sound, where he employed himself in examining the coast in its vicinity. In this service the Blossom was nearly lost on a shoal, and the launch, on returning from the northward, was totally wrecked, and three of her crew

drowned. On the 6th of October, after waiting in vain for Captain Franklin's party, the Blossom left Kotzebue Sound, and commenced her return to the southward. After touching at California, the coast of Chili, and Rio Janeiro, she reached England in October following.

Looking on this expedition in the various duties which were performed, it ranks among the most interesting that have departed from our shores. The principal object was that of co-operating with the polar expeditions, and the time which was not so employed was devoted to the improvement of geography in every part of the world visited by the Blossom. And thus although unsuccessful in the main point, that of meeting with the polar voyagers, the results of the expedition were most beneficial to geography and navigation. Nearly every place was surveyed, that has been visited by Captain Beechey; plans of fourteen harbours were constructed, two of which were entirely new; plans of more than forty islands were made, of which six are discoveries; and a survey of at least six hundred miles of coast was performed, nearly a hundred of which had never before been known. Such are the results of this expedition, one which has been no less fruitful in observations connected with the various branches of natural history, than it has been advantageous to Hydrography.

Captain Beechey's appointment to the Blossom was dated 7th January, 1825, and he paid her off on the 12th of October, 1828, at Woolwich.

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE, AND ART.

CHARTS, PLANS, AND MAPS.

COCKBURN SOUND, and the Entrance of SWAN RIVER. By John Septimus Roe, Surveyor-General. Price 2s. 6d., with additions, 1831. (No. 2148.) *Size, Half Double Elephant Sheet.* Admiralty.

This is the only good survey yet made of this part of the coast of Australia. It contains directions for passing through the intricate, but only entrance for large ships, into Cockburn Sound, between Garden and Carnac Islands; and this entrance is likewise given on an extended scale. The dangerous parts are also well sounded, and the buoys being inserted, a ship possessing it might find her way in with care.

THE RIVER TAMAR, VAN DIEMEN'S LAND. Surveyed by Mr. John Welch. 1828. Price 1s. 6d. (No. 2199.) *Size, Half Double Elephant Sheet.* Admiralty.

Mr. Welch's survey extends from the entrance of this river, called Port Dalrymple, as far as Launceston, and shews the navigation of the river very clearly, and is accompanied by sailing directions.

Passages through the BARRIER REEFS, AUSTRALIA, EASTERN COAST. Additions to 1832. By J. Horsburgh, Hydrographer to the Hon. E. I. Company.

We have alluded to this useful little chart, in our notice of the Joseph Winter's track; in addition to which, we may observe, that it contains elaborate directions for passing by Stead's Passage, through the great Barrier reefs. To penetrate the Barrier reefs was formerly an undertaking attended with much danger, but the proper way of doing so is now ascertained, and with the chart before us will be a matter of no difficulty.

The Coast from BUSHIRE to BASADORE in the PERSIAN GULF. Surveyed by Lieuts. G. B. Brucks and S. B. Haines, Hon. Co.'s Marine. 1828. *Size, Double Elephant Sheet.* E. I. Company.

This chart contains the northern shore of the Persian Gulf, between the west end of the Island of Kishm and Bushire. The coasts, and the approaches to the islands, are well examined by soundings; the latter are particularly important, as the usual way of avoiding the effects of the severe gales which sometimes visit this gulf, attended generally by a drain of current, is to run under the lee of an island till the gale be past.

MAPS published by the Society for the Diffusion of Useful Knowledge.

The twenty-first number of this valuable series, (the last published,) contains a feature which is the first of the kind that we have seen in modern publications of this nature. The number before us contains the first sheet of Ancient and Modern Italy; and in the former, the present line of the coast in the Adriatic between Ravenna and Trieste is also inserted, displaying a remarkable instance of the changes which geologists assert are continually taking place in our globe. The present coast line, which, doubtless, has been formed by the alluvial deposit of the Po, and the numerous rivers descending from the Alps, has encroached on the gulf, in some parts as much as seventeen miles!

ORDNANCE SURVEY OF GREAT BRITAIN. Sheet, (No. 55.) Leominster. Under the direction of Lieut.-Col. Colby, R. E.

This sheet is divided into four sections, containing parts of Worcester-shire, Herefordshire, and Shropshire. It vies with the late productions of the Tower, in general neatness and elegance of execution.

AN ATLAS of MODERN GEOGRAPHY, compiled and drawn from the latest observations. By James Wyld, Geographer to His Majesty. London, 1832.

An elementary Atlas of this description was still wanted, and this of Mr. Wyld's will not only serve its intended purpose, but also as a reference for those who may even be advanced in geography. The size of it is that of octavo, and it has twenty-four maps, containing the names of important places, which should be in the memory of every student of geography. Cheapness is always a recommendation; and convenience of size, and clearness of detail, are additional claims which are likely to render this a popular little work.

BOOKS, &c.

Invention of an effective and unfailing Method for forming an Instantaneous Communication with the Shore, in Shipwreck, and illuminating the scene in the dark tempestuous night. By John Murray, F.S.A., &c. London, Whittaker. 1831.

We should have liked any other title than that which Mr. Murray has thought fit to adopt; for his method may fail, as all human attempts will do sometimes, but any work, having for its object that of preventing the sacrifice of human life, claims our utmost attention. Captain Manby has long since reaped the reward of his valuable invention, and Mr. Murray has endeavoured to improve on it. Instead of throwing a shell over the distressed vessel, he fortifies an arrow with a barbed point, to adhere to any part of her, against which it may happen to strike; besides this, he illuminates his arrow in a very ingenious manner. An assertion which Mr. Murray has made in his work, respecting the number of lives that were lost on the coast of Cornwall, in December 1830, has met with some contradiction by a writer, who signs himself *Veritas*, in the United Service Journal for April. But as he admits that, besides some which he enumerates, *several other vessels* were wrecked on the coast at the same time, the crews of which were all lost; these, perhaps, may be the twenty-eight to which Mr. Murray alludes. In future, we hope that our tables of *wrecks* will keep these matters in a clear point of view. However, we look to the principle of Mr. Murray's laudable exertions, and, regardless of these attacks, heartily wish him success in his philanthropic experiments. While on the subject, we will suggest to him that his *fukes* be laid across the line of fire, so that the rope or cord, as it is carried out, will be always at right angles to the moving power. This will prevent the sudden jerks and resistance which the arrow must receive in its flight, however little they may be, as each bend is expended.

Description of a New Method of constructing BEDS and COINS for NAVAL GUNS. By Henry Chatfield of Plymouth Dock-yard, Member of the School of Naval Architecture. London, Mills. 1832.

We look on every attempt at improvement in our sea-ordnance with pleasure, and particularly so, when we find them to be the productions of genius fostered in our own institutions for the advancement of naval architecture. Our experience has long since proved to us that the rude bed and coin of a ship's gun is susceptible of much improvement, and we are glad to see the subject so ably handled in this little work. Mr. Chatfield's object appears to be that of reducing the old rule of thumb method of elevating and depressing ships' guns by bed and coin, to something like mathematical precision. Beds and coins, on his principle, are now undergoing trial on board several of his Majesty's ships, and we have little doubt of their being found to answer. To those who take an interest in these matters, the trouble of perusing Mr. Chatfield's little *brochure* will be amply repaid.

The REVOLVING RUDDER, invented by A. H. Holdsworth, Esq.,
M.P. for Dartmouth. London, J. F. Dove, Piccadilly.

We would gladly give our nautical readers a more ample account of Mr. Holdsworth's ingenious invention than our limited space enables us to do, but we will try to put them in possession of it as laconically as possible. Instead of being suspended in the usual manner, Mr. Holdsworth's rudder is made to rest upon a continuation of the keel projecting its own breadth abaft the sternpost, by which means it acts entirely apart from it, leaving a space between it and the sternpost sufficient for itself. It is made to revolve freely in its step, so that in addition to the motion of the common rudder, when the vessel has stern-way, the pressure of the water turns this rudder fairly round into the space which was thus left vacant, and the rudder is secured from injury by the strain which would otherwise be produced. The improvement will be evident to professional men, and is particularly applicable to steam-boats.

CHRONOMETERS.

Messrs. Arnold and Dent have just completed another of those beautiful specimens of art, in the shape of a pocket chronometer, shewing at once both mean and sidereal time. This is the fourth of these machines that has been made. They are intended for the use of observatories, and are most valuable to astronomers on account of the facility they give them of knowing when to be ready for stars passing the meridian, without having recourse to any calculation; while, at the same time, they may be applied to the purposes of obtaining difference of longitude. They have been used at the Royal Observatory at Greenwich, and are now employed in observatories abroad.

DIVING APPARATUS.

By a letter we have received from Mr. Murray, it appears that this gentleman claims the credit of having invented the diving apparatus lately exhibited both at Sheerness and in the river Thames. Doubtless much ingenuity is displayed by the real inventor, be he who he may, but we are inclined to think it will never become of extensive use beyond a small depth. The great weight which the descending person has to bear to keep him down, which must be increased according to the depth to which he has to descend, and the difficulty of seeing when at the bottom of the water, owing to the mud he displaces by moving about, allowing it to bear his weight, which must not always be expected, we suspect are sterling objections. In shallow water, and in particular places, it may, no doubt, be turned to account.

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

We beg to call the attention of our naval readers to a letter, signed *Nauticus*, under the head of Hydrography. Such discrepancies are yet too common, but we hope by their endeavours to see them removed. A beautiful wind and tide register was exhibited before the Royal Society last season by Mr. Palmer, the engineer to the St. Catherine Dock Company, apparently in a finished state, and we are informed that it is not yet, nor likely to be, in operation!

Mr. Murray has addressed the following to us on the subject of the diving apparatus, lately used at Sheerness, which he claims as his invention, and we consider it but justice to that gentleman to insert it immediately:—

To the Editor of the Nautical Magazine.

SIR,—I confess that I read the extract quoted in the sequel from 'The Essex Independent,' with considerable surprise, because I had prepared, as early as June, 1824, a precisely similar invention. This was first promulgated by me in the 'Hull Advertiser,' of the date referred to, and it remains there, to attest that the plan originated with me; fortunately, I had, altogether independent of this, copied the statement in question into 'my descriptive account of a Shower Bath,' &c., as connected with the explanation of an apparatus for restoring suspended animation. This little work was published (2nd edition) in 1828.

"As long as the 'ingenious Inventor' confined himself to the amusement of the 'natives,' by walking at the bottom of the Thames, near London Bridge, I was indifferent to the exercise of the feat; but now, that it has assumed a different aspect, and that government seems inclined to take at second hand what I must assume belonged to me, as

the source whence the principle originated, I cannot be deemed obtrusive in preferring that claim, or setting the public right on the principle that it involves.

"I had prepared my plan as available for the immediate recovery of the bodies of the drowned, a case of this description having occurred at Beverley, in June, 1824, wherein the means of resuscitation were rendered altogether inert from the unfortunate lapse of time that occurred before the body could be recovered. As a set-off to the quotation from the Essex newspaper, I beg to quote from my communication to the 'Hull Advertiser,' a simple paragraph, leaving it to speak for itself.

"For a person to walk into the water with perfect safety, and to a considerable depth, it will be only necessary that such individual be supplied with a hood, sustained in its required and necessary form by hoops or rings, these being covered with oiled silk, &c.; the apparatus must be supplied with a lens, to discover the object of search. It will be further necessary that two pipes communicate with this adjustment, one with the top for the escape of the heated respired air, and another from the lower region, to minister pure and respirable air, with a condenser attached, &c.

"This extract will, I apprehend, be found to contain the elements of the invention set forth in the following quotation:—

"The Board of Admiralty lately sent down to Sheerness the invention of a very ingenious apparatus, for the purpose of making trial of it, under the inspection of Sir James Beresford. The diver descended into the water by a ladder, where he can remain for any length of time, and can walk about the ocean's oozy bed with perfect safety, and even without feeling any suffocating sensation. The apparatus is extremely simple in its construction. It consists of a metal cap, or covering for

' the head, with two tubes or hoses af-
' fixed to it; these lead to an air-pump,
' which is kept constantly at work dur-
' ing the descent. Two glasses are fitted
' in the cap, by which he is enabled to
' see any thing, and to pick up the
' smallest article. His dress, including
' the glasses, is a preparation of Indian
' rubber, so that he is not exposed to
' wet or cold, for on removing the dress
' and cap, the diver appears perfectly dry,
' and comparatively warm. On Friday
' week, Flag-Lieut. Washington, of His
' Majesty's Ship Ocean, descended twice
' into the harbour, and brought up with
' him some mussels and stones; and thus
' proved in the most satisfactory manner
' the practicability and utility of this in-
' genious invention. We understand
' that it is the intention of Government
' to grant the man a patent for his inven-
' tion, and to have an apparatus kept in
' each of His Majesty's dock-yards.
' There can be no doubt that it will
' supersede the use of the diving-bells,
' which, being cumbrous and unwieldy,
' require a great exertion of strength to
' work them.'

" It is almost unnecessary to add,
that what is called an *air-pump*, is a
condensing apparatus, similar to that
now employed as an appendage to the
diving-bell, for the supply of fresh air,
though in this case it be of more limited
dimensions.

" I have the honour to be, sir,

" Your very humble servant,

" J. MURRAY.

" 14th April, 1832."

The following is a brief statement of
the Ottoman fleet:—

The whole Ottoman empire may be
considered as concentrated at Con-
stantinople, for every thing which re-
lates to the army, the navy, or the civil
government, is transacted there. The
Sultan is fearful of entrusting the exe-
cution of his plans to those under him,
knowing well that he can depend only
on what is carried on under his imme-
diate inspection. Thus the arsenals,
the dock-yards, and every thing relat-
ing to the navy, is to be found in the
port of Constantinople, which is, per-
haps, the only one in the world that
can contain every thing necessary for

the equipment of a fleet. The follow-
ing vessels composed the Turkish navy
in 1830:

Ships of the line, the Mahomet,
120 guns; the Selim, 80; and six
others of 74 guns each.—Frigates, ten
mounting from 36 to 60 guns.—Cor-
vettes, thirteen mounting from 18 to
30 guns.—One brig of 12 guns, and
two steam vessels; making a total of
34 vessels.—The guns of these vessels
are all of bronze, for the art of casting
iron is not sufficiently known by the
Turks, to enable them to construct
iron guns that can be used without
danger.

Some of these ships are so old, that
they are scarcely sea-worthy; but the
Mahmoud, which is not entirely
finished, is remarkable for her gigantic
dimensions, as well as the elegance of
her build, and is allowed to be the
finest ship of war in the world. Her
length is 234 feet, she mounts 120
guns, and many carronades of heavy ca-
libre. On the upper deck are mounted
32, on the middle deck 42, and on the
lower deck 68 pounders. She is said
to be upwards of three thousand tons.
The work in her is very rough, and,
although strong, displays a great waste
of timber. This is all brought from
the Black Sea, and is said to be dura-
ble and good. The iron-work of the
Mahmoud is also very rough. The
immense masts of this ship are held
together by slight iron hoops and
woudings, half an inch in thickness,
scarcely strong enough to resist the
least strain. Most of the other ships
are hogged, a fault which probably
arises from their not being properly
supported when they are launched, the
great depth of the water not allowing
the ways to be sufficiently carried out.

In entering the harbour of Constan-
tinople, the current will be met run-
ning out at the rate of four knots per
hour, making it impossible for a ship
to beat into it. After passing the
Seraglio point, and crossing over to the
European shore, the eddy will be met
with about one-third over, running
from one to two knots per hour. The

dock-yard is situated in the interior of the harbour, and the ground is perfectly adapted by nature to such a purpose. The shore is so steep, that a line-of-battle ship may lie alongside of it. It contains two very good docks, both of which are sufficiently large for a three-decked ship, and in one of them is the *Masoudi*, originally built by a Swede, now undergoing repair.

Until lately there existed a sort of marine corps, called *galliondgis*, from which the fleet was manned; but as it has been abolished, the Sultan has been occupied in forming a new one, organized according to the system he adopted with the troops. A handsome building near the arsenal is appropriated for the use of this corps, which is well clothed and paid; a naval college also has been established. Before the Greek revolution, the effective force of the Turkish navy was composed of Ipsariots, Spezziots, and Hydriots, and whilst the Greeks worked the vessels, the Turks served the guns. Now that the Hellens have thrown off the yoke, the Turks are obliged to perform both duties.

The Turkish ships are, in general, encumbered with men, which only tends to produce confusion in manœuvring, and great loss of lives in action. Mahmoud will, no doubt, shortly improve his navy, as Mahomed Ali has done in Egypt. The viceroy's fleet is now in excellent order, and though it bears the name of the sultan's, must not be confounded with that of Constantinople.

We are enabled to present our readers with the following interesting account of the Steam-vessels, now on the St. Lawrence:—

Names.	Tonnage.	Power.
Royal William	1300 tons	180 horse power.
John Bull, about	1400	237
British America	1100	150
John Molson	600	110
Hercules	560	100
Richelieu, less, but not exactly known	30	—
Chambly	60	—
St. Lawrence	45	—
Lady of the Lake	30	—
St. George (building) to be of	150	—
St. Patrick	100, 3 engines.	—

Besides six horse and two steam ferry-boats at Quebec, and other parts of the river below Montreal, there are four ferry-boats at Montreal, three of which are steamers.

The Royal William commenced running last summer between Quebec and Halifax. She is a magnificent vessel, built on the model of the Duke of Wellington, a steamer running between Aberdeen and London, and is 170 feet extreme length, 44 feet extreme breadth, and 18 feet depth of hold. She has proved herself a safe and excellent sea-boat, and is said to go eleven knots in a calm. She is rigged as a three-masted schooner.

The John Bull is elegantly fitted up, and is of great power. She cost £23,000. The other passage-boats on the St. Lawrence are also well fitted up, and are acknowledged to afford comfort and safety to a greater degree than any boats on this side of the Atlantic. All have their engines on the low-pressure principle.

There are three or four small steamers on Lake St. Louis and the Ottawa river. There is one on the Rideau communication. There are two on Lake St. Francis, from its foot to Cornwall. As for Jonathan, he is a steam-boating animal: he goes to the Sault de St. Marie, to Green Bay, and Chicago; astonishing the wild Indian, and scarcely more wild animals, with his confounded hissing and smoking of all sorts. He is a mere matter-of-fact animal, and destroys the poetry of any place to which he goes. "Wild Ontario's boundless Lake" is no longer either wild or boundless. In vain "Niagara stuns with thundering sound, and Erie spreads her swamps around;" he has jumped from the top of the former, and the latter, he says, makes good bottom lands to a man who can drink gin-sling and whiskey toddy, enough to keep off the ague. Superior and "Huron's distant waters" are no longer distant, for in the steamer's "walk in the water" he can go from Buffalo to them in a day or two. In short, he has annihilated all the poeti-

cal associations, which twenty years ago belonged to these fresh-water seas; so that in a year or two more there will be no more of that romance about them, which belonged to their primitive state, of inutility to civilized man.

The following extract of a letter from Mr. Thomas Elder, master of the Jamaica ship *Montreal*, to his owner, James Greig, Esq. in London, which has been kindly communicated to us, relates to the late gale at Madeira, and affords a remarkable instance of intrepidity and preservation:—

*“ Funchal Roads, Madeira,
3d March, 1832.*

“ I have the disagreeable duty of informing you of my detention at this anchorage, where I arrived on the 21st ult. I had received on board my wines, and intended proceeding on my voyage to Jamaica on the 23d, but for the circumstances which it is now my painful task to detail to you. The weather throughout the morning of the 22d had been very fine, although the glass had fallen so much as to induce His Majesty's Ship *Briton*, and a French brig of war, to put to sea.

“ About midnight I was called, and on reaching the deck I found it blowing excessively hard from N. E. and, though an off-shore wind, a tremendous sea was running. I almost immediately observed a Portuguese brig, (since learnt to be the *Delphia*, Captain Cordoza, bound from Lisbon to China, with a valuable cargo on board,) close to us, and driving athwart our hawse, and before we had time to slip our cable, she was down upon us, carrying away our jib-boom, and, at the same time, losing her own fore-mast by the board, followed by her main-top mast as she fell alongside of us. In this situation the two ships lay beating against each other for some time, when our anchor gave way, and both of us were driving fast on board the *Morning Star*, bound to India. I had no alternative but to let go my best bower anchor, which fortunately brought us both up. It was now one o'clock A. M. when the whole of the crew of the Portuguese brig deserted her, and jumped on board of us. We did all in our power to drive

them back to their own vessel, and induce them to cut their cable, as she would at that moment have gone clear of the *Morning Star*, for to remain in our present situation alongside of each other must have ended in the destruction of both ships. The Portuguese insisted on forcing themselves on board the *Montreal*, declaring their own vessel was sinking. It was now nearly two o'clock A. M. the wind blowing a hurricane, a heavy sea running, and the two ships striking against each other as if they were beating upon rocks. In such a situation not a moment was to be lost, and I offered a reward to the individual who would board the brig, and cut her adrift. As no one volunteered, I got into our fore-chains, with a rope's end to haul me back; but my crew held me, and prevented my getting on board; at the same time, my mate and two of my people gallantly passed into the brig, and cut her cable: while they were in the act of doing so, the vessel took a sheer, which prevented them from returning on board, but she swung clear of us, and, fortunately, having a second anchor ready to let go, my mate brought her up about three cables astern of the *Montreal*.

“ My principal object now was to save my people, and while preparing to do so, by giving the *Montreal* the full length of her cables, the *Delphin* was observed to part, and was apparently driving fast on the rocks, where her destruction must have been inevitable. I immediately jumped into my quarter-boat, and was followed by my second mate and one of my seamen, and pulled towards the brig. With great difficulty we rounded her stern, and got our men out of her, but just as we were putting off the wreck of the brig's fore-mast, as she lurched, fell into the boat, washed out three of our oars, and nearly sunk her. We were now in a fearful condition. To regain the brig was impossible; and just at this moment it commenced blowing with increased violence, and, from the mountainous sea that was running, we expected every moment would be our last. The boat was half full of water, the weather very cold, and I had nothing on me but my shirt, nor were my men much better off.

“ When the day broke, we found ourselves in a boat eighteen feet long, about eight miles off the land, with a dreary

prospect before us, the wind and sea as high as ever, and not a drop of water, nor an ounce of provision. Fortunately, the wind changed a point or two in our favour, and with our single oar we kept the boat up as much as possible to the land. While we were doing our best to near the land, and at the same time to keep the boat from being buried by the waves, a heavy sea struck her under the quarter, and nearly turned her upside down. This was our most critical time, and we gave ourselves up for lost, but, to my astonishment she recovered herself, and, although half filled with water, we got her baled out with our hats and shoes, but we were too much alarmed to try the experiment again of keeping for the land, and now bore away before the wind. We were thus compelled to run out to sea, and considered ourselves inevitably lost. After running for some time in this hopeless condition, with joyful feelings we discovered a vessel directly before us, and we soon made her out to be the Portuguese brig *Delphin*, which we had left the night before. Having her mainsail loose when we quitted her, she must just have cleared the rocks, and, by God's mercy, about eleven o'clock A. M. we got again alongside of her. We found her quite sound, but without any one on board, and being completely exhausted from cold and anxiety, after returning thanks to God, and refreshing ourselves with some coffee, we set to work, and got a jury-mast rigged, and on the following day saw a French brig of war. We made a signal to this vessel, which she immediately answered by coming down to us. Being very anxious to get back to my own ship, I went on board the brig, and directed my mate to endeavour to fetch Funchal Roads; and, in case of failing, to proceed to Jamaica. On the 24th, at noon, we parted company with the *Delphin*, and proceeded to Funchal, which roadstead I did not reach until the 26th, and found to my dismay that my own ship, and every other vessel, had disappeared from the anchorage in the gale of the 22d. On the morning of the 28th, I was greatly relieved by discovering the *Montreal* standing into Madeira. She has suffered severely in her upper works. I am now doing all in my power to refit her, and trust, in a few days, to be in a state to proceed on my voyage to Ja-

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maica. The *Delphin* never having appeared, I conclude from the unfavourable wind, and her disabled state, that she has fallen to leeward, and has proceeded to the West Indies, where I hope to find my mate and people on my arrival.

(Signed) "THOS. ELDER.

"To James Greig, Esq. Jamaica Coffee House."

On the 11th of April, the safety of the Dock-yard, at Sheerness, was endangered by a fire, which broke out at Blue Town. The following extract of a letter with which we have been favoured, contains some particulars relating to it:—

"We had a fierce fire here on Wednesday evening, about half-past nine. It broke out in the house of Mr. South, an upholsterer, standing in the centre of the main street of Blue Town, distant only the breadth of the road from the Dock-yard wall. Providentially it was confined to the house in which it took place, a brick building with a strong partition wall. As it was blowing a strong gale from the east; had it extended itself, the twelve adjoining houses, which were of wood, must have been destroyed. Nothing but the prompt and great exertions of the officers and men from the Flag-ship, the Dock-yard, and the reserve of the 94th Regiment, succeeded in overcoming it."

We rejoice to see by comparison of the Annual Report of the *Naval and Military Library and Museum*, just printed, with that of the preceding year, that the intentions of the original founders of this establishment have been taken up in good earnest. Among the most curious specimens in the Museum, we find Sir Francis Drake's walking stick, a piece of Pizarro's original standard, borne by him when he invaded that country—Ancient urns, Boa constrictors, Cameleons—Historical medals, Minerals, and geological and other specimens innumerable. If in one or two years a collection has been accumulated, which is too extensive to be arranged in the present rooms of the institution, what will not future years produce?

His Majesty, the king of Sweden

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and Norway, has conferred a handsome reward on the crews of two Deal boats, for saving the crew of the Concordia, a Swedish ship, in the month of Jan. 1831. The reward consists of a hand-

some gold medal, bearing on one side the profile of his Majesty, and on the reverse the inscription, "*Illis quorum munere laboris*," in addition to which, they have each received a sum of money.

NAVAL INTELLIGENCE.

(From the Naval Papers.)

THE ROYAL NAVY IN COMMISSION.

*. S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

- ACTÆON**, 26—Hon. F. W. Grey, 28th Mar. at Constantinople.
- ÆTNA**, S. V. 6—Com. E. Belcher, 2d Feb. at Malta.
- AFRICAN**, St. V. 1—Lt. J. Harvey, 10th April, left Portsmouth.
- ALBAN**, St. V.—Lieut. H. Walker, (a) 25th Feb. at Constantinople.
- ALFRED**, 50—Capt. R. Maunsell, 29th March, at Malta.
- ALLIGATOR**, 28—Capt. G. R. Lambert, 17th Jan. at Rio.
- ALGERINE**, 10—Com. Hon. J. F. F. De Roos, 17th Jan. at Rio.
- ARACHNE**, 18—Com. W. G. Agar, 14th Feb. sailed from Port Royal for Montego.
- ARIADNE**, 28—Capt. C. Phillips, 24th Jan. sailed from Bermuda 14th Feb. at Port Royal.
- ARJA**, 84—Capt. P. Richards. Flag of Adml. Parker, 8th April. Tagus.
- ASTREA**, 8—Capt. W. King, Falmouth.
- BADGER**, 10—Com. G. F. Stowe, 11th Dec. at Mauritius.
- BARHAM**, 50—Capt. H. Pigot, 28th March, at Constantinople.
- BRAGLE**, 10—Com. R. Fitz-Roy, 27th Dec. sailed for S. America.
- BELVIDERA**, 42—Capt. Hon. R. S. Dundas, 4th March, Nap. di Romania.
- BLANCHE**, 46—Capt. A. Farquhar, K. H. C. B. 18th Feb. at Port Royal, Jamaica.
- BLOSSOM**, S. V. 16—Com. R. Owen, 3d March, at Port Royal, Jamaica.
- BRISK**, 3—Lieut. E. H. Butterfield, 18th Jan. at Malia.
- BRITANNIA**, 120—Capt. P. Rainier, Spithead.
- BRITON**, 46—Capt. J. D. Markland, C. B. 21st March, at Madelra.
- CALEDONIA**, 120—Capt. J. Hillyar, Plymouth.
- CHALLENGER**, 28—Capt. C. H. Freemantle, 30th Nov. Singapore, from Madras.
- CHAMPION**, 18—Com. F. V. Cotton, 17th Jan. Montego Bay, 14th Feb. left Port Royal, 1st March arrived at Bermuda.
- CHARYBDIS**, 3—Lieut. R. B. Crawford, 18th Jan. Malia.
- CHILDERS**, 18—Com. E. Deans, 8th April, at Lisbon.
- CLIO**, 18—Com. J. J. Onslow, November, Callao.
- COLUMBIA**, St. V. 2—Lieut. R. Ede, coast of England.
- COLUMBINE**, 18—Com. O. Love, 20th Dec. Malia.
- COMET**, 18—Com. A. A. Sandilands, 27th Nov. arrived at Madras from Sydney.
- COMET**, St. V.—Woolwich.
- CONFIANCE**, St. V. 2—Lieut. H. F. Belson, Portsmouth.
- CONFLICT**, 12—Lieut. G. Smithers, Dec. at Ascension.
- CONWAY**, 28—Capt. Eden, Chatham.
- CORDELIA**, 10—Com. C. Hotham, 26th Jan. at Malia.
- CRACKER**, 1—Lieut. J. P. Roepel, Home cruiser.
- CROCODILE**, 28—Capt. J. W. Montagu, 26th Dec. left Madras for Trincomalee.
- CRUIZER**, 18—Com. J. Parker, 18th Dec. at Calcutta.
- CURAÇOA**, 26—Capt. D. Dunn, 7th Jan. sailed for East Indies.
- CURLEW**, 10—Com. H. D. Trotter, 11th Dec. at Mauritius.
- DONEGAL**, 74—Capt. J. Dick, 20th April, arrived at Spithead.
- DRYAD**, 42—Capt. J. Hayes, C. B. 11th Jan. left Ascension, 18th Jan. at Sierra Leone.
- DRUID**, 46—Capt. G. W. Hamilton, C. B. 17th Jan. at Rio.
- DUBLIN**, 50—Capt. Rt. Hon. Lord J. Towns- end, 22d Jan. left Rio for Pacific.
- FAIRY**, S. V. 10—Com. W. Hewett, surveying North Sea.
- FAVOURITE**, 18—Com. J. Harrison, January, Malia.
- FIREBRAND**, St. V.—Lt. T. Baldock, Medit.
- FIREFLY**, 2—Lieut. J. M'Donnell, Bahamas.
- FLAMER**, St. V.—Lieut. R. Bastard, Wool- wich.
- FLY**, 10—Com. P. M'Quhae, 5th Feb. sailed from Madeira, 1st March arrived at Ber- muda.
- GANNET**, 18—Com. M. H. Sweney, 14th Feb. Port Royal, Jamaica.
- HARRIER**, 18—Com. H. L. S. Vassal, 21st March, sailed from Plymouth.
- HERMES**, St. V.—Lieut. A. Kennedy, Wool- wich.
- HYACINTH**, 18—Com. W. Oldrey, 17th Jan. Montego Bay, 14th Feb. Port Royal.
- IMOGENE**, 18—Capt. P. Blackwood, 17th Jan. at Rio.
- INVESTIGATOR**, 16—Mr. G. Thomas, North Sea.
- ISIS**, 50—Capt. J. Polkinghorne, 29th Jan. at Sierra Leone.
- JASEUR**, 18—Com. F. Harding, 5th Jan. at the Cape.
- KANGAROO**, 3—Lieut. J. Hookey, 31st Dec. at Nassau.
- LEVERET**, 10—Lieut. W. F. Lapidge, 29th March, sailed for Madeira.
- LIGHTNING**, 18—Com. T. Dickinson, on her way home.
- LIGHTNING**, St. V.—Woolwich.
- MADAGASCAR**, 46—Capt. E. Lyons, 5th Mar. arrived at Malia 26th March, sailed for Smyrna.

- MAOICIENNE**, 14—Capt. J. H. Plumridge, arrived at Rio, 31st Dec. and sailed for India 5th Jan.
- MAGNIFICENT**, 4—Lt. J. Paget, Port Royal.
- MAIDSTONE**, 42—Capt. C. M. Schomberg, 5th Jan. sailed from Cape for Rio.
- MASTIFF**, S. V. 6—Lieut. J. W. Wolf, Spithead.
- MELVILLE**, 74—Capt. H. Hart, 3d Feb. arrived at Teneriffe. Flag-ship. V.-Adm. Sir J. Gore, K.C.B.
- MESSENGER**, St. V.—Lieut. B. Aplin, Woolwich.
- METEOR**—Com. R. C. Copeland, arrived at Portsmouth 20th April.
- METEOR**, St. V. 2—Lieut. W. H. Symons, 2d April, sailed from Plymouth for Medit.
- MIXX**, 3—Lieut. J. Simpson, Port Royal.
- NAUTILUS**, 10—Com. Rt. Hon. Lord G. Paulet, Feb. 21st, at Oporto from Cork.
- NIMBLE**, 5—Lieut. J. M. Potbury, Bahama Islands.
- NIMROD**, 20—Lord E. Russell, Plymouth.
- NORTH STAR**—Capt. Hon. G. W. Trefusis, 14th Feb. at Port Royal.
- OCEAN**, 80—Capt. S. Chambers. Flag-ship, Sheerness, V.-Adm. Sir J. P. Beresford, Bt. K.C.B.
- ONYX**, 10—Lieut. A. B. Howe, Cork.
- ORESTES**, 18—Com. W. N. Glascock, Irish Station.
- PALLAS**, 42—Capt. W. Walpole, 18th Feb. sailed from Barbadoes.
- PEARL**, 20—Com. R. Gordon, 8th March, sailed from Plymouth.
- PELICAN**, 18—Com. J. Gape, 22d April, at Patras.
- PELORUS**, 18—Com. R. Meredith, 26th Jan. sailed from Gambia for Sierra Leone.
- PHILOMEL**, 10—Com. W. Smith, 21st March, at Gibraltar.
- PICKLE**, 5—Lieut. T. Taplen, 13th Jan. arrived at Maranham from Bermuda.
- PIKE**, 12—Lt. A. Brooking, coast of England.
- PINCHER**, 5—Lt. W. S. Tulloh, Bahamas.
- PLUMPER**, 12—Lieut. T. Cresser, 18th Jan. River Gambia.
- PLUTO**, St. V.—Lieut. G. Buchanan, 27th Jan. sailed from Gambia for Sierra Leone.
- PROCRIS**, 10—Com. J. T. Talbot, 8th March, Malta.
- PYLADES**, 18—Com. E. Blankley, 18th Jan. at Rio.
- RACKHORSE**, 18—Com. C. H. Williams, 14th Feb. at Port Royal.
- RAINBOW**, 28—Capt. Sir J. Franklin, Knt. 4th March, Corfu.
- RALEIGH**, 18—Com. A. M. Hawkins, 8th Feb. Nap. di Romania.
- RANGER**, 28—Capt. M. H. Dixon, 23d Feb. at Barbadoes, sailed 3d March for Bermuda and England.
- RAPID**, 10—Com. C. H. Swinburne, 8th Feb. Marseilles.
- RATTLENAKE**, 28—Capt. C. Graham, 2d Dec. sailed from Rio.
- RAVEN**, S. V. 4—Lieut. W. Arlett, Africa.
- RECRUIT**, 10—Lt. T. Hodges, 11th April, sailed for Halifax.
- REVENGE**, 78—Capt. D. H. Mackay, 8th April, Tagus.
- ROSE**, 18—Com. E. W. Pilkington, 17th Jan. at Montego Bay, 14th Feb. at Port Royal.
- ROYALIST**, 10—Lieut. R. N. Williams, Oporto.
- St. VINCENT**, 120—Capt. H. F. Senhouse, 13th Mar. Nap di Roma. Flagship V.-Adm. Sir H. Hotham, K. C. B., &c.
- SAMARANG**—28, Capt. C. H. Paget, 4th Jan. at Bahia.
- SAN JOSEF**, 110—Capt. R. Curry, Plymouth, Flag-ship Admiral Sir M. Dixon, K.C.B.
- SAPPHIRE**, 28—Capt. Hon. W. Wellesley, 13th Jan. sailed from Maranham.
- SATELLITE**, 21—26th Dec. left Madras for Trincomalee and England.
- SCYLLA**, 18—Com. Hon. G. Grey, 8th March, at Malta.
- SERINGAPATAM**, 46—Capt. Hon. W. Waldegrave, Oct. at Coquimbo.
- SKIPJACK**, 5—Lieut. W. Shortland, Bahamas.
- SOUTHAMPTON**, 52—Capt. J. M. Laws, 17th Sept. at Madras.
- SPARROWHAWK**, 18—Com. D. Mayne, 17th Jan. at Montego Bay.
- SPEEDWELL**, 5—Lt. W. Warren, Nassau.
- STAG**, 46—Capt. Sir T. Trowbridge, 17th March, Plymouth.
- SULPHUR**, 8—Com. W. T. Dance, King George Sound, Australia.
- SWAN**, 10—Lieut. J. E. Lane, North Sea.
- SYLVIA**, 1—Lieut. T. Spark, North Sea.
- TALAVERA**, 74—Capt. S. Brown, Spithead.
- TALBOT**, 28—Capt. R. Dickinson, C. B. 11th Dec. at Mauritius.
- THUNDERER**, 84—Woolwich.
- TWEED**, 28—Com. A. Bertram, 15th Feb. at Jamaica.
- TYNE**, 28—Capt. C. Hope, 4th Dec. off Pernambuco.
- UNDAUNTED**, 46—Capt. E. Harvey, 28th Jan. at Cape.
- VICTOR**, 18—Com. R. Russell, 16th Feb. left Lisbon for Halifax.
- VICTORY**, 104—Capt. H. Parker. Flag-ship Admiral Sir T. Foley, G. C. B. Portsmouth.
- VIPER**, 6—Lieut. H. James, Sheerness Station.
- VOLAGE**, 28—Capt. Right Hon. Lord Colchester, Pacific.
- WARSPITE**, 76—Capt. C. Talbot. Flag-ship Adm. Sir T. Baker, K.C.B. 17th Jan. at Rio.
- WINCHESTER**, 52—Capt. Rt. Hon. Lord W. Paget, 14th Feb. at Port Royal, Jamaica. Flag-ship Vice-Adm. Sir E. G. Colpoys.
- WOLF**, 18—Com. W. Hamley, 21st Feb. arrived at Ceylon.
- ZEBRA**, 18—Com. D. De Saumarez, 2d Nov. arrived at Sydney from Madras, and sailed for New Zealand.

His Majesty is expected to honour Sheerness Dock-yard with a visit, about the first week in June.

The *Castor*, of 36 guns, now in progress of building at Chatham, is

unexpectedly ordered to be launched on the 3rd of next month, and to be brought forward for sea with all practicable despatch, in order to try her sailing qualities in an experimental

squadron, which, we understand, will rendezvous at Spithead, in about two months from the present time.

His Majesty's steam vessel *Dee*, of 700 tons, was launched at Woolwich lately, and taken into dock to be coppered. Two of her guns (32 pounders) are to be placed on swivel, one forward and the other aft.

His Majesty's steam vessel *Messenger* is fitted as a naval transport.

The *Aurora* frigate, fitted as a coal depôt, sailed from Plymouth lately for Falmouth.

The *Warrior*, of 76 guns, has been towed to the Medway, to be moored off Chatham Dock-yard, as a receiving ship.

The *Conway*, of 28 guns, now fitting at Chatham with all practicable despatch, is intended to take out Lord Mulgrave (formerly Lord Normanby) as Governor of Jamaica. His Lordship (in company with Lady Mulgrave) visited that ship on Tuesday last. The *Conway*, it is expected, will leave Chatham about the 25th of April, for Portsmouth, and take her final departure from this country about the middle of the present month.

The *Egmont*, of 74 guns, was taken into dock to be inspected, on 12th April; and the *Bellerophon*, of 74 guns, was taken out, having undergone sundry repairs.

H.M.S. *Vernon*, 50, (to be launched on 1st May,) and *Castor*, 36 guns, will be commissioned at Woolwich early in the present month; the former by Capt. Sir F. Collier, Knight, and the latter by Captain Sir Richard Grant, Knight.

The *Radamanthus*, new steam vessel, 4 guns, of 812 tons, and two engines of 110 horses' power each, was floated out of dock at Plymouth, lately, in the presence of a very gay assemblage of spectators. She is a very fine vessel, designed by Mr. Roberts, master-shipwright of that dock-yard, formerly sub-surveyor of the Navy Board, and under whose directions the *Caledonia* was built.

A court-martial was held at Jamaica, on the 13th and 14th February, the members of which were—Com-

modore Farquhar, K.H.C.B., Captains Phillips, Lord W. Paget, Commanders Williams and Burnet; Edward Laws, Judge Advocate; to try Captain Agar, and the Master of the *Arachne*, sloop of war, for running that vessel ashore on a coral reef, which extends six miles off the uninhabited island of Mariгуana, on the 15th December. The court determined that no blame whatever attached to Captain Agar or the Master of the *Arachne*, and that the accident was entirely to be attributed to the N. W. current; but that great praise was due to the officers and ship's company, for their great exertions in getting the vessel off the reef, and for preserving all her guns, stores, &c.

We are happy, in testimony of the presence of mind and gallant conduct of Mr. Benjamin T. Fox, Midshipman on board H.M. brig *Brisk*, to record that the grateful and sincere thanks of a general court of the Royal Humane Society, held on the 11th of January last, were unanimously voted and transmitted to that gentleman, for his courage and humanity in jumping into the rapids of the river Chagres to the relief of his late Commander, Henry Foster, Esq., of H.M. sloop *Chanticleer*, who had unfortunately fallen overboard, and for his gallant and meritorious efforts to save his life. This flattering resolution was communicated to Mr. Fox, signed by the Duke of Northumberland, as president of the society, and by Colonel Clithero, chairman of the meeting.

The officers of the Royal Marine Artillery have presented Colour Sergeant Kilbie, on his discharge, with a very handsome silver tankard, to mark their sense of his zeal and unwearied attention to the duties of his station, during a long course of honourable service.

COAST GUARD EXPENSES.—This service, in a *part* of Sussex and Kent recently occupied by the Coast Blockade, now employs 7 Commanders, 108 Chief Officers, and 1138 Boatmen and persons of other description, at a cost of £83,636 11s. per annum; the same coast is also watched by ten small cruisers, manned with 245 persons,

at an annual charge of £13,512; the value of goods seized by this force during the past year, is £20,595, and they have convicted 27 persons of smuggling offences; the Coast Blockade under Captains Mingaye and Pigot, during the last year of their services, seized goods to the amount of £18,738, and convicted 24 persons implicated in running goods.

TRANSPORTS, AND TROOP SHIPS ROMNEY AND CEYLON.—The *Romney* has been fitted to convey 1000 troops, and the *Ceylon* to convey 500; the expenses of these two ships for two years will be £44,000, while the expense of seven transports, making 3000 tons, which will be required to perform the same work, will be £53,000. It should, however, be recollected, that these seven ships may be applied to more various purposes than two ships can be. The expense of the *Romney*, when last in commission, for three years and three months, was £61,602, while the hire of three transports of 400 tons each, which would have done the same service for the same period, would only have been £37,582; but the *Romney* was then

almost a man of war, and could carry only 500 troops.

H.M.S. *Ganges* was paid off into Ordinary on the 23rd of March, at Portsmouth.

The *Salamander* steamer, of large dimensions, will be launched from Sheerness Dock-yard, during the present month, and the *Vestal*, of 28 guns, to be built on Captain Symond's plan, will be immediately laid down on her slip.

H.M.S. *Briton* is expected home to have a new foremast.

R.M. packet-brig *Sphynx* is to be paid off, and Lieut. Passingham is to command the *Sheldrake*.

H.M.S. *Trinculo* having undergone a complete repair, was to go out of dock about the 20th of April, and it is expected will be commissioned by Commander Booth.

The *Phoenix*, a large steam vessel, is to be launched at Chatham on the 2nd of May.

Mr. W. Guest, and Mr. T. Newenham, have passed their examination at the Royal Naval College.

Mr. G. Sprigg has passed his examination in Seamanship.

MOVEMENTS OF TRANSPORTS.

Amphitrite, Lieut. Cooley, 17th April, arrived at Portsmouth.

Arab, Lt. Harris, 10th April, arrived at Leith.

Cygnel, Lieut. Lester, Deptford, for Halifax.

Diligence, 8th April, arrived at Sheerness.

Hope, Lieut. Ryder, 16th March, arrived at Portsmouth.

Industry—Woolwich.

Leonidas, Lieut. Woolridge, 19th Feb. arrived at Barbadoes from Cork.

Lord Wellington, Lieut. Woodman, arrived at Barbadoes 30th Jan. with 89th Regt.

Maitland, Lieut. Davison, arrived at Jamaica, 4th Feb. from Cork.

Marquis Huntley, Lieut. Mayne, 19th April, sailed from Portsmouth for Woolwich.

Marshall Bennet, Lieut. Ward, 19th Feb. arrived at Demerara from Cork, 2d March arrived at Barbadoes.

Nereid, 5th April, sailed from Portsmouth for Gibraltar.

Neca, 7th April, arrived at Portsmouth from S. America.

Orestes, Lieut. Garret, Deptford.

Parmelia, Lieut. Saunders, 19th April, arrived at Portsmouth from Lisbon.

Prince Regent, 14th March, arrived at Malta, and sailed for Corfu.

Recovery, Lieut. Brady, 1st April, sailed from Portsmouth for the River.

Roslin Castle, Lieut. Derriman, arrived at Jamaica from Cork 5th Feb.

Stentor, Lt. Barber, 29th March, Gibraltar.

Sylvia, Lieut. Wesley, arrived at Corfu, 20th Feb.

William Harris, Lieut. Stevens, 14th Mar. at Malta.

EAST INDIA SHIPPING.

On Saturday, March the 24th, the despatches for Madras and China, by the ship *London*, Capt. Timothy Smith, were closed at the East India House, and delivered to the purser of that ship.

On the 11th of April, a Court of Directors was held at the East India House, when thanks were voted to Sir R. Campbell, Bart. Chairman, and to J. G. Ravenshaw, Esq. Deputy-Chairman, for their zeal and attention to the Company's interest during last year.

The following Commanders took leave, viz.: Capt. P. Baylis, *Canning*, and Capt. D. Marshall, *Edinburgh*, for China direct.

On the 18th of April, a Court of Directors was held at the East India House, when the following Commanders took leave of the Court previous to departing for their respective destinations, viz.: Capt. Robert Cook Fowler, *Lord Lother*, and Capt. H. L. Thomas, *Berwickshire*, China direct.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 102.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
121 Albion		Wilmington	Rochelle	44 N. 40 W.	12 Mar	6732 Cw. part savd.
122 Alice	How	Sunderland	Bridport	Kentish Knk.	20 Mar.	6727 Crew saved.
123 Ann	Jones	Bristol		Jamaica	21 Jan.	6727
124 Belem East.	Dennis	Lisbon	Liverpool	Liverpool	19 Mar.	6727 Doubtful.
125 Betsy		Dublin		44 N. 33 W.	24 Mar.	6732 Abandoned.
126 Brilliant	Marshall	Cette		N. Orleans	13 Mar	6727
127 Britannia	Corston	Wigtown	Liverpool	Doubtful	5 Mar.	6729
128 Byron	Wright	Liverpool	Havana	Off Havana	Feb.	6730 Total.
129 Coletta	Harner	London	Ostend	Nienport	27 Mar.	6730 Grounded.
130 Commerce	Taylor	Newcastle	Portsmouth	Kent knock	6 Mar.	6726 Sunk.
131 Courier	Dechoale	London	Dunkirk	Near Calais	18 Mar	6726 Doubtful.
132 Defence	Alloa	Alloa	Quebec	Off Ig. Hope	31 Mar.	6732 Crew saved.
133 Daria Louisa	Carter	Waterford	Padstow	Doubtful	26 Jan.	6726 Doubtful.
134 Economy	Williams	Naples	Hambro	Off Lisbon	25 Mar.	6735 Burnt, Cw. ad.
135 Elizabeth	Brown	Sydney	N. Zealand	Doubtful	2 Feb. 31	6728 Doubtful.
136 Elizabeth		Halifax	Jamaica	Caucasus Rf.	5 Feb.	6731
137 Eolus	Wallis	St. Ubes	Baltic	Foundered	Mar.	6731 Crew saved.
138 Easher	Forster		St. Michl's	Doubtful	16 Dec.	6730 Lost in Port.
						Land Roads
139 Experiment	Kennedy	London	Ghent	Campvere	21 Mar.	6728 Doubtful.
140 Kains	Goodwin	Swilvey	Launceston	Hobart Town	20 Oct.	6726 Totaly.
141 Halycon	Walton	Sunderland		Nore Sand	21 Mar.	6727 Doubtful.
142 Hale	Dixon	Whitehaven	Duddon	Hot Barrow	20 Mar.	6727 On shore.
143 Hannah		Liverpool		47 N. 34 W.	14 Jan.	6726 Abandoned.
144 Hawk	McEntire	Belfast		C. of Wexx.	10 April	6733 Crew saved.
						Master drowned.
145 Hebe	Letby	Sunderland	Schiedam	Off Goree	20 Mar.	6728 Abandoned.
146 Helena	Cox	Portsmouth	Western Is.	Doubtful	24 Nov.	6727 Doubtful.
147 Hibernia	Herring	Liverpool		Near Mobile	3 Feb.	6726 Part saved.
148 Hope	Carr	Sunderland	Margate	Off Robin Hood's Bay	14 Mar.	6726 Crew saved.
				Off Scilly	4 Mar.	6727 Crew saved.
149 Indian		Brazil		Dublin Bay	15 Mar.	6726 Crew saved.
150 John & Isaac	Hollwood	Faulkner	Berbice	Ostin's Point	13 Mar.	6734 Crew saved.
151 Lady Wolfe				Pentil. Forth	10 April	6734
152 Lt. Saffield	Colling	Newcastle	Quebec	Off Goree	27 Mar.	6729 Crew saved.
153 Mary	Colling	Newcastle	Quebec	Off Innesberg	10 Mar.	6729 Crew saved.
154 North Briton	Wood	Donceal	Quebec	Bass's Strait	Aug. 1831	6727 Crew saved.
155 Onnia	Buck	Mauritius	Sydney	Doubtful	31 Nv. 31	6728 Doubtful.
156 Pacific	Ferguson	Savannah	Liverpool	Hoyle Bank	20 Mar.	6727 Crew saved.
157 Penelope		Alexandria		Run down	2 April	6734 By Laura.
158 Pallas	Terry	Newcastle	Stettin			Cw. ad.
159 Ranger	Cutting	Sunderland	Rotterdam	Rotterdam	30 Mar.	6730 Run foul of.
160 Romulus	Baker	Sunderland	Rotterdam	Rotterdam	30 Mar.	6730 Run foul of.
161 St. Andrew	Tate	S. Leone	London	43 N. 27 W.	29 Feb.	6732 Crew saved.
162 Snipe	Stevenson	Hondurns	London	Triangles	23 Jan.	6731 Crew saved.
163 Weyniss	Wylie	Limerick	Glasgow	Ct. of Ayr	March	6737 Crew saved.

Melancholy Disaster and Loss of Life at Sea.—We regret to have to record a very disastrous and fatal occurrence, which happened to the brig Eliza, Hynd, from this port to New York, with a general cargo. The Eliza encountered very severe gales, and had to stop at the Orkneys for some time, which she had left to proceed on her voyage, when, on the 6th inst, being in longitude 21 W., she encountered a tremendously heavy sea, which broke on board of her, carried away her boats, &c., tore up four planks from the deck, reduced the vessel to a mere wreck, and carried off the mate, — Cooper, David Mat-

thew, seaman, and an old man of the name of Duncan, cook. After drifting about in a most distressed condition for eight days, on the 16th a vessel hove in sight, which proved to be the Resolution, Hogg, from Peterhead, for the whale fishery. After learning their desperate and forlorn situation, the Captain of the Resolution agreed with Captain Hynd to tow them into a port in Shetland. They reached Scalloway roads, Shetland, on the morning of the 16th. The letters of Captain Hogg and Captain Hind agree in representing the condition of the Eliza, and her crew and passengers, as truly deplorable.—*Dundee Courier.*

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Albany	Robson	Sunderland		Herd Sand	24 Mar. 6729	Been aground
Amicus	Holmes	Goole		Hull	16 Apr. 6734	Run foul of.
Ann	Duncan	Sunderland	Memel	Elsinore	24 Mar. 6730	Been aground
Bell	Taylor	Newcastle	Dublin	Stornaway	5 Mar. 6726	Been aground
Blossom	McKnight	Newry	London	Cowes	30 Mar. 6730	Been aground
Bulwark	Barry	Wexford	Glasgow	P. Patrick	17 Mar. 6726	Leaky.
Calcutta	Watson	Liverpool	Bengal	Coringa Bay	April 6731	Disasted.
Concordia	Ostmann	Alona	Sunderland	Grimshy	24 Mar. 6728	Aground.
Cumbroy	Tucker	Letterkeny	Bristol	Colonsay	12 Mar. 6726	Aground.
Delme	Hicks	Limerick	London	Tarbut Roads	14 Mar. 6726	Leaky.
Dorothea	Moritz	Memel	Liverpool	Drakos	15 Mar. 6728	Aground.
Eliza	Hynd	Dundee	New York	Shetland	23 Mar. 6728	2 lives lost.
Elizabeth	Nicholson	Shields	London	Harwich	20 Mar. 6727	Damaged.
Experiment	Bruce	Hull	Quebec	Off Calais	12 Apr. 6734	Aground.
Experiment	Kennedy	London	Ghent	Off Can pver	24 Mar. 6731	Aground.
Fame		Liverpool	Donegal	Hybrides	18 Mar. 6728	Aground.
Flora	Maldon	Harwich	Harlingen	Vieland	20 Mar. 6728	Stranded.
Fox	Linklater	Aberdeen		Herd Sand	24 Mar. 6729	Been aground
Garonne	Hicks	Liverpool	Constnople.	Malta	8 Mar. 6732	Discharging.
G. Henderson	Tate	Dublin	St. Andr wa	Belfast	14 Mar. 6726	Leaky.
Helen	Driscoll	Cork	Bristol	Padstow	26 Mar. 6729	
Herald	Richards	London		Penzance	26 Mar. 6729	Damaged.
Hero	Anderson	Shields	Aberdeen	Aberdeen	24 Mar. 6728	Been aground
Huntcliffe		Lon. Dery.	London	Montrose	March 6726	Aground.
Huskisson	McLeod	Liverpool	Charleston	Holyhead	2 Apr. 6731	Damaged, run foul of.
Jessie	Anderson	Leith	Sunderland	Dunbar	24 Mar. 6728	Aground.
King George			London	Newport	27 Mar. 6730	Aground.
Lydia			London	Gibraltar	15 Feb. 6726	Leaky.
Lima Packet	Cunning'm	Trinidad	Liverpool	St. Thomas	27 Feb. 6733	Leaky.
Mary	Shand	Banff	London	Aberdeen	6 April 6732	Damaged.
Mary	Hunter	Shields	London	Harwich	13 Apr. 6734	Been aground
Mary Ann	Hasbrough	Newcastle.	Seaton	Dover	10 Apr. 6733	Been aground
Margaret	James	Dublin	Southpton.	Falmouth	26 Mar. 6729	Damaged.
Matilda	Catty	Sunderland	Charente	Grimshy	13 Apr. 6734	Run foul of.
Nancy		London	Shields	Bridlington	26 Mar. 6729	Run foul of.
North Briton	Morrison	Java		Bermuda	13 Jan. 6727	Damaged.
Pallas	Terry	Newcastle	Stettin	On shore	31 Mar. 6732	Off Elsinore.
Progress	Alder	London	Hambro'	Cuxhaven	13 Apr. 6734	Been aground
St. Helena	Elliott	London	Newcastle	Scarboro'	24 Mar. 6728	Run foul of.
Samaritan allope	Stamont	Sunderland	Stockton	Shields	17 Apr. 6735	Been aground
Sarah	Anderson	Sunderland	Memel	R. Dange	10 Mar. 6730	Been aground
Seaflower	Ashton	London	Wakefield	Tinney Sands	24 Mar. 6728	Aground.
Saine		Charleston	Stettin	Cowes	21 Mar. 6727	Leaky.
Sisters	Rose	London	Antwerp	Ramsgate	17 Apr. 6735	Discharging.
Sybil	Bynon	Dublin	Chepstow	Cardigan	19 Mar. 6727	Damaged.
Terra Nova	Kulso	Greenock	New York	Greenock	23 Mar. 6728	Dismasted.
Thetis	Anderson		Riga	Brielle	30 Mar. 6730	Been aground
Wanderer	Jenkins	Trinidad	Dublin	St. Thomas's	23 Feb. 6733	Leaky.
Zetis		Waterford	N. Orleans	Off Mississippi.	24 Jan. 6727	Aground.

Expedition.—An extraordinary instance of rapidity in unloading and reloading a vessel, occurred in the Humber Dock, at the close of last week, rarely, if ever equalled, in any other port. On Friday morning, at ten o'clock, the Hamburg steam-packet, *Monarch*, entered the Dock basin with a full cargo, consisting of two hundred and forty bales of wool, seventy casks, &c. of clover-seed and succory, and various other articles. Notwithstanding some delay, originat-

ing in a misconstrued order of quarantine, the whole of the cargo was delivered by seven o'clock the next morning; and by five on the same day (Saturday) the vessel was re-loaded with two hundred and thirty-two bales, and other goods, together with a stock of coals for the voyage; affording evidence, if proof were wanting, of the superior facilities of this port, and of the promptitude of the officers of the customs. The *Monarch* left the Humber on Sunday morning.—*Hull Paper.*

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
Abigail	Kelly	Wilmgtou.	Liverpool	26 N 69 W	26 Feb.	6733 Leaky.
Anley		Jersey		43 N 14 W	11 Mar.	6757
Ann		Glasgow		41 N 31 W	9 Mar.	6727
Am. Wilson		London		10 S 23 W	12 Jan.	6733
Arab		Cardiff	Mediterrn	38 N 9 E	4 Mar.	6735
Atlantic		Belfast	New York	42 N 69 W	27 Feb.	6727
Baronet	Rankin	Liverpool	Pernambuc	4 N 25 W	9 Feb.	6735
Bengal Merchant	Campbell	London	Benzel	1 N 26 W	20 Jan.	6728
Bramley		Smyrnia	London	36 N 11 W	7 Mar.	6731
Bristol		Bristol	New York	49 N 28 W	10 Mar.	6727
Carl Adolf	Riedemau	Porto Rico		37 N 39 W	14 Mar.	6733
C. Kerr	Brodie	China	Bombay	Str Sunda.	14 Dec.	6731
City of London		Africa		32 N 37 W	4 Mar.	6726
Dennet		Belfast	N. Carolina	33 N 54 W	26 Feb.	6727
Duchess of Athol		London	Bombay	1 N 21 W	20 Feb.	6731
Dunira	Hamilton			37 N 17 W	18 Feb.	6727
Eliza		Liverpool	St Domingo	26 N 39 W	15 Mar.	6733
Elizabeth & Mary		Clyde	Jamaica	2 N 43 W	19 Mar.	6735
Isabela	Da Luz	Santos	Lisbon	39 N 35 W	26 Mar.	6733 Damaged.
Enrolus		London	Miramichi	49 N 9 W	2 April	
Fanny		London	C. Goodlip	Off N. Islds.	25 Jan.	6733
Geo. Washington		Glasgow	Havana	16 N 48 W	21 Feb.	6728
Guiana		London	Demerara	19 N 64 W	27 Feb.	6733
Henry and Sarah		Gibraltar	Pernambuc	5 N 25 W	11 Feb.	6727
Hersford		Liverpool		5 N 27 W	15 Feb.	6726
Huron		Sitolda	Off C. St Vin.		29 Feb.	6727
Jane		Santos	Trieste	21 N 37 W	18 Jan.	6733
Julian		Odesa	Liverpool	Off Malaga	28 Feb.	6731
Kangaroo		Bombay		3 S 17 W	29 Feb.	6735
Louch		Rio Janeiro	Stockton	19 N 41 W	17 Mar.	6735
Magnus		Liverpool	New York	41 N 65 W	19 Mar.	6733
Manchester		London	St. John's	46 N 23 W	20 Mar.	6733
Maria		Liverpool	New York	34 N 63 W	1 Mar.	6727
Martha		Liverpool	Philadelph.	49 N 18 W	13 Mar.	6726
Nimstrel	Stade	Rio Janeiro	Portsmouth	36 N 35 W	7 Mar.	6726
Neva		Liverpool	New York	41 N 36 W	10 Mar.	6731
Northumberland		Liverpool	New York	49 N 35 W	11 Mar.	6727
Northumberland	Mitchell	Rio Janeiro	Bourdeaux	33 N 29 W	27 Mar.	6735
Norwei Eruestine		Mobile	Liverpool	45 N 33 W	26 Mar.	6734
Orion		London	Bombay	5 N 22 W	17 Feb.	6731
Orwell	Dalrymple	London	V. D. Laud	9 N 20 W	23 Jan.	6734
Persian	Friend	London	Sydney	10 S 29 W	11 Dec.	6726
Pyramus		Cork		10 S 2 W	9 Jan.	6733
Rotterdam's Wel	Noorbeck	Rotterdam	Java			
varcu		Liverpool		35 S 47 E	19 Sept.	6727 Dismasted.
St. George		Liverpool		9 S 84 E	16 Oct.	6727 In distress.
St. George				Wooloo	5 Nov.	6733 Whaler.
Sar. h & Elizab.	Swaine			41 N 48 W	11 Mar.	6728
Scotta		Greenock	Bengal	35 N 21 W	4 Feb.	6728
Sir J. Roe Reid	Haig	Liverpool	Quebec	49 N 24 W	1 April	6735
Strathisla		Plymouth	London	30 N 60 W	3 Mar.	6731
Strathmore	Campbell	Antigua	Bordeaux	2 S 19 W	23 Dec.	6734
Tost		Liverpool	Mauritius	39 N 25 W	26 Feb.	6726
Thetis		Dublin	Trinidad	20 N 39 W	16 Jan.	6733
Two Brothers		Bombay		5 N 23 W	13 Feb.	6726
Vesper		Gibraltar	Valparaiso		12 Jan.	6735 Sailed Febr.
Vulture	Burgess	Maranham	Gibraltar	36 N 39 W	25 Mar.	6733
Witch						

New Bridge over the Hull.—We have seen a plan of a proposed bridge across the river Hull, to the south of the present North Bridge, on an ingenious, and to us a novel, construction, uniting strength with lightness and elegance of design; it may be opened and closed by a boy of ten years of age, and the cost of

it will be very moderate. It will shortly be laid before the public, when we hope the measure will meet with that serious and dispassionate attention and support of which the proposition appears highly deserving, from the great convenience and facility of communication it will give to the town and its neighbourhood.—*Hull Paper.*

HADLEY'S QUADRANT.

The following anonymous letter addressed to the Editor of the *Portsmouth Herald*, and extracted from that excellent paper, will be found interesting to our naval readers.

"DEAR SIR,—Fully convinced that every thing relating to science meets your approbation, and that the historical account of the quadrant (called Hadley's), may not be entirely lost in oblivion, I beg leave to submit, for your consideration and use, the following account of that inestimable instrument.

"Mr. John Hamilton Moore, in the last edition of his *Epitome of Navigation*, observes, 'that the invention was attributed to Mr. Hadley; but that Mr. Godfrey, a glazier, of Philadelphia, had also claimed that honour,' and he very vaguely decides upon their claims by observing, 'that two persons, in different hemispheres, might hit on the same idea.' This, no doubt, is a plausible way of getting rid of the argument; but what I am now about to relate is an absolute fact, to which I can produce the most satisfactory testimony. Previous to, and after, the American revolutionary war, there was a philosophical club held at the Indian Queen, in Market-street, Philadelphia, composed of the following, viz.—Dr. Franklin, of whom, as he wrote his own life, it is unnecessary to say more; Dr. Rittenhouse, originally a house-carpenter, afterwards a great mathematician; Tench Francis, a merchant, who was so great a lover of fish, that all his children were baptized by piscatory names, such as Tench, Roach, Perch, &c.; Oswald Eve, originally a shipwright, afterwards a master mariner, and a very scientific man; he adhered to the royal cause during the struggle (but his sons took the contrary part), and, after the contest was over, he was rewarded by the Government of Cat Island, one of the Bahamas. I should have mentioned that he had been to the East Indies, as carpenter of an Indiaman, a vast undertaking for a Trans-Atlantic; Godfrey, a glazier, of Philadelphia, a man of intelligence;

and five or six more, whose names I have now forgotten.

"Now Mr. Godfrey was putting a pane of glass in a window on the first floor of a house in Philadelphia, when, having a piece of glass in each hand, he saw the double reflection. He immediately left his occupation, and ran through the streets like one deranged, exclaiming, 'I've got it,' 'I've got it.' He communicated his ideas to Dr. Franklin and Mr. Eve, and with their assistance formed the first instrument (which superseded Davis's *pig yoke*), now called Hadley's Quadrant. I have, Sir, had the original in my hands many times. Mr. Godfrey, upon finishing his instrument, sent his son with it to the West Indies, to try its accuracy, where, being in company with some naval officers, he asserted that he had an instrument that would determine the latitude to a greater nicety than any instrument they possessed. Lieutenant Hadley desired to see it, and taking a sketch of it, upon his return to Europe, obtained a patent, and it is thence called Hadley's Quadrant. Yours, &c."

NAUTICUS."

The Lively—(Extract from the *Tasmanian*, Sydney Paper, just arrived.) —"We had the pleasure of conversing with Captain Avery, of the cutter, *Lively*, and of inspecting that remarkably fine little vessel, which, being but a Cowes Pilot-boat of about forty tons, has semi-circumnavigated the globe, and in its most forlorn and dangerous regions. We understand that this fine cutter was fitted out as a tender to the *Tula* by the owners, those very enterprising oil-merchants and ship-owners, the Messrs. Enderbys, of London. The two vessels left the Falkland Islands together, and when in a very high southern latitude, separated in a very heavy gale of wind. The *Lively* never again saw her consort until she rejoined her in this port. During five months, Captain Avery pursued his instructions in the midst of the icy polar region, until, having lost all her crew but himself, one man, and a little boy, (which latter had the misfortune to have his

hand shattered to pieces by the accidental falling of a boat upon it,) he put into Port Philip, in the very utmost state of distress. There, while himself and his two surviving companions were on shore, endeavouring to obtain refreshment, the vessel was either driven away, or carried off by the natives, and, after the lapse of a fortnight, when they gave themselves up for lost, and were so exhausted by want of food that they were unable hardly to move, they fell upon her, by accident, in one of the bays of that port. Captain Avery is a plain sailor-like man, but extremely intelligent and well-informed. His adventurous spirit may be well understood from the fact, that when he took command of his vessel, he alone, of the whole on board, could either read or write; so that, had accident confined him to his bed (to say nothing of a more serious result), the vessel's course through the trackless ocean must have been left to the gracious care of Divine Providence! We understand that very important discoveries have been made by both vessels, which, if they safely reach England, will abundantly reward their speculative owners. We believe this is the only instance where the great expense of a voyage of discovery has been incurred by private owners. Before the return of these vessels to England, great interest will be excited, to learn the history of their interesting voyage, which, of course, will be made public, as far as the interest of the owners will permit."—*Times*, March 31, 1832.

Naval Gunnery.—We understand that Mr. Roberts, master shipwright of this dock-yard, who must be well known to most of our readers, as an officer distinguished in the professional department, has suggested a new method of mounting *swivel* guns for sea-service; the object of the invention being to obviate the necessity of "yawing" the ship, when the required direction of fire is interrupted by the masts, rigging, or other impediments. Mr. Roberts is now building a noble steam vessel, the *Rhadamanthus*, of 800 tons, on a plan designed

by himself; and, we believe, his projected improvement in marine gunnery originated in the description of armament she is intended to carry; it being proposed to fit her with one 96 and one 32 pounder guns amid-ships, on swivels. Mr. Roberts proposes to make the gun-carriage in two parts, something similar to a carronade-bed and slide. The lower part, or base, is to be supported upon axle-trees, which are to *converge* towards the centre of a circle of given magnitude, and the trucks are to be of a *conical* form, so that their carriages, when set in motion, will traverse in a circle, and may, therefore, be made to work round a mast, capstan, hatchway, or any other projection above the deck, which it may be desirable to circumscribe. As two tangents may always be drawn to the circumference of a circle from any point without it, it follows that there must be *two* points in the circumference of the circle described by the carriage, from which, aim may be taken to hit a given mark. If the carriage and its base were relatively fixed, (that is, as one mass,) no advantage would be gained by this plan; because, although there are *two* points in the circumference of any circle from which a gun may be fired at a given object, yet the *muzzle* of the gun would have been directed at the object from one point, and the *breech* of the gun pointed towards it from the other, had the carriage been as one body; but by making the gun perform half a revolution upon a pivot, the required line of fire is effected. The plan seems particularly applicable to steam vessels, where the paddle-boxes, chimneys, &c. are very likely to intercept an object. As the gun is fired in a *tangential* direction, and always in the direction of the middle-line of the carriage, it can have no tendency to upset in recoiling, which it would do if it were fired obliquely to the radius. The *Rhadamanthus* will go out of dock on Monday the 16th April, when she will be taken to Woolwich Dock-yard, to have her engines fitted; and we hope to see her return to this port ere

long, at least as perfect in all her parts as any vessel of the kind ever in the service.—*Devonport Telegraph.*

Dartmouth New Floating Steam-Bridge.—This novel invention of a floating bridge, impelled by steam, from an original plan by J. M. Rendell, esq., engineer, and executed by Mr. Mare, of Plymouth, (now in full operation on the River Dart) we are happy to learn, promises to be of the greatest public utility; and, as it becomes more extended in its application, if we may judge from its present admirable success, cannot fail to add another laurel to the brow of native genius and talent, many instances of which Devon and Cornwall can so justly boast. The proposed erection of one upon a larger scale on the Tamar, at Saltash, from the general accommodation it must afford to the agricultural and other interests in both counties; and the facility with which it would convey carriages, of every description, in perfect safety, and without the least impediment from the winds or waves, during the most boisterous seasons, we have no doubt must ensure such an advantageous desideratum—every liberal encouragement from the nobility, gentry, and others in this surrounding and populous district.—*Devonport Tel.*

Important to Ship-Owners.—By an order in council, published in the Supplement to the *Gazette* of March 27, it is decreed that all vessels carrying 50 passengers, including the crew and master, to the British possessions in North America, or to the United States of America, shall carry a surgeon, in order to prevent, as far possible, the disease called cholera reaching those places. By another order in council, all vessels departing from Scotland will be required to do the same; and the surgeons, who are to continue the whole of the voyage, it states, will be required to shew certificates of their having passed their examination.—*Hull Paper.*

ON COMETS.

(Concluded from page 110.)

The observations made by the cele-

brated M. Olbers, of Bremen, on this comet in 1805, gave for the length of its radius (or semi-diameter) five radii and one-third of our globe; and as we have just seen that the centre of the comet will be only four radii and two-thirds of the earth from her orbit, *it results clearly, that a portion of the earth's orbit will, on the 29th of next October, be comprehended or enveloped within the nebulosity of the comet.*

There remains now only one more question, which is,—where, that is, in what part of its orbit, will the earth be at the moment when the nebulosity of the comet rests upon, or embraces, a part of that orbit?

The answer is, the earth will not arrive at that point of its orbit which will be enveloped in the nebulosity of the comet on the 29th of October, until the 30th of November following, that is, rather more than a month afterwards. We have now only to take the mean rate at which the earth travels through its orbit, and this being 674,000 leagues per diem, each league may be taken at about two and a half English miles; a simple calculation will prove, that *the comet of 6½ years will, at all times of its appearance in 1832, be at more than 20,000,000 of leagues from the earth.* But if, instead of crossing the ecliptic on the 29th of October, this comet were to arrive on the 30th of November, it would infallibly mix its atmosphere with ours, and, perhaps, even it would strike against us; but I hasten to say, that an error of a month in the calculated arrival of a comet at a given point is not possible.*

The reader now knows all that can interest him as to the route of the comet in the month of October, 1832. The results which I have given are the same as those which M. Olbers gave in a note, and on which the public, as well as the writers in newspapers, have fallen into such mistakes. I hope I shall be more fortunate, and not be misunderstood. But there are still people who, admitting that the earth will not receive a *direct shock* from the comet in October next, believe

that it cannot touch our orbit without altering the form of it; as if that orbit were a material substance,—as if, in short, the parabolic flight of a shell from a mortar could be affected by passing through a space which had been antecedently traversed by other shells.†

9. *On the effect of the resistance of the ether in space, on the route of comets.*

Hitherto the routes or courses of planets have agreed exactly with the astronomical tables which have been founded on the supposition that their motion was performed in a perfect vacuum.

The course of the "Comet of the Short Period" (Encke's) has just shown us that a new element must be taken into consideration as regards comets,—I allude to the resistance which a gaseous substance of great rarity, which fills space, and which it has been agreed to call "ether," opposes to the movements of bodies traversing it.

This resistance produces no sensible effect on planets, on account of their density; but comets being generally little more than aggregations of light vapours, are sensibly retarded by this ether.

In calculating the positions in which "the Comet of the Short Period" should be found in 1822, 1825, and 1829, M. Encke strictly calculated the derangements it would suffer from the action of planets: nevertheless, at each re-appearance of this comet, there was a difference between calculation and observation, and always on the same side. The cause of these discordances could be found only in the supposed resistance of the ether; and M. Encke has shown this resistance to amount to about two days in each revolution. If this influence on the comet of 6½ years were of the same description, it would not affect essentially the results at which we lately arrived, as to the results of the minimum of the comet's distance from the earth in 1832.

I might have omitted noticing this

new cause of perturbation, but I have spoken of it because certain uneasy people have seized on this resistance of the ether to come to the conclusion, that the moment of the comet's passage through the plane of the ecliptic could not be predicted with certainty; but I will develop this objection in all its force. The comet, if moving in a vacuum, would arrive at a point of our orbit thirty-one days before the earth; but the natural effect of resistance would be to retard, and, as the comet moves in ether, it ought to arrive on our orbit later than was indicated, and hence its distance from the earth will be less than was calculated. But let us go straight to the point: according to the objection made, the real position of the comet would be less advanced than its calculated position. What, however, were the facts in the instance of Encke's comet? Why, on its three appearances in 1822, 1825, and 1829, the real comet always preceded the theoretical or calculated comet.

There is, therefore, no longer any question as to the comet of 6½ years passing the plane of the ecliptic later than was at first calculated. If this comet is governed by the same principles as the comet of Encke, its passage over our orbit must be hastened, and the minimum of the earth's distance would be increased in proportion. I confess that at first sight this acceleration may appear strange, and one would think that a medium which resists could only retard; but this difficulty ceases on our reflecting that the immediate effect of a resisting medium on a body moving in it is to diminish its centrifugal force, which is just the same as if the attractive force of the sun increased. An increase of this force naturally draws the moving body nearer to the sun, and every one knows that the nearer a celestial body approaches the sun in its orbit, it moves so much the quicker.

10. *Will this comet have any serious effect on the seasons of 1832?*

This query will, no doubt, awaken the recollection of the grand comet of

1811, which year was so renowned for its vintage, that wines made in 1811 were called "comet wines." I know that there are strong prejudices against me, but I will say, that neither the comet of 1811, nor any other comet, has ever had the slightest effect on our seasons. I will begin with facts:—Comets, people tell us, warm our globe by their presence. Do they? Nothing is more easy than to refer to the thermometers kept in the different observatories of Europe. Let us take that of Paris, and we shall find the fact, that the medium temperatures of the years most noted for comets is less than those of the years in which no comets have appeared. [A table is here given, which establishes this fact.] One may here remark, in passing, that the year 1805, with its two comets, was a year in which the medium temperature was low, compared with other years: that 1808 may be reckoned amongst the cold years, although few years have produced so many comets; that the coldest year in the table was 1829, in which a comet appeared; and that the year 1831, in which there was no comet, enjoyed a much higher temperature than 1819, when there were three comets, one of which was very brilliant.

With these facts before us, we cannot attribute to comets any calorific power, as far as our seasons are concerned. But there are other considerations which we must keep in view.

A comet, in passing, can act on the earth in only three manners—1. by means of attraction; 2. by its luminous and calorific rays, which emanate from it in all directions; or 3. by the gaseous matter which composes its nebulosity or its tail, and which might fall on our terrestrial atmosphere. This last consideration may be dispensed with as regards the comet of 1832, for it has no tail, and its head will be, as has been shown, at an immense distance from the earth; nor did the tail of the comet of 1811 ever pass over the earth, for, although that tail was 41,000,000 of leagues in length, the comet was never within 47,000,000 of leagues of the earth, and accurate experiments proved that the *maximum* of light which the comet of 1811 shed upon the earth was not equal to one-tenth of the light of the moon, and, when concentrated, did not produce the slightest effect on the blackened bulb of the most sensitive thermometer.

It is, then, to the attractive force of comets that we must look for their supposed meteorological influence.

* M. Arago must be taken, I suppose, at his word here; but he has shown us above, the powerful and unexpected effects planetary perturbations have had both in lengthening and shortening cometary revolutions. Why, then, is the six and three quarter years' comet to be exempt?—Tr.

† With much deference to M. Arago's great talents, this is *not* an illustration in point. The shells *have* passed—are gone, but the earth is near, and in her orbit. The fears entertained are *not* that the orbit will be acted on as a mere orbit, but that the orbit will be acted on by the effects produced on the earth by the comet, and hence a change in the orbit.—Tr.

COPY OF THE ORDER RELATING TO THE UNIFORM AT PRESENT WORN BY THE OFFICERS OF THE ROYAL NAVY.

Admiralty-Office, 20th March, 1832.

Admirals of the Fleet.—Coat—Blue cloth, with a scarlet cloth stand-up collar, with two-inch lace round the top and front; a slashed sleeve with blue three-pointed flap and three buttons and holes; a red cuff, with two-inch lace, of the Navy pattern, round the top and down the front edge; pocket flaps with three points, and a button under each point; the body of the coat lined with the same cloth, and the skirts lined with white kerseymere; two rows of buttons in the front, ten buttons in each row; the two rows to be three inches apart from the front of the button-hole to the centre of the button; the skirt to begin at

one-sixth of the circumference from the front edge, two buttons on the hips, and two buttons on the bottom of the plait; the button to be raised gilt, one inch in diameter, indented with a round rim, and within the rim an anchor and a cable, and a crown over between two wreaths of laurel; two gold epaulettes, with forty bullions each, over a bonnet and a crescent, and edging to the strap, with silver anchor and crown and three silver stars, two stars on the crescent, and one star above.

Waistcoat—single-breasted, white cloth or kerseymere, with buttons half-inch diameter, of the same pattern as the coat.

Trowsers—blue cloth, with the gold lace of the same width as that on the coat down the outside seams.

Cravat or Stock—black silk.

Hat—cocked; the flaps ten inches in the back, eight inches and a half in the front, six inches at each corner; bound with gold lace, two inches and a half wide, showing one inch and a quarter on each side, with a black silk cockade six inches wide; looped with six gold bullions three and a half eighth inches wide, and the two centre twisted, with a button of the same size and pattern as the coat, and tassels, with five gold and five blue bullions each.

The Sword, Belt, and Knot—Hilt, solid: half-basket guard, with raised oars and crown and anchor badge, lion-head back piece, white fish-skin gripe, bound with three gilt wires; outside length, five inches and three quarters; inside length, four inches and a half.

Blade—slightly curved, with a round back, thirty-one inches and a quarter long, one inch and three-eighths wide at the shoulder, with a double-edged spear point.

Scabbard—black leather, top locket plain, four inches long, with plain broad hook, threaded chape six inches long, horse-shoe button; the hilt and mountings of brass, lacquered.

Belt—black patent leather, frog shoulder belt, two inches and a quarter wide, with brass regulating buckle and loop, to be worn under the waistcoat.

Knot blue and gold rope, twenty-three inches long, with ditto ditto vellum basket-weave head, and twelve gold bullions, a piece of the same sort of cord, fourteen inches and three quarters long, is fixed to the hilt to which the knot is affixed.

Admirals.—The same as the foregoing, but with three stars only on the epaulettes.

Vice-Admirals.—The same, with two stars on the epaulettes.

Rear-Admirals.—The same, with one star on the epaulettes.

Commandores of the First Class, Captains of the Fleet when not Flag Officers and First Captains of Ships.—The same, but with epaulettes of Captains above three years standing.

Captains.—The same, but the lace on the collar and cuff to be one inch and a half wide, and the buttons to be without the laurel leaf; the epaulettes of those of three years standing to have a single anchor and crown, and of those under three years, to have the anchor alone.

The hats the same, but bound with black silk, instead of gold lace, looped with four gold bullions, the two centre twisted.

Commanders.—The same as Captains, but their epaulettes are to be without either the crown or anchor.

Lieutenants.—The same, with the lace one inch wide, and one epaulette on the right shoulder of the same description as Commanders, and a strap on the left shoulder similar to the strap of the epaulette.

The loop of the hat to be of two gold bullions twisted.

Master of the Fleet.—The same as Commanders, but the coat to be single-breasted at angles with the skirts. Gold lace on coats and trowsers of the same width as Commanders; and buttons, cocked hat, sword, and sword-knots, also the same as Commanders.

Physician.—The same, but with nine buttons on the front, to be placed three and three.

Secretaries to Commanders-in-Chief.—The same, but with eight buttons in the front, to be placed two and two.

Secretaries to Junior Flag Officers.—The same uniform as Pursers, or the uniform of the rank which they may hold.

Masters.—The same as Lieutenants, but the coat to be single-breasted at angles with the skirts. Gold lace on coats and trowsers of the same width as Lieutenants; and buttons, cocked hats, swords, and sword-knots also the same as Lieutenants.

Surgeons.—The same as Masters, but with nine buttons on the front, to be placed three and three.

Pursers.—The same as Masters, but with eight buttons on the front, to be placed two and two.

Second Masters.—The same as Masters, but without epaulettes, or gold lace on the trowsers. The lace on the coats to be three quarters of an inch wide.

Assistant Surgeons.—The same as Surgeons, but without epaulettes, or gold lace on the trowsers. The lace on the coats to be three quarters of an inch wide.

Captain's Clerks and Clerks to Secretaries.—The same as Pursers, but without epaulettes, or gold lace on the trowsers. The lace on the coats to be three quarters of an inch wide.

Undress Coats, Trowsers, Great Coats, and Cloaks.—All officers are to wear as undress a short blue single-breasted great coat, with a stand-up collar: Second-Masters, Assistant-Surgeons, Clerks, Mates, and Midshipmen wearing such coats, are to be distinguished by one row of gold twist on each cuff; Lieutenants, by one row of gold lace, a quarter of an inch wide, on each cuff; Commanders, by two rows of such lace on each cuff; and Captains, by three rows of such lace on each cuff.

If Flag Officers shall, under similar circumstances, think proper to wear coats of the same description in lieu of the proper uniform, they are to wear their proper epaulettes upon it.

All undress coats and great coats to have the appropriate button of the rank of the respective officers, which is to be placed according to regulation.

All officers may wear in undress at sea, a round jacket without skirts, with their appropriate buttons, and a round black hat, with a narrow black silk band and a black buckle, and a black silk or leather cockade, with a loop of the same material and half the width of the lace of their respective coats, or if they have no lace on their coats, of black silk ribbon (except Midshipmen, Masters' Assistants, and Volunteers, who are to have a loop of gold twist, as before stated;) or a blue cloth cap, with a band round it, of half the width and material of the lace of their coats; officers who have no lace to their coats, who now wear gold bands, may have a band of gold lace, half an inch wide, round their caps; other officers are to wear such bands as at present.

On all occasions of Full Dress, Officers shall wear White Trowsers over boots between the 1st of May and the 14th of October, and Blue Trowsers between the 15th of October and the 30th of April.

Whenever blue trowsers are worn in full

dress, those of Commissioned Officers, and of Warrant Officers ranking with Commissioned Officers shall have gold lace of the same width as that of their coat down the outside seams.

In undress, Blue Trowsers are to be worn without lace; but Officers are at liberty, in warm climates, or on the Home Station, in the summer months, to wear White Russia Duck Trowsers.

The uniform cloaks and great coats of the Royal Navy are to be blue, lined (when lined) with blue or white.

Patterns or drawings of each of the before-mentioned articles of dress are to be seen at this Office, and at the Office of each Port Admiral.

Articles of Uniform, which have been made of a different pattern from the foregoing, may be worn till the 1st of April, 1833, but no longer.

Mates.—Coat—blue cloth, lined with white serge, edged with white cloth, stand-up collar, with a button and button-hole of one quarter of an inch wide, gold lace on each side of the collar; single-breasted at angles with the skirts; blue round cuffs; nine buttons down the front, three on each cuff and pocket, with corresponding blue twist button-holes, and three buttons in the folds of the skirts. Waistcoat, Cravat or Stock, Buckles, Hat, and Sword, to be the same as Lieutenants.

Gunners, Boatswains, and Carpenters.—Coat—blue cloth; if lined, to be with serge,

fall-down collar, blue lapels to button across, and round cuffs; nine buttons on the lapels, and three on each cuff and pocket, with corresponding blue twist button-holes and three buttons in the folds of the skirt. Plain gilt buttons, with an anchor and cable engraved thereon. Waistcoat, white; cravat or stock, black; hat, cocked, bound, and looped with black silk; sword, of the same pattern and length as commissioned officers, but the back piece of the handle is to be plain, with a flute round the top and down the back, with a black fish-skin gripe bound, and with three gold wires; the etchings on the blade not blued or gilt; sword knot, of blue silk, mixed with gold fringe, but no bullion; sword belt, blue silk or black leather, same size and shape as commissioned officers.

Midshipmen.—The same as *Mates*, with a white turn-back on each side of the collar, but the coat not to be edged with white, nor to have the gold button-hole; swords, of the same pattern as Lieutenants, but of such length as may be convenient.

Volunteers of the First Class.—The same as *Midshipmen*, but instead of the white turn back, a button-hole of white twist on the collar, with a corresponding button, and to wear dirks instead of swords.

Masters' Assistants and Volunteers of the Second Class.—The same uniform as *Volunteers of the First Class*, and the button-hole on the collar to be blue twist.

By Command of their Lordships.

GEORGE ELLIOT.

PROMOTIONS AND APPOINTMENTS.

From the Naval Papers.

PROMOTIONS.—*Captains*, T. L. P. Langhorne, G. Smith. *Commanders*, W. Neame, E. Stanley. *Lieutenants*, C. J. F. Campbell, J. Hay, J. Langworthy, A. Murray.

APPOINTMENTS.—*Captains*, M. H. Dixon, Ranger; W. Walpole, Pallas. *Commanders*, H. Bolton, Coast Guard, Ireland; F. V. Cotton, Racehorse; J. Drake, Britannia; T. Hastings, Excellent; W. H. Haswell, F. D. Hutchison, and E. R. P. Mainwaring, Coast Guard, Ireland; H. Parker, Coast Guard; Lord E. Russell, Nimrod; F. Williams, Champion. *Lieutenants*, J. Anderson, Nimrod; W. E. Amiel, Kingston Sem.; H. Bagot, Excellent; J. Barnes, Lump's Fort Sem.; E. Bedford, Caledonia; D. Bolton, Winchester; C. J. Bosanquet, St. Vincent; J. Branwell, Haslemere Sem.; W. Broadwater, Chelsea Sem.; O. H. J. Callaghan, Godalming Sem.; T. Caswell, Coast Guard; W. B. Pabian, Guildford Sem.; H. Garrett, Midhurst, Sem.; T. H. Holman, Harpy Rev. Cutter; W. Hosenason, Excellent; J. Johnson, Conway; R. N. Kelly, Coast Guard, Scotland; A. L. Keeper, Nimrod; D. Moseberry, Ariadne; J. M. Nott, Excellent; H. C. Otter, Ocean; A. R. L. Passingham, Sheldrake; H. B. Richards, Excellent; S. Richmond, Isis; J. Smith, Ranger; E. Stopford, Pickle; J. R. Thomas, Compton Down Sem.; T. Tribe, Cooper's Hill Sem.; B. White, Cobham Sem.; G. Williamson, Bedhampton Sem.; J. R. Wilson, Putney Sem.; C. Wilmot, Putersfield Sem. *Master* D. M'Creight, Nimrod. *Mates*.—Allen, Admiralty Yacht; T. B. Baily, Malville; C. Martelli, Ocean; W. C. F.

Mercer, Victory; C. F. Robinson, Harpy Rev. Cutter. *Midshipmen*, R. Pipon, Talavera; S. Stirling, Eagle Rev. Cutter. *Surgeons*, T. Barnes, Pension; Dr. R. Boyd, Trinculo; G. E. Forman, Excellent. *Assistant-Surgeons*, Aitchison, Hasl. Hosp.; Dr. C. Alison, Victory; W. Houghton, Blossom; J. B. Hutton, Conway; J. M'Beau, Investigator; A. M'Kechnie, Nimrod. *Purser*, J. Archdeacon, Excellent; J. G. Lean, Nimrod. *Clerks*, W. Dunn, Rattlesnake; J. M'Lellan, Astrea; E. Rowe, Excellent; R. S. Stokes, Conway; T. Turner, Samarang.

ROYAL MARINE CORPS.—*Second Commandants*, Col. H. P. Lewis, Plymouth; Col. G. P. Wingrove, Woolwich; Lieut.-Col. T. Adair, C. B. Chatham; Lieut.-Col. E. Lawrence, C. B. Chatham; Lieut.-Col. G. Lewis, Portsmouth. *Lieut.-Colonels*, J. M. Beavans, W. Conolly, J. Nicholson, G. Beatty, Chatham. *Majors*, J. Cole, Woolwich; E. Baillie, J. Owen, J. Robyns, P. Jones, Portsmouth. *Pay Captains*, Wilkinson, Woolwich; J. Moore, J. Williams, Chatham; J. Walker, Plymouth; F. Waters. *Captains*, W. S. Dodd, Plymouth; S. H. Ellis, San Josef; J. Norris, Plymouth; J. Nicholas, Plymouth; T. K. Morris, Portsmouth; S. Garmston, Portsmouth; J. H. Stevens, Artillery; W. Taylor, Portsmouth; W. Ford, Portsmouth. *First Lieutenants*, T. Fynmore, Conway; W. Wood, Woolwich; D. W. James, Woolwich; T. M'Leoth, Chatham; T. Stevens, Portsmouth; P. M. M'Killar, Woolwich. *Second Lieutenants*, R. M. Curry, Plymouth; Collins, Fraser, Portsmouth; R. W. Hawkins, Woolwich.

FOREIGN MAILS.

For
BOMBAY—Marquis of Hastings, *Clarkeon*, from West India Docks, 15th May.
CALCUTTA—Coromandel, *Boyes*, from West India Dock, 1st May.
CAPE OF GOOD HOPE—Olive Branch, *Anderson*, from St. Katherine's Docks, 4th May.

For
MADRAS—Madras, *Beach*, from East India Dock, 1st May.
MAURITIUS—Welcome, *Paul*, from London Dock, 10th May.
SWAN RIVER—Cygnet, *Rolls*, from London Dock, 15th May.

Births.

On Sunday the 18th of March, at Bedhampton, the lady of Commander M. Matthews, of a son.

At Ann's Hill, the lady of J. Ayles, Esq., of H.M.S. Madagascar, of a son.

On the 13th of March, at Cambletown, of a son, Mrs. Saml. Motley, wife of Lieutenant Motley, R.N.

On the 31st of March, the lady of Captain Swale, R.N., of a son.

At Cornwood, the lady of Lieut. G. Thomas, of a son.

At her father's residence, in the Gun-wharf, Plymouth, the lady of G. Ross, Esq., H.M.S. Samarang, of a daughter.

On Monday the 2d of April, at Romsey, the lady of Lieut. Parker Bedwell, R.N., of a son.

On the 10th of February last, at Malta, the lady of Dr. Irvine, of H.M.S. St. Vincent, of a son.

At Dawlish, the lady of Sir E. Astley, R.N. of a son.

At Cheltenham, the lady of the Hon. F. Maude, R.N., of a son.

At Mylor, the lady of Captain Sullivan, R.N. of a son.

At Farringdon, the lady of Lieut. Johnson, of a son.

Marriages.

On the 29th of December last, at Bahia, at the residence of His Majesty's Consul, W. H. Ryall, Esq., Lieutenant of H.M.S. Druid, to Elizabeth Frances Parkinson, eldest daughter of John Parkinson, Esq., His Majesty's Consul in that province.

On Wednesday the 21st of March, Captain Pearson, of Ulverston, to Margaret, daughter of Mr. Rigby, of the Lancaster Tavern, Red-cross-street, Liverpool.

On the 5th of April, at St. Mary's, Bryanton-square, Lieutenant James Small, R.N., to Fanny, second daughter of Edward Horton, Esq., of Baker-street, Portman-square.

On the 12th of April, at St. John's Church, Lambeth, James Dun, Esq., purser in the Royal Navy, and of Stamford-street, Blackfriars, to Lucy, only daughter of the late Richard Dore, Esq., formerly His Majesty's Deputy Judge-Advocate of the colony of New South Wales.

On the 7th of April, Mr. Thomas Dale Gulliver, R.N., to Sarah Thompson, daughter of James Brand, Esq., of Kingsland.

Lieutenant Charles Jenkin, of the Royal Navy, of Stouting Court, Kent, to Henrietta Camilla, daughter of the late Hon. Robert Jackson, of the island of Jamaica.

On Tuesday the 10th of April, at Woodham, Captain Carleton, son of the late General Carleton, to Rosamond, second daughter of the late Lieutenant-General Orde, of Westwood Hall, Northumberland.

Deaths.

A few days since, Commanders John Taylour and Thomas Bookless; and Lieutenants Henry Hodder and John Richards, R.N.

At Kingswill, Landulph, Cornwall, Mr. John Roberts, at the advanced age of 95 years, father of Thomas Roberts, Esq., master-shipwright of His Majesty's dock-yard at Plymouth.

On the 13th of March, in London, T. Aldridge, Esq., purser, R.N., and many years secretary to Admiral Douglas, at North Yarmouth.

Suddenly, at his residence at Falmouth, on the 23d of March, Lieutenant L. Peters, R.N. He rose in the morning in good health, but within a short time was a corpse.

On the 21st of December, aged 34, Commander Henry John Hatton, R.N., one of the Gentlemen Ushers of His Majesty's Privy Chamber.

On Monday the 16th of March, at King's Terrace, Southsea, regretted by all who knew him, Captain William Field, R.N., a deserving and meritorious officer, having served his king and country faithfully fifty-two years. As a Christian, he was a truly good man, a most affectionate husband, and an indulgent kind parent. He has left a wife and large family, to lament his irreparable loss to the end of their lives.

At Bodmin, Lieutenant John Francis Cook, R.N. (1815), leaving a wife and six children.

We regret to announce the death of Captain William St. Clair Wemyss, under very melancholy circumstances. Captain Wemyss had set out from Skinburness to cross the Wampool, on horseback, when the tide was out, in order to reach Cardornock, but getting into deep water, he turned back, and after several times galloping through the water, he dismounted, when his horse made for the land, and the unfortunate gentleman sunk, to rise no more.

At Durham, Major Thomas Hooper, on the retired full-pay of the Royal Marines.

On the 5d of April, suddenly, at his residence, Sibb Heddingham, George Fowke, Esq., Rear Admiral of the Red. He attended divine service, both morning and evening, on Sunday, and retired to bed in apparently good health, but was taken ill about three o'clock in the morning, and was only heard by Mrs. Fowke to exclaim, "Oh, my back!" and instantly expired. The cause his attributed by his medical attendants to an affection of the heart.

Suddenly, at Ilfracombe, Mr. J. Hooper, formerly a warrant-officer in His Majesty's Navy, and for many years harbour-master of that port, aged 70.

On the 12th of March, on board H.M.S. Alfred, off Napoli di Romania, Lieutenant Alexander Baring, fourth son of Alexander Baring, M.P.

Lately, at sea, Mr. G. Wingham, Master, R.N. (1806).

Recently, in London, Mr. John Martyn, Master, R.N., of the disease named cholera.

Lately, at Corvulle, near Newcastle-upon-Tyne, Lieut. Wm. Selby, R.N.

At the Royal Hospital, Plymouth, Mr. John Osman, Master, R.N. (1795), after a long and painful illness.

On the 27th of March, on board His Majesty's packet Mauret, on the passage from Lisbon to Falmouth, Mr. Robt. Penman, of the Revenge, eldest son of Mr. Penman, of the Sansparad sheer bulk, at Plymouth.

First Lieutenant Thomas Stockwell, of the Royal Marines, who recently returned favoured from Fernando Po, fell a victim last week at Woolwich, from the effects of a disease contracted at that ill-fated and deadly island, whence he returned to this country in company with the Landers, the noted African travellers.

THE
NAUTICAL MAGAZINE,

&c.

JUNE, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

38. THE DOLLABARATS SHOAL. *North-east of I. St. Mary, Azores.* Lat. $37^{\circ} 13' N.$ Long. $24^{\circ} 54' W.$ *The sea breaks on it.*—THE TULLOCH ROCKS, *reported in Lat. $37^{\circ} 25' N.$ Lon. $24^{\circ} 45' W.$ Said to be above water.*

Extract of a letter from Captain J. D. Markland, C. B. of H. M. S. Briton, dated 20 Feb. 1832.

“I hove to for the night between St. Michael’s and St. Mary’s, being anxious to see the Formigas rocks; and soon after daylight, with a thick morning, we fell in with a very dangerous shoal breaking heavily, and, as the fog cleared away, we saw the Formigas. When the rocks and the shoal were in one, the shoal bore from the rocks S.S.E. distant about three miles. The Formigas are properly placed. The island of Terceira has two harbours, Angra and Port Praya, the latter of which is the best. My opinion is, that a frigate should never anchor in Angra; but during summer, she may anchor outside the harbour.”

The above extract affords a satisfactory proof that the Dollabarats shoal is correctly placed on the charts, although the existence of it has once been doubted. Mr. Purdy tells us, in his valuable Atlantic Memoir, p. 228, that this shoal, after being thus omitted, was seen by P. Dollabarats, commander of the Ship Marie de Sebourre, in 1788, on his return from Martinique to Bayonne, from whence the name has been derived.

It is to be wished that we could give as good an account of the Tulloch rocks, named after Captain Tulloch, of the brig Equator, of Portsmouth, who first reported them as seen in 1808. We learn from Mr. Purdy, that they have been seen several times since that period; and, among others, by the Ayrshire, from the Clyde to Demerary. Mr. Ferguson, the mate of that ship, gives their situation as about nine miles E.N.E. from the Formigas. We

have before us the copy of a letter of Captain Henderson, commanding the Ship Fortescue, who states, that he saw the Tulloch rocks on the 17th of April, 1829, in about the same position as before reported, but, unfortunately, he did not try for soundings. On the application of the Trinity House, H.M.S. Ariadne, commanded by Captain F. Marryat, was sent in search of these rocks, in the summer of the same year; but, after taking her departure from the Formigas, and steering a course which would have carried her upon them, had they existed in their reported situation, nothing was seen of them. The boats of the Ariadne were also sent in search of them, in charge of the proper officers, and, although the weather was fine, and every thing favourable to their discovery, they could not be found. We are, therefore, compelled to let the Tulloch rocks remain on the list of reported *vigias*; and the recent loss of the Zillah in that neighbourhood, stated in our Miscellany, is a sufficient caution to navigators to beware of undiscovered dangers near the Formigas.

39. OTTER'S SHOAL. *Indian Ocean.* Lat. $33^{\circ} 43'$ S. Long. $36^{\circ} 30'$ E. *No Soundings. Communicated by J. W. Norie, Esq.*

Extract of a letter from Mr. R. Blakiston, late master of the Anna Maria :—

“January 15th, 1830, at 8h. 30m. A.M. observed the water discoloured, bearing from the ship E.N.E. about one third of a mile, which I have no doubt is shoal water; the spot appears very small, and, from the best of my judgment, there may be 10 or 12 fathoms water on it. By means of several lunar observations and chronometers deduced from the Cape, I make it to lie in lat. $33^{\circ} 43'$ S. (mer. alt.) and long. $36^{\circ} 30'$ E. I had not an opportunity of sending a boat to sound upon it, but there can be no doubt as to its existence, and I consider it to be what is termed the *Otter's Shoal*, doubtful in all charts that I have as yet seen, and I should advise all commanders to keep a good look-out when near it, as, in heavy weather, I should think there will be a dangerous sea.”

40. L'AIGLE ROCK OR SHOAL. *Coast of Patagonia.* Lat. $51^{\circ} 45'$ S. Long. $65^{\circ} 10'$ W. *Soundings, a few feet water, rocky bottom. From M. M. Saloy, commanding the French brig of war L'Alert.*

This rock is reported by Captain Saloy to have been seen by several merchant vessels, one of which lowered a boat, and sounded on it. A depth of only a few feet water was found, and the surface of it, according to the lead, seemed to be very uneven. Captain Saloy also reports that the sea always breaks on it. The position of this rock renders it exceedingly dangerous to vessels going round Cape Horn into the Pacific, as it lies nearly midway between the Falkland Islands and the South American coast.

41. SHOAL OFF CAPE PALMAS—*West Coast of Africa—*
The ship struck on it.

“ December 16th 1830, his Majesty’s Ship Athol was running along shore in 12 fathoms water, at the distance of 3 or 4 miles from the land, and 1½ mile from the outermost breakers, when she struck on a sunken rock; the bearings from which were,

Grand Cape Palmas Town, N. W. westerly

A round rock above water, E. by N.

A clump of trees on the Eastern extreme of the land, E½S.

} Variation about
 19° W.

“ There were 10 fathoms on each side of the ship—*Admiralty, May 6, 1831.*”

42. DUCIE ISLAND. *Pacific. The N. E. extreme is in Latitude*
 24° 40' 20" S. Longitude 124° 45' 38" W. Var. in 1827,
 6° 54' E.

Ducie Island is of coral formation, of an oval form, with a lagoon in the interior, partly enclosed by trees, and partly by low coral flats, scarcely above the water’s edge. The height of the soil above the island is about twelve feet, above which the trees rise fourteen more, making its greatest elevation about twenty-six feet from the level of the sea. The lagoon appears to be deep, and has an entrance into it for a boat, when the water is sufficiently smooth to admit of passing over the bar. It is situated at the S. E. extremity to the right of two eminences that have the appearance of sandhills. The island lies in a N. E. and S. W. direction; it is one mile and three-quarters long, and one mile wide. No living things, birds excepted, were seen upon the island; but its environs appeared to abound in fish, and sharks were very numerous. The water is so clear over the coral, that the bottom can be seen when no soundings can be had with 30 fathoms of line; in 24 fathoms the shape of the rocks at the bottom was clearly distinguished. The corallines were of various colours, principally white, sulphur, and lilac, and formed into all manner of shapes, giving a lively and variegated appearance to the bottom; but they soon lost their colour after being detached.

The sand mounds raised upon the barrier are confined to the eastern and north-western sides of the lagoon, the south-western part being left low, and broken by a channel of water. On the rocky surface of the causeway, between the lake and the sea, lies a stratum of dark rounded particles, probably coral, and above it another, apparently composed of decayed vegetable substances. A variety of evergreen trees take root in this bank, and form a canopy almost impenetrable to the sun’s rays, and present to the eye a grove of the liveliest green. The island was lost sight of at the distance of seven miles.

43. PAKEFIELD LIGHT, NAVIGATION OFF LOWESTOFT, COAST OF
 SUFFOLK.

Notice to Mariners.

“ Trinity-House, London, 4th May, 1832.

“ Notice is hereby given, That, in conformity with the intention expressed in the Notice from this House, bearing date 11th July, 1831, a Light-House has been erected near Pakefield, in which a *fixed* light will be exhibited on the evening of the 15th inst. and thenceforth continued every night from sun-set to sun-rise.

"This light is intended to lead between the Barnard and Newcome Sands into Lowestoft South Roads, and when vessels are in the Fairway of the Channel, the light will bear N.W.—Vessels working, and standing either towards the Barnard or Newcome, must immediately tack on losing sight of the light.

"Having arrived in Lowestoft South Roads, and intending to proceed to the northward, vessels should bring the low light at Lowestoft to bear N.E. by N. and then steer for it; keeping it a little on the larboard bow; and on approaching Lowestoft Ness, they must haul out towards the Stanford floating-light, and thence proceed for Yarmouth Roads.

"And in pursuance of the further intention expressed in the said notice of the 11th July, 1831, the low light at Lowestoft will be exhibited on the evening of the said 15th inst. from a new Light-House, and will, when in a line with the upper light, bearing N. by E. lead vessels into the south entrance of the Stanford Channel, after which a bearing of the Stanford floating-light must be used as heretofore in navigating through that Channel.

"By order, "J. HERBERT, Secretary."

44. TEMPERATURE OF THE OCEAN.

We are indebted to the kindness of Captain Prescott, of the Royal Navy, for the following interesting communication:—

"To the Editor of the Nautical Magazine.

"My dear Sir,

"On my passage from England to Rio Janeiro, in His Majesty's Ship Aurora, on the 21st August, 1821, by means of a sea-gauge, constructed on Dr. Brewster's principle, we took up water from the depth of 117 fathoms, of the temperature of 58° Fahr.; the temperature of the surface being at the same time 82°, and that of the air 83°. This was at noon, and as the weather remained calm, in the afternoon we ascertained the temperature at various depths, as stated below, that of the air, and of the water at the surface, remaining as before.

At 30 fathoms	71°	}	Lat. 12° 22' N. Long. 24 04 W.
60 ..	61		
90 ..	57		
110 ..	58		
220 ..	60		

You will observe, that the minimum of temperature was at 90 fathoms, and the water at that depth 26° cooler than the air. We used it to cool our wine for dinner, which it did effectually, producing on the glass the refreshing appearance of ice. I subjoin the result of various subsequent trials, in which you will perceive that we never again found so great a difference of temperature.

Date.	Lat.	Long.	Air.	Surface.	30 Fms.	60 Fms.	90 Fms.
Jan. 14, 1822.	14° 20' S.	37° 56' W.	82°	81°	79°		69°
May 30, ..	29 01 S.	46 55 W.	72	74	72	71°	69½
Nov. 18, ..	24 30 S.	89 23 W.	68	68	67		65
.. 25, ..	32 40 S.	82 16 W.	69	69	68		62
Dec. 5, 1823.	20 15 N.	110 40 W.	75	78	77	69½	66
March 4, 1824.	13 49 N.	93 52 W.	80	80½	76		62
July 15, ..	29 31 S.	89 48 W.	65	62	66		63½
Oct. 18, ..	36 09 S.	80 35 W.	55½	55	55½	54	53
Jan. 24, 1825.	34 58 N.	37 39 W.	64½	66	65	65	62

"Should you deem the above extract, from my private journal, of sufficient importance to merit insertion in your instructive and useful work, you will oblige me by placing it there; and, wishing you every success, I remain,

"My dear Sir,

"Very sincerely yours,

"J. PRESCOTT."

Farnham, Surrey,
May 2, 1832.

45. ANCHORAGE OFF ASCENSION.

We are indebted to the kindness of John Bennet, Esq. Secretary to Lloyd's, for the following extract of a Letter from Captain Hunt, of the Ship Atlas, dated 19th March, 1832, off the Isle of Wight.

"The Island of Ascension being both convenient and safe for ships homeward bound, to approach, when in want of provisions, water, or repairs, and Captain Bate and the officers of that establishment most attentive and ready to relieve the wants of ships of any nation resorting thither, and their means to do so, and to render assistance, being superior to any other place between the Cape of Good Hope and the Ports in Europe, it is to be regretted that accidents so frequently happen to vessels touching there. In most cases I am persuaded they have occurred through a want of knowledge as to the position of the Rock and Reef, lying N. W. of the anchorage. The following notice, therefore, may prove useful to strangers who have occasion to call there, should your Committee consider it worth posting for general information:—

"The anchorage off Ascension is in Sandy Bay, a prominent Rock, on which is a Fort, forming its western boundary. Ships may anchor in any part of this bay, in moderate depths of water, as the bottom is clear, and free from danger.

"Commanders of ships coming from the eastern side of the Island, intending to anchor or cruise off the settlement until they have obtained supplies, must observe, that no safe anchorage can be found to the *westward* of the Fort, (above named,) neither is the shore safe to approach within a mile and a half of it, to the *westward* of that Fort.

"The best guide to clear the Reef and Rock lying to the N. W. of the anchorage, (and on which so many vessels have grounded,) is to keep the Houses and Barracks open to the eastward of the Fort, and never to shut them all in with, nor open them to, the *westward* of the Fort, unless the distance from the land be at least a mile and a half. In the latter case they would be in great danger of striking on the Reef above-mentioned, the Spit, or Rocks of which, lie nearly a mile from the nearest point of the shore.

"A buoy, checquered black and white, is to be laid on the Spit. When this buoy can be seen, a vessel should never pass to the *westward* of it, unless her distance from the land be at least one and half mile. The sea does not always break upon this rock, but there is always a considerable swell passing over it.

"Ships approaching Sandy Bay from the western side of the Island, must be careful not to get nearer to the land than a mile and a half, until the Houses and Barracks be opened to the eastward of the Fort. They may then stand into Sandy Bay to their own depths, free from all danger.

"By attention to the above observations, it will be impossible for ships to meet with accidents, for on all other parts of the Island the coast is bold, and may be approached to within a cable's length."

46. DEPTH OF THE OCEAN.

"To the Editor of the Nautical Magazine.

"SIR,—The depth of the ocean is a subject on which many opposite opinions have been advanced; and, with the hopes of determining so interesting a problem, a few years ago I constructed a machine, somewhat resembling that by Mr. Massey, but differing from his, in not requiring the assistance of a line.

"The principal obstacles with which I considered that it would have to contend were sea-weed, tides, and under-currents, which latter might sweep it away from the place where it was sent down. However, regardless of these, I set to work, and completed the machine. My first experiments with it were made in shallow water; and, to ascertain its correctness, I attached it to a line that was marked. The results were most successful; and I was delighted to find it answer so well in my operations between Spithead and Cowes, for I invariably found the depth of water given by the machine, precisely the same as that by the measured line.

"After being satisfied that my plan was likely to succeed, I submitted it to the Admiralty, and to my friend Captain Mudge, who communicated it to a scientific friend of his at Woolwich. This gentleman soon after enclosed me an etched plan of the apparatus, with his remarks on it, informing me, at the same time, that the celebrated Dr. Desaguliers had made an attempt something similar to that which I had proposed, with a glass globe—but that, after various essays, he could never recover the machine. This he attributed to drift, or to the bursting of the globe from excessive pressure; but, as the trials had been made under many unfavourable circumstances, no positive inference could be drawn from them.

"The object I had in view could in no way benefit navigation, but was merely to ascertain the depth of the ocean. As some of your numerous readers might have time and opportunity for making the experiments, I beg to forward my plan, for insertion in your useful little work. The expense attending the construction of the machine is very trifling, and the loss of lead, which is used as a weight to sink it, is also of no consideration, when a question of so much interest is to be solved.

"The following is an explanation of the parts of the machine. See drawing at commencement of the Number.

- | | |
|----------------------------------|--------------------------------|
| A The vane and flys | F Float glass globe |
| B Two connecting swivels | G Catch with shoulders |
| C Perpetual screw | H Clasps disengaged by arms at |
| D Plate for the wheelwork | I Connected with the rod I I I |
| a b } Wheels of different diame- | K Lead to sink the whole |
| c d } ters, similar to Massey's. | L Foot to rod, in case of oozy |
| E Suspension ring | bottom. |

"It will be readily seen, that when the weight is disengaged from the rest of the machine, by the opening of the clasps, caused by the rod striking the bottom, it will remain there, and the globe will carry the other part to the surface.

"I am, Sir, your obedient servant,

"JOE SOUNDINGS."

We are much indebted to our ingenious friend for his communication, and have inserted his plan, not with the hopes of its being extensively useful, as that is physically impossible; but with the idea that it may lead to experiment and discovery.

MARITIME PAPERS, REVIEWS OF VOYAGES, &c.

I.—*Sargasso Weed.*

It is well known to seamen, and others who have crossed the Atlantic ocean, that a certain part of that sea is generally covered more or less with a particular species of weed, called gulf-weed, but the reason of its accumulating there, and its origin, have given rise to much difference of opinion. The gulf-weed, or *Fucus natans*, (which may be translated floating weed,) of botanists, is said to have been first met with by the early Portuguese navigators, when they extended their voyages to the south, in quest of discovery. It is related, that they found a part of the ocean, to the north and north-west of the Cape Verd Islands, profusely covered with it; and from the peculiar resemblance which the little nodules on it bear to a small species of grape, they gave it the name of *Sargaçao*, from their word *sarga*, the name of this fruit. From thence our term Sargasso is derived, and the part of the ocean in which it is found is usually called the Sargasso sea. The Sargasso weed is also familiarly called tropical grapes, from being found in the vicinity of the northern tropic, but it is most generally known by the name of Sargasso or gulf-weed. The Portuguese likewise complained that the progress of their ships was impeded by it, and that it was with difficulty they made their way through it.

Among the early navigators who mention the Sargasso weed, is the celebrated Columbus, as we find it particularly noted in his journal, lately published by Senor Navarrete. It appears also, that the vast quantities of it which he met with, afforded his superstitious and terrified crew another cause of complaint, among the many which they urged against his continuing on his first voyage; for it is related by the son of this great man, that they were so much frightened by it, that they imagined they were among rocks, and endeavoured, without success, to obtain soundings. Their apprehensions of danger were still further increased, by the progress of the ship through it being impeded, and by their finding a living crab among the weed. It is also related, that Thevet and De Lery, in their voyage from Brazil, were fifteen days in passing through some extensive fields of it, which they met with near the northern tropic, and that they were obliged to cut their way through it.

These accounts of the early navigators are by no means exaggerated, being fully confirmed by modern observation. The difficulty, however, is, to assign the particular place of its growth, and to account for its appearance in such quantities, to the north

west of the Cape Verd Islands. On this subject, Sir Hans Sloane, in his History of Jamaica, affords us some information. This learned writer quotes several authorities for its being seen on the coast of Guinea, and near the Cape Verd and Canary Islands, as well as on the island of St. Domingo, in the West Indies; in addition to which, he met with it on the coast of Jamaica. He also asserts, that it is carried with the currents through the Gulf of Florida, along the coast of North America, in great abundance, where he has gathered it, and found it to contain small crabs, &c. This opinion is general among sailors, who also consider that it is carried out into the Atlantic ocean by the effects of the gulf-stream. The conclusion at which the above author arrives, respecting its origin, is simply, that it is very likely to grow as well at the Cape Verd and Canary Islands as among those of the West Indies, and that it is carried to sea by means of the winds and currents in several parts. This appears to be a very rational conclusion, and at once relieves us from the supposition that it grows at the bottom of the sea in which it is found,* according to one writer; although it is by no means unreasonable to suppose that it may grow on one side of the Atlantic ocean as well as on the other. Mr. Purdy, in his valuable memoir and directions for the Atlantic ocean, defines the limits of the Sargasso sea, 'as an eddy situated in point of latitude between the regular equinoctial current, setting to the westward, and those easterly currents put in motion by the westerly winds, commencing a little to the northward of the parallel in which the trade-wind begins to blow,' which at once accounts for its accumulating there. The limits, however, within which it has been met with, extend from the parallel of 20° to about 40° of north latitude, but varying much in position, according to particular winds and currents.

Mr. Turner, in his 'British Fuci,' gives the following definition of the Sargasso weed. "Root an expanded, callous disk; frond from one to two feet long, composed of a slightly-compressed stem, not thicker than small twine; pinnated throughout its whole length with short, simple, subalternate branches, also filiform, and covered with a profusion of oblong or oblongo-lanceolate, midribbed leaves, their margins irregularly serrato-dentate, and their surfaces dotted with dark-coloured, mucifluous perforations, similar to those observable in *F. serratus*, *vesiculosus*, &c. whence what Reaumur considered the male parts of fructification exude. The length, breadth, and form of these leaves, is very variable; they are found, from almost oval to oblong and lanceolate; from

* An assumption which is quite at variance with the known decrease of temperature at certain depths. But Mr. Purdy furnishes us with an instance of a bottle being found near the Azores, that had been thrown overboard in about the latitude of 39° north, and longitude of 65° , the very middle of the gulf-stream. Other instances of the same nature are, no doubt, on record, but the above is sufficient to justify the opinion of seamen, that it may be carried still further to the south-east, till it reaches the Sargasso sea.

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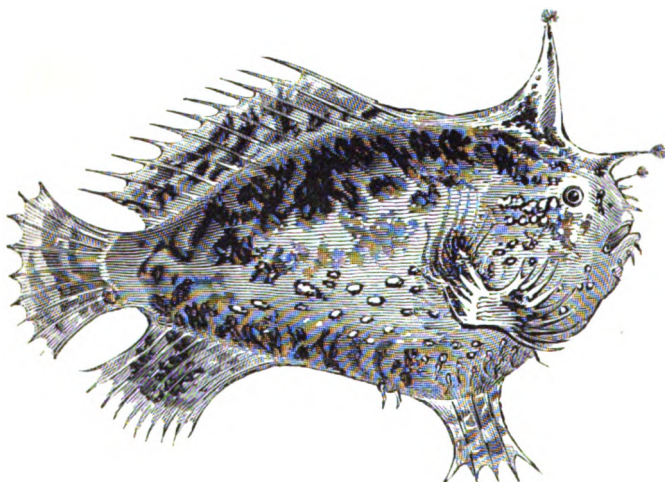
Fish found among the Sargasso Weed.

See Page 177.

PIPE-FISH.
(About half-size.)

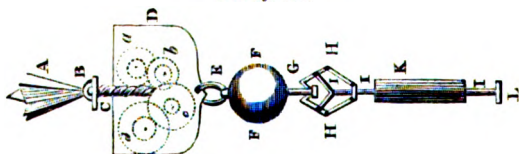


TOAD-FISH.
(Full-size.)



SOUNDING MACHINE.

See Page 174.



their ~~also~~ is produced the fruit, which consists of numerous black, cylindrical, pointed pods, each about two lines long, disposed in a panicle, and supported upon a common peduncle; their surfaces tuberculated, and their points sometimes forked. Besides these, hollow, spherical, or oblong vesicles, placed upon short, flat, dilated stalks, and occasionally tipped with a minute point, are scattered, though in small quantities, over the stem and branches, the largest of them almost equalling in size the berries of juniper, to which they have been well compared. This *Fucus* is very flexible and soft; the substance of the leaves and bladders membranous, thin, and tender, their colour a reddish brown." In classing it amongst British *Fuci*, Mr. Turner expresses his doubts of its being a native of our shores, but has followed Linnæus and other botanists. He considers that there are two sorts, one of which belongs to the shores of the Mediterranean, and the other to the West India islands.

The small fish, at the commencement of this Number, are drawn from some that have been found among the Sargasso weed; the following account of which we have been politely furnished with by Mr. Bennet, of Bulstrode-street.

The large figure represents one of those fishes to which, on account of their uncouth appearance, the name of toad-fish has been popularly given. Under this denomination there have been included many very dissimilar kinds, extreme ugliness being held as alone sufficient for the establishment of an undeniable claim to the title. The present fish, and those nearly related to it, advance, however, peculiar claims to the appellation. Their belly and side fins are borne upon supports which project from the body in the semblance of limbs, their similarity to which is increased by the jointed form they acquire at the point of union of the fin with its support, and still farther by the finger-like appearance of the rays of these fins, which are unconnected by membrane at their tips. This curious structure imparts to these fishes not only somewhat of the outward form of a quadruped, but also a portion of its habits, and they are, accordingly, capable of crawling like toads among the sea-weeds and rocks which they usually inhabit; the side fins, which are placed farther back than those of the belly, performing on each occasion the functions of hinder feet. Nor is this mode of locomotion confined to the water alone; it may, also, be exercised by them on land, for their gill-openings are so small, that evaporation takes place but slowly from within them, and thus the gills are kept moistened, and the circulation of the blood is preserved, even out of the water, for two or three days. So remarkable a deviation from the usual appearance and habits of the class to which they belong, has naturally caused them to be regarded as objects of curiosity; and it is recorded, that living specimens have been successfully

transported from the East to Holland, where they have been sold at considerable prices.

The fishes of this genus, to which Commerson gave the name of *Antennarius*, (on account of the filament which they possess on the forehead,) are met with in the sea of warm climates, in the east as well as in the west. They subsist chiefly on small crabs, to surprise which they hide themselves among the sea-weed, or behind stones. Their flesh is said not to be edible; it may, perhaps, have been rejected, on account of their disgusting appearance, and is certainly too small in quantity to allow of its being important as an article of food. In swimming, they usually gulp down air, and, thus distending their capacious stomachs, enlarge themselves into a rounded half-floating mass, much in the same manner as the globe or balloon fishes. Their nearest affinity is to the fishes known as anglers, with which they agree in the form of their gill-openings and fins, and in the possession of filaments on the head; but the monstrously disproportioned head of the anglers, which is depressed from above downwards, and the enormous opening of their mouth, readily distinguish them from the toad-fishes, whose head is of moderate size, and, like their bodies, compressed laterally. They are either smooth or variously hairy or bristly, and are always destitute of the regular scales with which fishes are generally invested. They are furnished, especially on the lips and the under parts, with numerous short loose processes of skin, which add considerably to their sense of touch. There is great variety in the different kinds in the length of the filament on the head, and its termination is still more varied: in some it is almost simple, as though formed of a single undilated hair; in others, it is surmounted by a small dense globular mass of short filaments; and in others again, it has two, or even three large fleshy processes at its end, not unlike the baits which terminate the fishing filaments of the anglers.

In the species figured, the *Antennarius lævigatus*, the skin is smooth, and furnished with short loose processes; the filament on the head is short, and terminated by a small knob of clustered minute filaments; this is succeeded by two other processes, each resembling a fin supported by a single ray, and fringed, especially towards its upper part, by loose portions of skin; to these succeed the back fin, supported, as usual, by many rays. The colour is pale, irregularly blotched, spotted, and streaked with brown, the markings varying considerably in different individuals; it is also dotted irregularly with white. By these characters it may be known from the other species of the genus, with which it appears to have been associated by Linnæus, under the common name of *Lophius Histrio*. It was first scientifically distinguished by M. Bosc, a French naturalist, who observed it, on his voyage to America, among the Sargasso weed: he described and figured it,

not without some imperfections, in the *Nouveau Dictionnaire d'Histoire Naturelle*. It has since been figured, but not described, by Dr. Mitchell in the *Transactions of the New York Society*; and one very nearly resembling it has been described by Mr. Bennett with a figure, in the *Geological Journal*. The genus to which it belongs is most completely treated of by M. Cuvier, in the *Memoires du Museum d'Histoire Naturelle*.

The other fish, which we have figured, is one of the apparently numerous group known as pipe-fishes, several of which inhabit our own coasts. These, with some allied kinds, are peculiar for the arrangements of their gills, which are disposed, not in rows resembling the teeth of a comb, but in detached lumps ranging in pairs along the gill, bearing bones. On this account, the family has been distinguished by M. Cuvier under the name of *Lophobranches*. The whole of the fishes belonging to it have the body covered with hard plates, instead of scales, and are generally angular in their contour. Among them, the pipe-fishes are distinguished by the great length and slenderness of their bodies, which are not greatly dilated in any part; their snout is also lengthened, and furnished at its extremity with a very small mouth. No group of fishes is more variable, as regards the number of the fins. In all of them the belly fins are wanting; some, like the one before us, have side, back, vent, and tail fins; in others, the vent fin is deficient; in others, the side fins are also wanting; and others, again, have no tail fin; the only fin, with which they are furnished, being that of the back. The several kinds are best distinguished in the first instance, by the presence or absence of the fins, and in the next by the number of the plates investing the body and the tail, to which accessory characters are afforded by the number of the angles exhibited by a section of the body and of the tail.

In the species figured, to which Mr. Bennett has recently given, on account of its residence among the *Fucus natans*, the name of *Syngnathus fucicola*, all the fins, except the ventral, are present; the number of plates, anterior to the back fin, is 14; anterior to the vent, 16; and posterior to the vent, 26; the body is heptagonal, and the tail quadrangular. It is marked across the sides by numerous broad dark bands. As in all the other pipe-fishes, in which the same number of fins exists, the females, after the exclusion of their eggs, bear them about under their tails, in an enlargement, formed for the purpose, under the skin of this part, which is so transparent as to allow of the eggs (as in some of the specimens before us, which were taken in August or September) being seen distinctly through it.

The specimen figured, is a male of about half the usual size of the species. The female differs only by the body and snout being proportionally shorter, and the tail comparatively longer.

II.—*On the Advantages possessed by Naval Men, in contributing to General Science.*

THERE is, probably, no class of society which has more frequent opportunities of adding to the general stock of scientific knowledge, than that composed of persons in the royal and mercantile navy. Their various avocations necessarily carry them to distant regions, many seldom visited; while they not unfrequently have at their disposal various portions of time, which, added together, become considerable, and which might be most beneficially employed in the advancement of general science. It would be the greatest injustice, not to acknowledge the large contributions which have already been made to science, by many naval officers; their well-known works sufficiently attest the importance of their observations and discoveries; but, when we regard the multitude of British ships which traverse the ocean, in every direction, these distinguished individuals only constituted a small fraction of those whose opportunities have been quite as great, if not greater, but who have either altogether neglected them, or have not communicated their observations to the world.

The various sciences which bear immediately on navigation, necessarily claim the seaman's first care, and should constitute those to which he more particularly devotes himself. While, however, his principal attention is devoted to these, he may still, when opportunities offer, materially aid the progress of other sciences, more especially those which may be supposed eventually to contribute to the advancement of navigation. All researches into the composition, temperature, and movements of the sea, come under the latter head; indeed, it may be fairly stated, that a knowledge of the surface currents of the ocean, constitutes an important branch of nautical acquirements. We may, however, inquire how much is really known on this subject, more particularly when we recollect, that the general mass of information, relating to currents, was accumulated before the local attraction of the ship was known to produce the frequently considerable aberration of the needle, which is now ascertained to be the case. It is scarcely too much to say, that every vessel, destined for distant voyages, should be provided with Mr. Barlow's plate, by which the important errors arising from this cause are avoided. There can be little doubt that many minor currents have been stated to exist solely in consequence of inattention to this local attraction; for, if those on board any given ship consider that they are steering one course, while, in point of fact, they are steering another, there is always considerable danger that the difference in the position of the ship, determined by proper observations, and that obtained from dead reckoning, will be set down to current, when no such current may exist. We may also inquire what is known of under-

currents. The notices of under-currents are exceedingly rare, and it is still more rare, that any experiments have been made upon them. Capt. Beaufort's experiment of sinking a line in clear water, with shreds of differently coloured bunting at every yard, to ascertain the directions of the under-currents,* seems never to have been repeated.

To quit the subject of currents, which it is not our present object to discuss, we will glance at the state of our knowledge respecting the temperature and saltness of the sea. These subjects have already engaged the attention of many naval men; indeed, nearly all our information on this head is derived from them. First, with regard to the temperature of the sea. The surface temperature will naturally, in a great measure, depend on that of the superincumbent atmosphere; so that, if the latter be variable, we should expect the former to be variable also, while it would remain more uniform in climates less exposed to great vicissitudes. Various causes, however, tend to make the temperature of the sea a much more complicated subject than from this view might be anticipated. Thus, every current, moving from a colder to a warmer region, or from one that is warm to a cold latitude, alters the temperature which any waters may be supposed to possess under any warm climate. The gulf-stream is a case in point; the waters become heated within the tropics, and then flow northwards, over and through waters of an inferior temperature. Hence it has been inferred, and with reason, that great advantages would accrue to navigation, from numerous observations on the temperature of this stream, at different parts of its course.† It would also be advantageous to ascertain at what depths this heated water descends, in various northern parts of the gulf-stream; for, as the waters of this stream are, by being heated, rendered specifically lighter than the cold waters over which they flow, it will probably be found that, towards the northern part of their course they will have much less depth, than to the southward. Experiments to ascertain this fact would require considerable care, particularly as the observer would have to contend with the laws which govern the greatest density of water; consequently, such experiments would be best made in the winter months, when the difference between the surface temperature of the sea, and the temperature of the air, would be most marked. Although we possess many notices of the surface temperature of the ocean, in various latitudes and longitudes, the observations hitherto made are far from being sufficiently numerous for

* Beaufort's Karamania.

† As a reflux, or counter current, sets down by the Florida Reefs and Keys to the S. W. and W., and consequently brings down colder water from the north, it would be curious to ascertain, in any vessel crossing the two currents, the temperatures of each, where they pass each other, as also the temperature close to the coasts.

the purpose of obtaining any very important or useful results. The surface temperature of the sea is, therefore, a subject which may readily engage the attention of those who constantly traverse the ocean in various directions, more particularly when the necessary experiments are so easy, merely requiring a little care.*

The experiments necessary for determining the temperature of the sea, at different depths, can be best made during calms—precisely, therefore, when there is little work to be done on board. It has been found, as might be expected, that, within moderate depths, near the surface, the temperature varies considerably, but that beneath these depths it becomes more uniform. If the ocean were composed of fresh water, we should expect the great depths to be occupied by water of the temperature of between 39° and 40° of Fahrenheit, which, it has been ascertained, is the temperature at which fresh water possesses its greatest density; all water, above or beneath that temperature, rising above it. The case, however, is altered with respect to the water of the sea, which forms a solution of certain salts. We have, therefore, to seek what the greatest density of sea-water may be, or, in other words, the temperature of the sea at great depths, as the heaviest water will necessarily descend to the bottom. As yet, no very satisfactory results have been obtained on this head, but it would appear that the temperature of the heaviest sea-water is certainly not less than that of fresh water, but probably a few degrees below it. It is, therefore, an interesting object of inquiry, and the point can be only satisfactorily determined by numerous experiments. M. Lenz, who accompanied Kotzebue's expedition, inferred, from his various experiments in temperate and warm latitudes, that the decrease of temperature is at first rapid, then gradually decreases, and finally becomes insensible; that the point where the decrease becomes insensible, appears to rise with the latitude. He considered that the latter point is at the depth of from 200 and 300 fathoms between the parallels of 41° and 31° N. while at 21° N. it is near 400 fathoms.

The greatest depth at which the temperature of the ocean has been taken, is 1300 fathoms, in lat. $3^{\circ} 20'$ S. and $7^{\circ} 39'$ E. In this experiment, Captain Wauchope found a temperature of 42° Fahr., the surface-water being at 73° . The same observer ob-

* It is exceedingly easy to ascertain the surface temperature of the sea; it merely requires that a bucket of surface-water should be hauled upon deck, at any given hour or hours of the day, and a good thermometer be plunged into it, taking care that the thermometer be not exposed to the rays of the sun, or so close to the sides of the bucket, as to take its temperature, which may be different from that of the water. Let these observations be duly entered in a book kept for the purpose, together with another observation, made with the same thermometer in the shade, on deck, and immediately before it was plunged into the bucket; and at the end of the voyage a valuable series of observations, on the surface temperature of the sea, in certain latitudes and longitudes, and of the temperature of the air at the same time, will have been collected. It may be necessary, perhaps, to caution some of our readers against many of the thermometers sold at the outports, as they are frequently very imperfect instruments.

tained a temperature of 51° at 966 fathoms, in lat. 10° N. and long. 25° W., the surface-water being at 80° . Captain Sabine found in lat. $20^{\circ} 30'$ N. and long. $83^{\circ} 30'$ W., a temperature of $45^{\circ}\frac{1}{2}$ at 1000 fathoms, the surface-water being at 83° . M. Lenz, obtained $36^{\circ}\frac{1}{2}$ at 974 fathoms, in lat. $21^{\circ} 14'$ N. and long. $196^{\circ} 1'$ W., the surface-water being at $79^{\circ}\frac{1}{2}$. The latter experiment gave a lower temperature for deep sea-water than had before been obtained in the tropics, or in the temperate zones; and should these, and some other experiments to the same effect, be confirmed by other observers, it would prove that the greatest density of sea-water is at least below 37° Fahr.*

We are indebted to Capts. Parry, Franklin, Beechey, Scoresby, and Ross, for many experiments at different depths, in cold northern regions; whence we might infer, that the greatest density of sea-water, in those latitudes, was somewhere about 37° or 38° , omitting the observations of Capt. Ross, which would seem to point to a lower temperature for the maximum density. Much would, undoubtedly, depend upon the saltness of the sea at the various situations, but as it is considered that this does not vary very materially on the ocean, generally, we require further experiments, which, when combined with those already made, will enable us the better to form an opinion on this subject.

From the experiments of M. M. D'Urville and Berard, it would appear, that the temperature of the Mediterranean, at great depths, is not by any means so low as that of the Atlantic ocean. The latter found a temperature of $55^{\circ}\frac{1}{2}$ at the depth of 1200 fathoms, (no bottom,) between the Balearic Isles and the coast of Algiers; three other experiments in deep water gave the same results. From these observations, and others of his own, M. d'Urville considers that all the western part of the Mediterranean, beneath a depth of 200 fathoms, rests uniformly at a temperature of about 55° Fahr.

The saltness of the sea has engaged the attention of several philosophers. Dr. Marcel, who instituted a long series of experiments on this subject, and who was ably assisted by naval men, concluded:

1. That the southern ocean contains more salt than the northern ocean, in the ratio of 1.02919 to 1.02757.

* The instrument employed by M. Lenz was a large hollow cylinder, closed at both ends by valves which opened upwards. To one of the valves a thermometer was attached, enveloped by a substance which conducted heat with great difficulty, so that it could scarcely lose the temperature which it had acquired below, more particularly being surrounded by a body of water drawn up from thence. The more common method has been to sink a register thermometer, with a metallic case and graduation, (metals speedily acquiring the temperature of the surrounding medium,) and marking the change of temperature which had taken place. Thus, if the index marking the maximum had not been moved forwards, while the minimum index had been driven back, it was considered that the temperature had diminished to the point marked by the latter index. These instruments are far from expensive; but, as it is essential to have them exact, they should always be obtained from well-known makers.

2. That the mean specific gravity of sea-water, near the equator, is 1.02777, intermediate between that of the northern and southern hemispheres.

3. That there is no notable difference in sea-water under different meridians.

4. That there is no satisfactory evidence that the sea, at great depths, is more salt than at the surface.

5. That the sea, in general, contains more salt where it is deepest, and most remote from land; and that its saltness is always diminished in the vicinity of large masses of ice.

6. That small inland seas, though communicating with the ocean, are much less salt than the ocean.

7. That the Mediterranean contains rather larger proportions of salt than the ocean.*

M. Lenz inferred, from his personal observation, made in different parts of the ocean :

1. That the Atlantic Ocean is saltier than the South Sea; and that the Indian Ocean, being the transition from the one to the other, is saltier towards the Atlantic on the west, than towards the South Sea on the east.

2. In each of these great oceans, there exists a maximum of saltness towards the north, and another towards the south. The first is further from the equator than the second. The minimum between these two points, is a few degrees south of the equator, in the Atlantic, and probably also in the Pacific, though the author's observations did not extend sufficiently low in that ocean.

3. In the Atlantic, the western portion is more salt than the eastern. In the Pacific, the saltness does not appear to alter with the longitude.

4. In going north from the northern maximum of greatest saltness, the specific gravity diminishes constantly as the latitude increases.

The same author considers, that, from the equator to 45° N. the water of the sea, to the depth of 1000 fathoms, possesses the same degree of saltness.

To determine the saltness of the sea with accuracy, cannot be expected from naval men generally, but they can easily aid the investigation, by merely filling well-cleaned bottles with surface-water, taken up in particular latitudes and longitudes, (taking care to cork them immediately,) and if provided with proper instruments, which are far from expensive, with water taken from various depths. Indeed, many an otherwise idle half hour might be well spent in collecting information on the temperature and saltness of the sea; the little trouble it would take

* According to the same author, 500 grains of sea-water, taken from the middle of the North Atlantic, contained common salt (muriate of soda) 13.3, sulphate of soda 2.33, muriate of lime 0.995, and muriate of magnesia 1.955.

being abundantly repaid in the increased interest taken in the voyage, besides the gratification afforded to the observer, in considering that he is contributing to the advancement of general knowledge.

(To be continued.)

III.—*The Cork Pilot.*

AFTER an absence from England of about four years, our ship was ordered home from Gibraltar; and, having made a tolerable passage, we discovered Cape Clear at daylight one morning, late in the month of September. A fine fresh breeze was blowing, before which we were dashing along at the rate of eight or nine knots per hour, when the well-known headland, called Mizen Head, appeared at a distance under our lee. As the day advanced the wind increased, bringing with it thick clouds and drizzling rain, which, as it mingled with the mist of the waves, formed a haze that frequently concealed the land from our view. No one on board was acquainted with the coast, and an anxious look-out was kept for a fishing-boat, from which we might obtain a pilot, as we passed in rapid succession the dark headlands of the Irish coast.

The gale soon obliged us to reduce our sail to close-reefed topsails and foresail; we had looked in vain for a pilot, and it became necessary to lessen our speed, that we might not run to leeward of our port. In this state of anxious uncertainty we remained till near noon, when the clouds broke, the surrounding gloom was speedily dispersed, and we discovered the Old Head of Kinsale about two leagues distant from us. Nor was this all, for we also saw several hookers, as the Cork boats are termed, cruising about on the look-out. The well-known signal for a pilot, the union-jack at the fore, was quickly made, accompanied by a gun, and we had the satisfaction of seeing a whole fleet of these little vessels making all the sail they could to near us.

As we approached each other fast, it was not long before the nearest hooker was alongside of us, and the ship was hove to the wind. This was no sooner done, than our ears were assailed by the welcome sound of a stentorian voice, assisted by a huge speaking-trumpet, calling out, "Is your honour in want of a *nate* lad to carry you in?" Our applicant was quickly answered in the affirmative, and, observing the preparations which were going on for lowering the quarter-boat to fetch him on board, he made signs to keep all fast, telling us, at the same time, to send him the *ind* of a line from our lee main-yard arm. A whip was instantly run out, as he had desired, and a bowline knot made in the end, which was thrown on board the hooker, as she shot up from under our lee-quarter. Paddy having placed the noose over his head,

and adjusted it quickly under his arms, told us to watch a lee roll, and he would *jist* be with us in no time. But, however convenient and expeditious this Irish method of boarding in a gale of wind may be, in this instance it failed; for, no sooner was the rope fairly tightened by the weight of our unfortunate visitor, than something gave way, and down he fell souse into his own element, and disappeared in an instant. At this disaster, a loud hillalo proceeded instantly from the hookers that were hovering round us, while an anxious silence prevailed amongst us, lest the rope should not have been well secured round him. The life-buoy was cut adrift, the foretopsail backed, and a boat was lowered before the first surprise was over, by which time, the son of Erin was discovered floating in the smooth water under the stern of the ship, but evidently embarrassed by the rope which held him. The progress of the ship was not entirely checked when he fell, and, dragged along by the rope, he was prevented from rising to the waves, but, availing himself of the opportunity which the smooth water gave him, he had just time to vociferate, with all his might, "Ye divels, let go the *ind*, or by J—a I'm mate for the sea lawyeers," when another angry wave dashed the last of his words back into his mouth; and "lawyeers" was half uttered, as he again disappeared. The rope was immediately slackened, and, disengaging himself from it, as he rose again, he was quickly relieved from his perilous situation, and dragged into the boat.

Our poor pilot was not long in recovering himself from his ducking, to which the exhilarating effects of a glass of brandy contributed materially; and, as he stood dripping on the quarter-deck, receiving the congratulations of all the officers, he presented an excellent model for all future Neptunes. But neither his dangerous plunge, nor his narrow escape, disconcerted him, as he cast a significant look at the captain, and, pointing to the yard-arm, he said, "Ill luck betide me, your honour, if I didn't think he was a grasy-fingered spalpeen that same; and ye's may swear, when he gits the *ind* just nately round his own neck, och it will not slip, honey." This sally of the unlucky pilot produced much laughter, and even disturbed the muscles of our Scotch commander's serious phiz. However, Michael Dogherty, for that was the name of our new acquaintance, after directing the helm to be put up, and sail to be made, received a fresh supply of the newest clothes from the purser's *wardrobe*, and, though not so well adapted to his particular calling, they were no bad exchange for his fisherman's dress.

• Sharks.

IV.—THE NAVY OF SWEDEN AND NORWAY. *Annales Maritimes.*

THE Swedesh Navy is composed as follows :—1st. organized companies, like the army; 2d. conscripts; 3d. contingent persons, supplied by the towns, and, 4th, those supplied from the lands of the nobility. The fleet is distributed between three ports; namely, Carlscrona, which is the chief Swedish naval depôt, and the seat of all the establishments, on which depend Stockholm and Gottenburgh.

The Norwegian Navy has two ports, Frederichsvern and Christiansand. The men include the whole of the active population, divided into classes of conscripts, one class furnished by the towns throughout the five districts, the others by the inhabitants of the coast, such as fishermen or peasantry, from eighteen to thirty-five years of age.

The following is the summary of the military and maritime forces which the two kingdoms can command in time of war :—they amount together to 218,213 men, the population of Sweden being 2,860,000, and that of Norway being 1,051,318.

The Swedish Navy is composed of 227 officers, and 21,971 men; with 10 ships of the line, 13 frigates, 19 corvettes and brigs, besides 485 small craft; the total amount of men and officers being 23,208, while 142,649 is that of the army.

The Danish Navy is composed of 108 officers and 27,965 men, with 14 corvettes and brigs, and 105 small craft; the total amount of men and officers being 28,073, and that of the army 24,362, making a total of land and naval forces, possessed by Sweden and Norway, of 218,292 men.

V.—*Historical and Descriptive Account of British India, from the most remote period to the present Time; with a Map and Engravings, &c. &c. Vol. I.*

CAPTAIN HALL, in his second series of 'Fragments,' noticed in our last number, says, 'I have seen some persons, who, after losing their friends, their health, or their fortunes, in India, have looked back to that bright country without pleasure; but I am not sure that I ever met any one who arrived in it without great satisfaction, or who could hail the first glimpse of a world so totally new, without feelings of curiosity, more than commonly excited;' and assuredly, had all who go there perused the eventful history of that country, and as her rich coasts and splendid cities first present themselves to view, studded with pagodas and temples, reflecting from their gilded turrets the brilliant rays of a tropical sun, could they then recall to mind the deeds of valour and

cruelty of which these have been the theatre, such a feeling would indeed be general. But, independent of the sublime grandeur which these proud works of art display, British India has more than the common degree of novelty possessed by other countries, wherewith to reward the curious. Gifted with every variety of climate, from the sultry valley of the Ganges, to the lofty summits of the Ghauts, and the snow-clad peaks of the still loftier Himmaleh mountains; her soil affords treasures which are sought for by people from all other parts of the world.

The present volume introduces, first, a general view of the natural features of India, and proceeds with the history of that country, from the earliest knowledge of it among the ancients down to the British conquest of the Carnatic, and the final execution, in France, of the unfortunate Count Lally, in the year 1761. In the former, we find the following passage on the subject of animals.

“From the cultivated regions, the various classes of wild beasts are excluded with the utmost solicitude. Even the domestic species are not reared in great numbers, nor to any remarkable size or strength. There is a small cow with a hump, fit only for draught, but which the Hindoo regards as a sacred object. Light active steeds are bred by the natives for predatory excursions; while for regular military service the large and strong Turkish horse is preferred. But, on the other hand, the wooded tracts, where nature revels uncontrolled, are filled with huge and destructive animals. The two most remarkable quadrupeds are the elephant and the tiger. The former, of a species distinct from that of Africa, is here not merely pursued as game, but, being caught alive, is trained for the various purposes of state, hunting, and war. The tiger, the formidable tenant of the Bengal jungle, supplies the absence of the lion, and, though not quite equal in strength and majesty, is still more fierce and destructive. These two mighty animals are brought into conflict in the Indian hunts. The elephant is then used as an instrument for attacking his fiercer but less vigorous rival. The hunter, well armed, is seated on the back of this huge animal; and, in the first advance, the whole body of the assailants are ranged in a line. When the combat commences, the elephant endeavours either to tread down the tiger with his hoof, crushing him with the whole weight of his immense body, or he assails him with his long and powerful tusks. Whenever either of these movements can be fully accomplished, the effect is irresistible; but the tiger, by his agility, and especially by his rapid spring, resembling the flight of an arrow, often succeeds in fastening upon the legs and sides of his unwieldy adversary, and inflicts deep wounds, while the latter is unable either to resist or to retaliate. Even the rider, notwithstanding his elevated seat and the use of arms, is not on such occasions wholly exempt from danger.”—p. 24, 25.

Previous to the extension of maritime discovery by the Portuguese, when the passage by the Cape of Good Hope was yet undiscovered, the history of India is little connected with that of Europe, but no sooner had Diaz passed this formidable promontory, and pointed out the proper route for his more fortunate successor, Vasco de Gama, to the shores of that country, than the ravages of war commenced in earnest. The fame of the Portu-

guese arms in western Africa, was not unknown to the Moors on the eastern coast, when Gama first visited it; he was received by them with distrust, which ended in hostility that was more than once nearly fatal to him and his followers. To drive the christian strangers from the shores of Hindoostan, soon became the common cause; and the Portuguese found themselves involved in endless wars, and by their deeds of cruelty, as well as valour, filled the whole country with dismay. But as navigation advanced, the other European powers soon became more formidable opponents to the Portuguese, than the natives of the soil; and the Spaniards, the Dutch, the French, and our own countrymen, rendered India the scene of war, even so late as the nineteenth century.

Our present limited space prevents us from affording our readers such a sample of this work as we could wish, and we must content ourselves with laying before them the interesting termination of the life of the famous Alphonso de Albuquerque, a Portuguese admiral, in whose fleet the celebrated Magellan served, and first imbibed the idea of reaching the East India islands from the east. Albuquerque having performed a series of important services, in which he outvied his predecessors in skill and valour, and added new possessions to those which his countrymen had obtained, was shortly to experience a reward which he little looked for, but which was too common in those days.

“ This brilliant career was approaching to its close. Albuquerque was now somewhat advanced in years; and his constitution, exhausted by so many toils, began to exhibit symptoms of decay. Finding his health in an infirm state, he became anxious to revisit Goa. As he passed along the coast of Cambay, letters arrived with tidings which struck him to the heart. A new fleet had come out, and Lope Soarez, the name of all others which he most detested, not only commanded it, but was appointed to supersede him as Governor of India. New officers were nominated to the principal vessels and forts,—all of them known to be most hostile to his interest. His power and influence, he felt, were at an end. The Portuguese writers, always silent on every thing which might affect the credit of their sovereign, give no hint of the motives that induced him to cast off so suddenly the man who had conquered for him a great empire. European counsellors, it may be presumed, possessed the ear of the monarch, and might whisper that the viceroy was becoming too great to continue a subject. There was not even a letter, or any other mark of honour, to soften this deep disgrace.

“ The death-blow had now been given to Albuquerque, who no longer wished to live. Amid his agonies, it was suggested to him that the attachment of his adherents was so devoted, as might enable him to defy the mandate of an ungrateful master, and still remain ruler of the Indian seas. He seems to have opened his mind for a moment to the temptation, but finally repelled it, and sought only in the grave a refuge for his wounded pride and honour. Violently agitated, refusing food and refreshment, and calling every hour for death, he could not be long of finding it. As his end approached, he was persuaded to write a short letter to the king in favour of his son, expressed in the following proud and pathetic terms:—‘ Senor: This is the last

letter which, in the agonies of death, I write to your Highness, of the many which I have written during the long period of my life, when I had the satisfaction of serving you. In your kingdom I have a son, by name Braz de Albuquerque, whom I entreat your Highness to favour as my services may merit. As for the affairs of India, they will speak for themselves and for me. Feeling that he must die before reaching Goa, his mind became tranquilized; he ascribed the present change to the ordination of Providence, and turned all his thoughts to that other world on which he was about to enter. A light barge sent before him brought out the vicar-general, who administered to him the sacraments of the church; and, on the morning of the 16th December, 1515, he expired. He was carried in pomp to the shore, where his funeral was celebrated by the tears both of the Portuguese and of the natives, whose hearts he had completely attached to him. Thus died Alphonso d'Albuquerque, who stood foremost among his countrymen, and ranks with the greatest naval commanders of modern Europe."

More than ordinary pains have been bestowed on this work, which, if the two succeeding volumes, to complete it, be of the same stamp as the present, will maintain the high character of the Edinburgh Cabinet Library. Those persons who are destined to visit the distant shores of the Eastern world, as well as those who may be already there, will find the History of British India a most valuable and interesting companion; while others, at home, will peruse with pleasure the historical accounts of those places, with the localities of which they may happen to be acquainted.

VI.—*British America*, by JOHN M'GREGOR, Esq. W. Blackwood, Edinburgh; and T. Cadell, London. 1832.

(Concluded from p. 79.)

MR. M'GREGOR gives the following heights of the mountains of North America—

The loftiest part of the Alleghany Chain . . .	2958 feet
Kellington Peak, in Vermont	3866
The Kaatskill mountain	3550
The White mountains, New Hampshire . . .	6800

And, with respect to the mountains north of the St. Lawrence, none of them are considered much above 2000 feet high.

There is something in the climate of North America, which has yet to be explained, to account for the difference of temperature, under the same parallel, in that country and in Europe. On this subject, all is conjecture at present. By some authors it is attributed to the formation of the country, and to the direction of the principal mountains; while it is allowed, that where the land has been cleared of wood to a considerable extent, the cold in winter is less severe. The observations which have been some time going forward, throughout a large portion of the country, it is to be hoped, will

shortly throw some light on this interesting subject. Mr. M'Gregor devotes a chapter of his work to the climate, and describes the various seasons of the year with all the feeling of one who is partial to it.

On the subject of the fisheries, which Mr. M'Gregor details at some length, he gives us much useful information; and it is rather startling to be told by him that 'the bank fishing is now, from various causes, abandoned by the English to the Americans and French, although the political value of Newfoundland, as a nursery for seamen, depended very much on this fishery.' He also adds, 'at present, not more than eight or ten British vessels are employed in the bank fishery; formerly, there were six or seven hundred;' and this in time of peace! It is to be hoped that Mr. M'Gregor's remarks, on this very important subject, will meet with all the consideration they so richly deserve.

We will now lay before our readers a picture of the proceedings which are to commence, as usual, in the beginning of this month, on the bank of Newfoundland, for many, no doubt, are better acquainted with the cod-fish, than with the method of taking them, and the process which they undergo. The boats used are small, and each fisherman is provided with two lines, on each of which are two hooks.

"When the boats are stationed on the fishing-ground, which is sometimes within the harbours, and, in the first of the season, near the shore, the men sit or stand at equal distances from the gunwales, and each attends to his own lines. So abundant are the fish at times, that a couple of cod are hooked on each line before the lead reaches the bottom; and while the one line is running out, the fisherman has only to turn round and pull in the other, with a fish on each hook. In this way they fill a boat in a very short time. If the cod be very large, it is lifted into the boat, as soon as it comes to the water's edge, by a strong iron hook fixed on the end of a short pole, called a gaft. As soon as the boat is loaded, they proceed to the stage on the shore with the fish, when the operations of splitting and salting succeed. Fish should be brought to the shore within forty-eight hours at farthest after it is caught. When plentiful, the boats often return in two or three hours, and push away again immediately after the fish is thrown on the stage.

"The stage is a building erected on posts, jutting out into the sea far enough to allow the fishing-boats to come close to its end. Generally covered over and attached to it, or rather on the same platform, is the salt-house, in which there are one or more tables, with strong wooden stools for four important personages among the shoremen, distinguished by the expressive cognomens of cut-throat, header, splitter, and salter.*

"The fish is thrown with a kind of pike upon the stage, and carried generally by boys or women to the long table. The business of the cut-throat, as his name implies, is to cut, with a sharp-pointed double-edged knife, across the throat of the fish to the bone, and rip open its bowels. He then passes it quickly to the header, who, with a strong sudden wrench, pulls off the head, and tears out the entrails, passing the fish instantaneously to the splitter, and,

* The splitter is next in rank to the foreman of the fishing-rooms, who is called master-voyager, and under him, receives most wages; the next in precedence and wages is the salter. The cut-throat and header are pretty much on a par.

at the same moment separating the liver, precipitates the head and entrails through a hole in the platform into the sea, under the stage floor. The splitter, with one cut, lays the fish open from head to tail, and, almost in the twinkling of an eye, with another cut takes out the sound bone, which, if the sounds are not to be preserved, he lets fall through a hole into the sea, throwing the fish at the same moment, with the other hand, into the trudge-barrow. Such is the amazing quickness of the operations of heading and splitting, that it is not unusual to decapitate and take out the entrails and back-bones of six fish in one minute.

"When the barrow is full, it is carried away immediately to the salter, and replaced by another.

"The business of the salter is most important, as the value of the whole voyage depends on his care and judgment. He takes the fish out of the barrow, one by one, spreads them, with the back undermost, in layers, sprinkling a proper quantity of salt between each. The proportion of salt necessary to cure cod-fish, is generally estimated at the rate of one hogshhead to ten or twelve quintals; but much depends on the place, and the state of the weather. More salt is used for green fish, or fish remaining long in bulk, than for fish salted on shore, to be spread out to dry in a few days; and more is necessary at Labrador than at Newfoundland. Sometimes the fish is salted in vats, which requires less salt, and also increases the weight; but it does not look so well, nor is it so much esteemed in foreign markets.

"In salting, the bulks must not be of too great a size, as the weight would injure the lower tiers. In bulks, the fish must remain five or six days; and in vats, four or five. It is then carried in barrows, and thrown into vats or troughs full of holes, suspended from the stage in the sea. In this vat, the washer stands up to his knees among the fish and sea-water, and wipes off the salt with a mop. The fish is then carried away in a barrow, and piled in a long heap, called by the unintelligible name of "water-horse," for the purpose of draining. In this state it may remain a day, before it is spread out on the flakes.

"The fish then undergoes the process of drying. They are spread, heads and tails, either on hand-flakes, which are about breast high from the ground, and slightly constructed, or on broad flakes, raised on strong posts sometimes twenty feet high, with platforms of poles laid across. The latter, as being more exposed to pure air, are considered preferable. The fish is also, at times, spread out on boughs laid on the beach or ground. In the morning, it is usually spread out, with the fleshy side uppermost, and turned about mid-day, or more frequently, if the weather be hot. In the evening, they are gathered into small heaps, called "fagots," which are increased in size as the fish dries, from four or five, to twenty or more; and when nearly cured, made into large circular piles, much in the form of a hay-stack, with the upper layers always laid down with the skin uppermost. These piles are thatched with the rinds of the spruce fir, or with tarpaulins, or circular deal frames, which are pressed down with heavy stones. After remaining some time in these piles 'to sweat,' as the fishermen term it, the fish is spread out again to complete the drying, and then removed into the warehouses.

"As the least rain will spoil the fish, if not immediately attended to, nothing can exceed the hurry of men, women, and children, whenever showers come on; they abandon every other engagement, and even run, if on Sunday, out of places of worship, to collect the fish into fagots or piles.

"The nature of the cod-fishery is truly precarious. Sometimes the cod is not equally abundant on all parts of the coast, and, in that case, the fishermen have often to go a great distance in quest of them, and, in some cases,

have to split and salt their fish in the boat. The incessant labour, also, which attends the curing, leaves the shoremen scarcely time, during the season, to eat their meals, and allows them little more than four hours' sleep.

"The quality of the fish is affected by the least inattention or error in curing. If the weather be hot and calm, it is affected with fly-blows, and becomes maggoty; and a few fish of this description may contaminate a whole cargo. If too much salt have been used, the fibres break in drying, and the fish easily falls to pieces. In this state, it is called salt-burnt, and is unfit for market. It is affected much in the same way, when left too long exposed to the sun without turning, and is then called sun-burnt. In damp or wet weather, putrefaction is apt to commence, it then becomes slimy; or by the weather beating on it, when in piles, it sometimes takes a brownish colour, and is called dun-fish, which, although excellent for present use, is not fit for shipping.

"Previous to exportation, the fish is again spread out to dry, when it is culled, or sorted, into four qualities. First, the merchantable, which are those of the finest colour and quality; second, Madeira, which are nearly equal to the first; third, West India fish, the refuse of all that is sufficiently cured to stand a sea voyage, without putrefying, and which, with the greater part of the Madeira, is sent for sale to the West Indies, to feed the negroes; lastly, the broken fish, dun-fish, or whatever will not keep in warm countries, but which is in general equally good for domestic consumption: mud-fish, or green-fish, is generally understood to be cod-fish, either wholly or partially split and pickled."

The livers of the cod are also converted into oil, in addition to that obtained from seals on the ice, towards the close of the winter, in which employment great personal danger is incurred.

The aborigines of Newfoundland, called the Red Indians, and by themselves Bœothics, are now supposed to be entirely extinct in consequence of having been hunted and persecuted, from the time of the earliest settlers in that country. The account of them by Mr. M'Gregor exhibits a melancholy picture of the depravity and cruelty of these settlers, who appear to have been destitute of common humanity. In the year 1803, a female Indian was taken, and conducted to the governor, Admiral Lord Gambier. She was well treated, and set at liberty, but it is not known what became of her. Since that time, much pains have been taken to conciliate the remainder of this unhappy tribe, if any there might be; and a society, called the Bœothic Institution, has been established for that purpose. Mr. Cormack, a gentleman influenced by the most laudable philanthropy, has exerted himself much in forwarding the views of this society, and, previous to his departure from St. John, in the year 1827, in search of these Indians, delivered an address to the meeting, that does honour to him. Mr. M'Gregor tells us that—

"Before Mr. Cormack's final departure from this place, a numerous meeting of the friends of the expedition was held. On this occasion, Mr. Cormack, after the object of the expedition had been eulogized by Judge Desbarres, addressed those around him, and said, among other matters, 'Is there no honest pride in him who protects man from the shafts of injustice?'

Nay, is there not an inward monitor, approving of all our acts which shall have the tendency to lessen crime and prevent murder? We now stand on the nearest part of the New World to Europe, of Newfoundland to Britain; and, at this day, and on this sacred spot, do we form the first assembly that has ever yet collected together to consider the condition of the invaded and ill-treated first occupiers of this country. Britons have trespassed here, to be a blight and a scourge to a portion of the human race; under their, in other respects, protecting power, a defenceless, and once independent tribe of men, have been nearly extirpated from the face of the earth, scarcely causing an inquiry how or why. Near this spot, man is known to remain in all his primitive rudeness, clothed in skins, and armed only with a bow and arrow, by which to gain his subsistence, and to repel the attacks of his reckless and lawless foes."

We must refer our readers to Mr. M'Gregor's work for the interesting details of this journey; and assure them, that the trouble in perusing it will be amply repaid; while we are satisfied, that, under the auspices of the Bœothic institution, every thing will be done to expiate the cruelties committed on the unfortunate Indians, by kindness towards those that may happen to be left.

One of the principal features of this work, is the historical record it contains of every known part of British America; a feature which, in addition to the information afforded by it, on the present condition of the country, will always render it valuable, as a work of reference. The history of each island, and portion of the coast, is given, from the time of Cabot and Sir Humphrey Gilbert, down to the present day, with some very interesting particulars concerning the various persons who have acted as principals, in former days, under the French government. We must here conclude our remarks. Mr. M'Gregor's work is a valuable historical record of British America, from its discovery to the present time.

VOYAGE AU CONGO, et dans l'Interieur de L'Afrique Equinoxiale. *Fait dans les Années, 1828, 1829, and 1830.* By J. B. DOUVILLE, *Secretary to the Geographical Society of Paris for 1832, &c.*, 3 vols., 8vo. accompanied by an Atlas.—Paris, 1832.

It is rather remarkable now-a-days, that the fruits of two interesting expeditions into the same country, should be preparing for the public at once, and each of them rich in discovery. The Messrs. Lander, with their interesting account of the Niger, have no sooner passed off the stage, than forth comes Mr. Douville, a French traveller, with his researches in Equatorial Africa. There is no part of Africa so little known as that lying under the equator. The actual knowledge which the ancient geographers had of this quarter of the globe was limited to the northern parts of it, and, like objects seen through a haze, in proportion as the places which they treated on became more distant, by lying nearer to the equator, their accounts of them are less distinct.

Modern discovery has added largely to the geography of north-

ern Africa, to which it has principally been confined; and the Portuguese possessions in Angola, with the more southern one of Benguela, are the only parts of this extensive country near the equator, of which we have been hitherto informed with any certainty. Mr. Douville returned from that country to France, in the month of June last, after an absence of five years, which time has been principally occupied in collecting much interesting and valuable information relating to it. From the narrative of this expedition, which is just published, we propose laying before our readers a brief account of the parts which he has visited.

Mr. Douville embarked at Havre on the 1st of August, 1826, with the intention of visiting India, and penetrating from thence into China; but having reached Monte Video, circumstances induced him to change his plan, and he returned to Rio Janeiro, from whence he departed for Africa, and landed at Benguela on the 12th of December, 1827. From hence Mr. Douville proceeded to Loando by sea, where he made preparations for his journey into the interior. It was not, however, until the 6th of February, 1828, that he departed on his interesting expedition, and proceeded as far as Bengo, a short way up the Zenza river, where he landed, and travelled along the southern bank to Regence de Lenza, a town situated a short distance from it. Hence he continued his route in an easterly and south-easterly direction as far as Hunga, on the northern bank of the Couenza river, in lat. $9^{\circ} 42' S.$, and lon. $18^{\circ} 5' E.$ Having crossed this river, which seems to be as large as the Congo, Mr. Douville proceeded to the south-east as far as Cavungi, a large town, and then to the south-west to Zamba, the capital of the province of that name. From Zamba he reached Bailundo, the capital of the province, from whence he passed through Quibul, and arrived at Benguela on the coast. From Benguela Mr. Douville travelled to the east into the province of Bihe, the capital of which lies in lat. $13^{\circ} 25' S.$, and lon. $19^{\circ} 40' E.$, from whence he again proceeded to the northward, and recrossed the Couenza river, in lat. $9^{\circ} 27' S.$ and $20^{\circ} 38' E.$, and continued along its banks, and visited the volcano of Zarabi, after which he returned by the same river to Loando, visiting in his way the province of Quissama to the southward of it.

Hitherto, the course which Mr. Douville had pursued lay entirely to the southward of Loando, but we will now follow him on his second journey. From Loando Mr. Douville proceeded along the coast to the mouth of the Ambriz river, about 30 leagues to the northward, and continued his journey in a due easterly direction, nearly that which the river takes, and penetrated as far as Calunga, in lat. $7^{\circ} 30' S.$ and long. $22^{\circ} 50' E.$ From this place he took a north-east direction, and crossed the river Congo in lat. $5^{\circ} 25' S.$ and long. $25^{\circ} 40' E.$ Following his north-east course, he passed successively through the towns of Mucangana, Tandia-vua,

and Cucula, the latter of which places is in about $0^{\circ} 3' N.$ lat. and long. $27^{\circ} 15' E.$ the furthest eastern point which he attained. From hence he took a north-west direction, and arrived at a town called Mouene-Hai, in lat. $1^{\circ} 53' N.$ and long. $25^{\circ} 27' E.$; the northernmost point which he attained. Here he commenced his return to the south-west, and recrossed the Congo in lat. $4^{\circ} 40' S.$ and long. $20^{\circ} 10' E.$, at a large town on the northern bank called Cancobela, and returned to the coast at the mouth of the Ambriz river, from whence he departed. From the Ambriz he embarked, and returned to Havre in June, 1831.

Having taken a hasty view of the course pursued by Mr. Douville, let us now see a sample of his observations, and, if we mistake not, we shall find enough of interest. The work before us is divided into three volumes, and accompanied by a map and lithographic drawings of the natives. He gives us a description of Benguela and Loando, but we must leave these, and proceed to matter of more moment in the interior. The historical description of the latter of those places, and the account of the Portuguese conquest of that country, contain much interest, which we shall return to at a future opportunity. A short distance up the river Zenza, Mr. Douville was received by the chief of a village named Monenbengo, who, to give him an idea of his authority, summoned all his subjects, and counted them as they passed before the traveller. In doing this, they clapped their hands in token of respect. The banks of the river were found to be well cultivated and inhabited; but very different is the sea-coast near the mouth of this river, which was visited by Mr. Douville, and which he describes as scarcely elevated above its surface. Passing through the village of Quifandongo, he arrives at the convent of St. Antonio, the situation of which is described as abounding in all the luxuries of a tropical climate; and it is remarkable, that so short a distance as a few miles from the coast should produce so great a difference in the vegetable world. Near a small village named Icolo, about a hundred miles from the coast, Mr. Douville took the opportunity of visiting a range of hills while his baggage came up. He thus relates this visit—

“ Their elevation above the level of the sea is about 1995 feet. I observed three piles of stones, resembling altars, placed beneath the same number of large trees, pretty close to each other. Before these altars were about twenty men, surrounding one, who had the appearance of a chief. I no sooner discovered them, than I halted, to observe their motions. A little bell was rung at intervals, at the sound of which the whole group disappeared, each retiring back some paces, apparently terrified, while a drum or *tamtam* was continually kept beating. As the party thus moved away, I distinguished a basket suspended from a staff in the middle of each altar. The chief held a wand, which, from time to time, he dipped into a vessel containing some liquid, placed on a fire, and traced out various characters with it on the ground, round the fire, with great solemnity. As the liquid in the vessel bubbled from the heat, he pronounced some mystical words, which I could

not distinguish, on which the bell was rung violently, the whole party appeared to be seized with terror, and exhibited convulsive agitations. These, however, soon changed into a lively dance. At this moment they discovered me; fear suddenly overcame them, their dancing ceased, and they appeared to consult each other as to what they should do. In the next moment, two of them approached me, and hastily said, 'Stranger, swear that you will never divulge what you have witnessed, or we will instantly kill you.' One of them explained to me, afterwards, that the baskets contained instruments and herbs employed in these religious ceremonies—that a figure appeared in the vessel every time that the bell was rung, but that it was not until the moment it boiled that it would give the answer which had been demanded."

These ceremonies, however, as we shall hereafter see, were pretty general hereabouts. Hitherto, Mr. Douville had travelled near the banks of the Zenza, a small river which falls into the sea about ten miles north-east of Loando, and experienced the loss, now and then, of some of his men. These, however, were speedily replaced by his guides; and he continues—

"We left Zemba to the northward of us, in order to cross the mountainous range which separates the districts of Icolo and Bengo from that of Zenza or Golungo. The greatest height which we attained was 2104 feet above the level of the sea. We found no dwellings during the three first hours of our journey. We were enveloped in a dense forest of trees, which, although only of a moderate height and girth, appeared to be old; and many, that were only a few inches in circumference, seemed to have withstood the effects of several centuries. The skirts of this forest were defended by a thick brush-wood, the grass beneath the trees appeared withered, and not a flower was to be seen. The foliage of the trees seemed as if deficient of moisture, although these mountains are watered by numerous streams which descend down their sides. I endeavoured to ascertain the cause of this arid effect, but was unable to discover it.

"My caravan was travelling quietly along, when, on a sudden, the sound of a little bell, and the noise from a drum, apprised us of being near a group of sorcerers employed in their magical operations. Consternation instantly seized my party, and their countenances betrayed the utmost fear, but the natives had discovered our approach, and suspended their proceedings; on which my negroes took courage, and passed rapidly by them, without looking either to the right or the left. Those who carried my astronomical instruments, and who always kept by my side, hastily followed their countrymen. This I did not object to, but allowed them to go on, and approached the sorcerers with my interpreter, and, by promising the strictest secrecy, prevailed on them to continue their operations. My interpreter, who was a negro, also assured them that I was a partisan of their art.

"They formed a circle again round a caldron on the fire, and repeated the same ceremonies as before described. These people, it appears, were thus engaged, in order to ascertain the cause which had produced the illness of their chief's daughter, who, for fifteen days, had lost the use of her limbs.

"In due season, the chief of the party announced that the disease proceeded from the sorrow which the damsel felt for the loss of a young man to whom she was greatly attached. As soon as the chief had ceased speaking, the whole group commenced a dance, which was terminated by their removing a large stone which closed an aperture under one of the altars, wherein was deposited the caldron, and a variety of amulets. It was then

carefully closed, and I was hastily surrounded by them, and they would not release me, until I had promised faithfully not to divulge to the governor of the district what I had witnessed. This, of course, I complied with, and was set at liberty by their dispersing.

"I rejoined my carriers, who had awaited the result of my visit, with the full belief that I should not escape alive; and great was their astonishment, when they found me once more safe among them.

"At three in the afternoon we descended the last hill, which, like the rest, is of calcareous formation, and we continued travelling along the bank of the Zenza. In passing through the gardens and orchards by the river side, I observed, with some surprise, that my negroes, although thirsting from heat and toil, did not touch any of the fruit, which presented an inviting appearance, and, about five in the evening, we arrived at the house of the regent of the province, much fatigued by the length of our journey."

Mr. Douville gives us the following remarks on the chain of mountains over which he had passed.

"As to the general aspect of these mountains, at the foot of which runs the Zenza, at first they have the appearance of primitive formation, and the valleys, of having been worn down by the water of the sea, on its retiring from them. But after crossing them, and examining them carefully for two days, I found this an erroneous impression, and discovered among them, at the height of 1656 feet, the fossil remains of large animals, among which were those of the elephant, and others unknown to me. I have observed, that in this part of the kingdom of Angola, the principal chains run from east to west, and the inclination of the strata being from south to north, the rivers cut these chains in an oblique direction. On the summit of one of these mountains, in the middle of a bank of primitive formation, I found beds of shells in a perfect state of preservation, and which would indicate that some great convulsion of the earth has produced the first displacement of these shells from their original situation: it has been sufficient for cavities to be sunk, in order to produce this irregularity."

We will not occupy the reader's attention with a geological disquisition, to account for the presence of these shells at the summit of the mountain, as it is a well-known fact in various other parts of the world, and has, no doubt, originated from some cause out of the ordinary course of nature; but we will accompany Mr. Douville to the regent, or chief of the province, the important personage at whose house he had just arrived. Mr. Douville says,

"I found the regent of Zenza de Golungo seated at his door. He appeared to be an old man, his legs being naked, and covered with the most disgusting ulcers. His body was sore from the effects of scurvy, and, to complete the hideous picture which his appearance presented, he was in a state of drunkenness. Notwithstanding this, he did not omit to let me understand that he was a captain of negro militia, and consequently superior to all the inhabitants of the place."

His solicitations to Mr. Douville, that he should occupy a part of his house, were in vain: but, nevertheless, the traveller was obliged to take refuge there afterwards, to avoid the effects of bad weather, and to submit to the inconveniences he was likely to

meet with from such a host. Mr. Douville draws a sad picture of the superstitious condition in which he found the people of Zenza Golungo, and at the same time amuses his readers with the account of a consultation which a messenger from the regent held with one of their deities, respecting the condition of his master's health. It appears that they have various deities, whom they believe to be endowed with gifts of a different nature, the principal of which has the art of healing diseases. At the celebration of their marriages, unless both sexes undergo a certain operation, in which these deities are concerned, and which not unfrequently terminates fatally to the parties, every vicissitude which may befall them, in after life, is attributed to the neglect of it. During the short stay which Mr. Douville made in the house of the regent, an opportunity was afforded him of witnessing the manner in which justice was administered by this petty ruler, who, by the bye, we have omitted to say, like the rest of his class, owed his authority to the Portuguese. Having seated himself by his friend, the plaintiff, who was a *soba*, or native chief of a district, shortly appeared, attended by three of his principal men, and soon afterwards the defendant, accompanied by some friends. The conference is thus related.

“After the usual ceremonies were gone through, which consist in squatting down, and clapping the hands, as well as bending reverently before those to whom honour is due, the plaintiff proceeded to prefer his charge. The defendant admitting his fault, alleged various reasons in extenuation of it, which had little effect on the judge, whose favour had been previously gained by the timely present of a hog from the chief. The defendant was forthwith condemned to restore the slave which was the cause of the dispute, and to suffer a month's imprisonment. As soon as the sentence was delivered, the chief, as is customary with those who are successful in their cause, jumped from the ground, shouting with joy, and continued his noisy mirth as he passed through the village, shewing thus that he had gained his point.

“The less fortunate defendant remained in his place with a downcast look, but one of his friends, who went out with the victorious chief, quickly returned, followed by one of the regent's slaves, who, approaching his master, whispered to him, that the defendant had sent a hog, and ten *beiramés*. A *beiramé* is a measure of about three ells of any sort of cloth, and is the ordinary measure of these districts. The friend of the condemned immediately solicits the mercy of the regent, and sets forth the validity of the reasons which had already been urged in his behalf; on which, the regent becoming more tractable, admits of the extenuation, and releases him from his month's imprisonment. This sentence is registered instead of the first, and the prisoner is enlarged on paying the costs!”

Mr. Douville adds, that,

“This method of administering justice satisfies all parties, and is a tolerable proof that the dispenser of it is not blind to his own interests.”

Continuing his route into the interior, towards the province of Golungo-Alto, through a well-cultivated but hilly country, rich in vegetation, and ornamented with magnificent woods, which are

almost impenetrable, Mr. Douville thus describes his journey from Trombetta to Calumbolo, a distance of about five leagues; the latter place being the residence of the regent of the province.

“The country between Trombetta and Calumbolo is cheerful and pretty. The ground is nearly every where cultivated. At every step, houses are seen through avenues of banana trees; and on the borders of the pathways are the tombs of the natives, ornamented in various ways. On some of these the soil is raised, and arranged so as to represent the figure of a serpent, small pieces of marble, or white shells and fossils, being placed on it as substitutes for the scales. At the head of others a staff is fixed, bearing a crown of straw and flowers, made with great pains; a mat is thrown over others, or a basket cut in halves, one of which is placed above, and the other beneath the tomb. By the side of them is generally a calabash and a broken pitcher, and in the middle the staff of the deceased, attached to which is the bag in which he carried his food when travelling. The ornaments which he used about his person when living, as well as his kettle, are suspended also from a little staff, all of which are considered as sacred, and are not molested by any one. No epitaph describes the condition of the deceased; nevertheless, every one knows whether the grave is that of a native condemned to slavery, or of one who is exempt from it. In this respect no one can be deceived, for each object which ornaments it is equivalent to it; not only do they attract attention, but they are also emblematical.

“At about a quarter of a league from Musungo, I perceived a white flag waving from the summit of a little monument. On approaching it nearer, I observed a particular mark painted in the middle of it, and the form of the monument apprised me, that it was the burying-place of a family of *sobas*, or chiefs, and that the mark was the distinguishing one of the family; a custom which is observed by each chief in the kingdom of Angola.”

Having arrived at Calumbolo, our traveller experienced much attention from the regent of Golungo-Alto, and was quickly supplied with a residence. Here Mr. Douville passed a few days in examining the country, and became so proficient in the language, as nearly to dispense with his interpreters. From his description of the *sobas*, or native chiefs, we find the condition which they hold in the country.

“The *sobas*, who are vassals of the king of Portugal, are so humble in their manners that they never knock at the door of a white man; but announce themselves, and ask permission to enter, when they remain standing, or sit down on the ground, unless they are offered a seat. These chiefs never quit their dwelling without being accompanied by some *macota*, or noble, who does not presume on his part to sit down in the presence of a *soba*, unless on the ground, and behind him, if he seats himself on a mat; or by his side, if he uses a chair. Whenever these black princes meet an European, he crouches before him, and salutes him by clapping hands. Some of these *sobas* never go out without a numerous retinue, and being carried like a white man; and, although generally having good clothes, will not refuse any that may be presented to them, even the oldest, particularly if the cloth be red.”

Mr. Douville visits an adjacent part, to witness the manufacture of cloth, and one of these chiefs was selected to accompany him. This, he says, was,

"The Soba Bango, having notice of my approach, received me, surrounded by his nobles. He was dressed in military uniform, with captain's epaulettes, a sort of apron which the negroes wear, being a substitute for breeches, while his shoes seemed tolerably good. He rose when he first saw me, and did not sit down again until I had taken my place. I gave him two bottles of tafia, one of wine, and some ornaments for his wives.

"After having obtained my permission, he drank off one of the bottles of tafia with a good grace, but without ceasing to converse with me, in answer to my questions respecting the laws and customs of the country; at the same time, his communications were made with that sort of reserve, which characterizes the negro in the company of an European.

"This soba is a Catholic; he has a lawful wife, besides several women. His house is very commodious, the situation of it is more healthy, and it is the handsomest and most agreeable that I have seen in the country; the walls of it are of wood and mud, covered with cane so closely woven, that the whole has the appearance of being solid; the outside is covered with a thick dry moss, and ornamented with straw, in a manner that entirely prevents the rain from penetrating into the interior.

"The furniture which this prince possessed was of no mean order, for the country: it consisted of a large magisterial chair, from which he administered the law, and four others, besides a table, and two bedsteads made of cane, in the form of a sofa. Some engravings ornamented the walls; two dimbas and various drums or tantams were suspended on each side of the door-way. The dimba is a musical instrument made of six calabashes, of different sizes, fastened together in the form of a semicircle; little tablets of wood are suspended over the openings of the calabashes, from pieces of cord stretched across them, and are beat by two small sticks, one end of which has a piece of cloth tied round it, and a sound is thus produced which varies according to the size of the calabash."

These sobas are powerful men, and have large districts under their control. The soba of Bango has more than three thousand houses dependent on him; a division in common with the rest, which the Portuguese first established in the country: by this means the Portuguese retain these extensive possessions. The soba is invested by them with rank and power over his countrymen, while at the same time he is a most abject vassal, subject to any caprice they may choose to impose on him. But Mr. Douville tells us, that the whole ambition of the negro consists in having handsome wives and plenty of them, in order that he may be blessed with a numerous progeny. He prefers, however, having female children to male, because they are more profitable to him. He knows that he can obtain about fifteen dollars for each of them, and at all events that they will be always of service to him in consequence of their sex. As soon as one is married, or when one of his sons is old enough to be so, his happy days commence; he seats himself constantly at his door, and is employed in weaving cloth; and if he makes one every year for each of his companions, he considers himself a rich man. He does not trouble himself about providing nourishment for his children, as it is the duty of his wives to cultivate the ground, and prepare food for them. The

flower of the mandiocre serves him with a sort of boiled provision ; but if his wives cultivate sufficient of it to make garrapa, a fermented liquor obtained from the root of it, he considers himself possessed of all the blessings of life. When he is tired of working at the cloth, he lays himself down at the door of his hut, and sleeps ; and when he awakes, he regales himself with his cachimbo, or pipe.

These habits of the negro render him easy to control, but at the same time it is difficult to get him to work as a carrier, which at certain times of the year he is obliged to do ; and it is not unfrequent to find him forsaking his burden in the road, and escaping from his masters. Some days before his departure from Golungo-Alto Mr. Douville witnessed a custom among these people, which, he says, is common throughout the whole of Angola, and which he thus relates :—

“ In returning from visiting the southern part of this province, I stopped at a village, in order to pass the night there. I was informed, that in a house near to that which I had entered, there was a female who was so ill that she was not expected to live till the morning. Having heard of an extraordinary custom which is practised on these occasions, I went there in order to witness it. On going in, I took the hand of the sick person, and saw that she had not long to live. Her children surrounded the bed, some women were seated round a fire, and the husband by the side of the dying woman. A profound silence reigned in the room. I found very soon that my presence produced restraint, which I endeavoured to remove by assuring the negroes that I was their friend, and would betray nothing. A negro, who accompanied me, also confirmed what I said, and they were satisfied. It was not long before the approach of death attracted attention, and immediately the husband of the dying woman extended his whole length on her body, and remained in this position until she expired !

“ The negro considers this singular proceeding as an indispensable duty, and a proof of his affection for the deceased, under the impression that it ensures her a happy reception in the next world. Should any one neglect this duty he would be despised and shunned by all his family and friends ; indeed, so far do they carry their ideas on this subject, that he would be certain, at some time or other, of falling a victim to the revenge of the parents of his unfortunate wife.

“ I was very glad of having taken an opportunity of witnessing a custom so barbarous as this, which had been often told me, but of which I could not before convince myself.”

We must now take our leave of Mr. Douville, promising our readers some more extracts from these interesting volumes, in our future numbers, of parts in which no European had preceded him. In the Portuguese possessions, to which we have confined ourselves at present, he was received by some of the agents of that government with much cordiality, while by others he was looked on with distrust, which at times nearly led to his imprisonment. But in proportion as he advanced beyond their territories, other difficulties were to be surmounted, which were even more

formidable. These proceeded from the inveterate hatred which the natives bear towards even the name of a white man, arising from the character which the Portuguese have obtained, and which appears to have spread throughout this part of the country. How far this may be true, it will be for future travellers to prove, and we cannot place implicit confidence in this account of Mr. Douville, although he tells us that they imbibe it with their mother's milk. However, we can easily imagine that they could not witness the arrival of a stranger among them, without being apprehensive of the purity of his motives, unaccustomed, as they must be, to hear of any thing but his despotism; nor were the superstitions of these people at all calculated to assist the progress of the traveller, who only overcame their aversion to him by passing himself off as a sorcerer possessing as much power as any of their own. The method of travelling adopted by Mr. Douville was with a caravan and palanquin, attended sometimes by a party of negroes amounting to five hundred men; a number which, he says, was necessary to preserve him from the hostile attacks of the natives. Among these were an armed guard, which generally travelled by his side, while his caravan preceded him.

The map by which the present work is accompanied is of moderate size, in which the track of Mr. Douville is inserted, and it is also illustrated by a series of rough lithographic drawings, sufficient to represent the customs of the natives. We understand that Mr. Douville will shortly publish a large collection of drawings connected with the natural history of the country through which he passed.

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE, AND ART.

CHARTS, PLANS, AND MAPS.

The **STRAIT OF MAGALHAENS**, commonly called **MAGELLAN**. Surveyed in His Majesty's Ships *Adventure* and *Beagle*. By Captain Phillip Parker King, R.N. F.R.S. 1826—1830. Price 6s. *Size, Double Elephant.* Admiralty.

This is the first chart published of the South American coast, surveyed by Captain King. It contains the whole navigation of this extraordinary, and, we may add, dangerous Strait. Hitherto no chart has appeared, on which a ship could depend, nor a set of directions to consult; and thus have the dangers of this Strait remained as formidable as they were to the first navigators. Numerous channels and inlets have been discovered by Captain King, that are now distinctly defined, among which are the *Otway* and *Skyring* waters, places abounding in seals and sea elephants. To vessels employed in hunting these animals, the present chart will be most valuable, as well as the directions by which it is accompanied, and geographers will at

length obtain a correct delineation of the southern parts of the South American continent, as well as the heights of the principal mountains. The southern limits of this chart extend to Lat. $55^{\circ} 9' S$.

CHART OF THE FEROE ISLANDS, surveyed by order of the Danish Admiralty. By Captain H. Born, 1806. Corrections, 1832. *Size, Half Double Elephant.* Admiralty.

Although by no means an accurate survey of these islands, this is the best extant. It was totally deficient of soundings, till Captain Vidal, in the course of last summer, obtained some, which have been inserted between the southernmost of the islands and Thor haven. Captain Vidal has also altered the position of the Monk Rock, having placed it to the north-east of where it was laid down previous to his voyage. He has also carried a line of soundings between it and the southernmost island; a passage, nevertheless, which it is advisable should be avoided, as the depth of water round the whole of the islands yet remains unexamined.

MILFORD HAVEN. By Lieut. H. M. Denham, R. N. 1830. Price 3s. *Size, Half Double Elephant.* Admiralty.

This compact little chart includes not only the interior of Milford Haven, as far up as Pembroke Ferry, but also the exterior coast of Pembroke, as far as St. Goven's Head. Distinct leading marks are also given, for avoiding the dangers at the entrance, besides views of them. It is the first of the series, resulting from Lieut. Denham's trigonometrical operations.

A TRIGONOMETRICAL SURVEY OF CLARENCE'S STRAIT, GULF OF PERSIA. By Commander G. B. Brucks, and Lieut. S. B. Haines, Hon. Co's. Marine. 1828.

Clarence Strait is formed by the island of Kishm, and the adjacent coast of Persia; a part of the world, the navigation of which, until this survey was made, had been entirely unknown. It is contained in two sheets, and drawn on the scale of an inch to one mile.

BOOKS, &c.

SAILING DIRECTIONS FOR THE COASTS OF EASTERN AND WESTERN PATAGONIA, INCLUDING THE STRAIT OF MAGALHAENS, AND THE SEA COAST OF TIERRA DEL FUEGO. By Phillip Parker King, Captain, R. N. F. R. S., &c. Admiralty. *London*, 1832.

There is much new and useful matter in this book; and to obtain the best information of the Straits of Magellan, we need no longer have recourse to the voyages of Carteret, Byron, and Wallace, Bougainville, or Sarmiento; for, with the aid of their remarks, and his own observations and experience, Captain King has compiled the work before us. In addition to the general description of coast, with the geographical position of the various points and headlands, Captain King has intro-

duced observations on the tides, the navigation of the Strait, with the resources which a ship may expect to find, as well as the dangers to which she will be exposed, and a table of the general heights of the mountainous land by which the Strait is formed. The description of the coast commences with Port St. Elena, on the eastern coast of Patagonia, and the work is intended to accompany the chart of the Strait we have already noticed.

Remarks on the Practicability and Advantages of a SANDWICH or DOWNS HARBOUR. By Edward Boys, Commander, R.N. *Sandwich, J. Giraud, 1831.*

Of all places on the coast of England, in times of war, there is not one where a harbour is more required, for the safety of our merchant shipping, than at Sandwich. The project has, besides this, several peculiar recommendations, one of which is, that as long ago as the year 1548, plans have been formed for the same purpose at various periods, all of which were founded on the skill and experience of the ablest engineers of the day. In spite of these opinions, by some chance, probably of a political nature, the town of Ramsgate has taken the lead, and the pier harbour of that place has been in course of construction since the year 1749: A considerable expenditure, however, has been and is still required, to keep it from being choked up with the deposit from the river Stour; and a glance at the plans accompanying the Remarks of Captain Boys, sufficiently shews that this will eventually take place. The difficulty of entering Ramsgate harbour, in consequence of the velocity of the tide, is another disadvantage attending it, which operates strongly in favour of the projected harbour at Sandwich. Captain Boys advances several other points in favour of his plan, that are evidently important; one of which is, the danger attending our merchantmen in the Downs, in any future war, from the vicinity of the French coast, in consequence of the introduction of steam navigation. In addition to this, it would possess greater local advantages, in a commercial point of view, than most of our pier-harbours.

It is proposed by Captain Boys, to make a cut for the harbour, in a direct line from the anchorage called the Small Downs, about a mile to the northward of Sandown Castle to the river Stour at Sandwich, a little to the southward of a cut that has been commenced at some former period. We sincerely hope that the plan will be taken up with that spirit, to which its superior claims, in a national point of view, so fully entitle it.

A COMPENDIUM of NAVAL ARCHITECTURE, arranged in Questions and Answers, with Illustrations, adapted for facilitating the Nautical Student in the acquisition of the Art. By Robert Brindley, Architect and Surveyor. *Hearle. Devonport. 1832.*

It may appear a strong assertion, but we believe it no less true, that the generality of naval officers are little acquainted with the art of naval architecture, and yet, with the practical knowledge which they acquire in the course of their servitude, no class of men can be better calculated to bring to light those hidden secrets, on which the velocity and stability of a ship depend. We can attribute this deficiency to nothing but the expensive form in which works on this important subject have hitherto appeared, by which the means of cultivating a

knowledge of it is denied them, and they are prevented from pursuing the higher and more difficult parts of this noble art. Mr. Brindley appears to have seen this defect in the same light as ourselves, and, determined to remove it, has drawn up in a cheap form the above little work, in which every component part of a ship is familiarly explained by the old but excellent system adopted by our forefathers, that of question and answer. After taking a brief view of the history of naval architecture, Mr. Brindley enters into the particulars of stability, capacity, and construction, in which latter, he leads his pupil through the mould loft, and describes to him the method of drafting the numerous pieces of timber from the keel to the upper works. In the important particular of proportion, he draws some just conclusions respecting the inequality on which our ships met those of the Americans in the late war, and gives the following just answer to the question, 'How is a navy best formed?'—'By having but few *classes* of ships, upon the *most approved models, and of the largest dimensions*. Thus, two (classes) of the line, two of frigates, two of corvettes, and two of brigs.' Mr. Brindley also devotes a section of his work to Miscellanies, in which he considers the various modern improvements that have been introduced into ships. Among these are Admiral Brooking's rudder, and steering wheel, sails and cordage; Captain Newell's fid and carronade slide, Captain Marshall's gun-carriage, Captain Phillips's improved capstan, Lieut. Rodger's anchors, Mr. Harris's lightning conductors, the merits of which, with various other recent inventions, are fully considered. This little work has peculiar claims to the attention of naval men, it contains a vast store of information in a small compass, and we have no hesitation in saying, that it ought to be in the possession of every officer, when he *first* enters His Majesty's naval service.

The MERCANTILE NAVY IMPROVED, or, a Plan for the greater Safety of Lives and Property, in Steam Vessels, Packets, Smacks, and Yachts; with Explanatory Drawings, &c. By James Ballingall, Surveyor of Shipping for the Port of Kirkaldy, Manager, &c. *London. Morrison. 1832.*

That improvement is desired in our mercantile navy, the Americans have long since taught us; but as there exist difficulties which are yet to be removed, to enable the merchant to build his vessel for *sailing*, these operate in favour of his attention to her strength and durability, which are no less essential points. Mr. Ballingall shews, in a forcible manner, the danger of the system at present adopted in the construction of the bottoms of our merchant shipping, and proposes to caulk the ceiling or inner planking of the vessel, so as to make it thoroughly water-tight; also to plank over, and thoroughly caulk, the whole space at present left for a water-course above the timbers, and covered with limber boards, and to caulk the spaces now left entirely vacant; by which he would give them a double security against a leak, as high as the upper deck. He then proceeds to give a plan for getting rid of any water in the vessel, by means of the pumps from a cistern or cisterns placed beneath them, with water-courses leading to them alongside the keelson, as far forward and aft on each side, as the spring of the vessel may require.

We regret that our limited space will not allow us to quote the various instances in which the advantages of Mr. Ballingall's system of solid bottoms have been proved; but it is sufficient to state, that it has already been adopted in the Royal Navy, where, in the instance of His Majesty's Ships, *Barham*, *Pylades*, *Vigilant*, and *Success*, it has been the means of saving them from wreck. We have seen a drawing in which the state of the latter ship is represented, after she had been on shore, with the loss of ten successive planks from the keel upwards; and in this instance, as well as the rest, the eventual safety of the ship has been owing to their solid bottoms, as recommended by Mr. Ballingall. With these facts before them, it behoves the owners of our merchant ships, in particular, to adopt the system of solid bottoms. Their vessels run more risk of loss than men-of-war, from sailing badly, and if this plan were adopted, the safety of lives and property would be less endangered, and we should not have to record the average loss of about thirty British shipping every month.

Mr. Ballingall has already received the silver medal of the Highland Society, for his improvements in ships' bottoms, besides several certificates from men of science in approbation of his plan.

THE NEW REQUISITE TABLES.

At the last Annual General Meeting of the Royal Astronomical Society, the following notice of this work was given in the report of the Council.

"During the past year, the Lords Commissioners of the Admiralty have consulted the Council also on another important subject connected with the advancement of navigation. In consequence of the alterations about to be introduced into the *New Nautical Almanack*, it has been considered expedient that new Requisite Tables should be formed to accompany it: and, with the view of carrying this object into effect, in the most efficient and satisfactory manner, a committee has been formed, to consider, arrange, and propose such tables as may be thought most proper for that end. This committee has already met, and a sketch of the proposed tables has been drawn up, but not yet agreed upon: for in an affair of so much importance, there cannot be too much time devoted to the consideration of the subject."

We have been favoured with a copy of the report of this committee, and shall make it our duty to lay it before our readers in our next number, with the names of the persons from whom it has emanated.

DISTANCES AT SEA.

In a former number, we alluded to a Table which Lieutenant Raper, R.N., was constructing, at the suggestion of Captain Beaufort, R.N., the Hydrographer to the Admiralty, to enable navigators to determine their distance from an object by inspection; and it is of so useful a nature, that we have copied it into our own pages. The navigator will find it particularly applicable in obtaining a correct departure, where *estimated distance* was formerly adopted,

TABLE.

For finding the Distance of an Object, by two Bearings and the Distance run between them.

Difference between Course and 2nd Bearing in Points.	DIFFERENCE BETWEEN THE COURSE AND FIRST BEARING IN POINTS OF THE COMPASS.																
	2 2½	3 3½	4 4½	5 5½	6 6½	7 7½	8 8½	9 9½	10								
3½	1·																
4	1·00																
4½	0·81	1·23															
5	0·69	1·00	1·45														
5½	0·60	0·85	1·17	1·66													
6	0·54	0·74	1·00	1·35	1·85												
6½	0·49	0·67	0·88	1·14	1·50	2·02											
7	0·46	0·61	0·79	1·00	1·27	1·64	2·17										
7½	0·43	0·57	0·72	0·90	1·11	1·39	1·77	2·30									
8	0·41	0·53	0·67	0·82	1·00	1·22	1·50	1·87	2·41								
8½	0·40	0·51	0·63	0·76	0·92	1·09	1·31	1·58	1·96	2·50							
9	0·39	0·49	0·60	0·72	0·85	1·00	1·18	1·39	1·66	2·03	2·56						
9½	0·38	0·48	0·58	0·69	0·80	0·93	1·08	1·25	1·46	1·72	2·08	2·60					
10	0·38	0·47	0·57	0·66	0·76	0·88	1·00	1·14	1·31	1·51	1·76	2·11	2·61				
10½	0·38	0·47	0·56	0·65	0·74	0·84	1·06	1·19	1·35	1·55	1·79	2·12	2·60				
11	0·39	0·47	0·56	0·64	0·72	0·81	0·90	1·00	1·11	1·24	1·39	1·57	1·80	2·11	2·56		
11½	0·40	0·48	0·56	0·63	0·71	0·79	0·87	0·95	1·05	1·15	1·27	1·41	1·58	1·79	2·08	2·50	
12	0·41	0·49	0·57	0·64	0·71	0·78	0·85	0·92	1·00	1·08	1·18	1·29	1·41	1·57	1·76	2·03	2·41
12½	0·43	0·51	0·58	0·65	0·71	0·77	0·83	0·90	0·97	1·03	1·11	1·20	1·29	1·41	1·55	1·72	1·96

The Table is to be entered with the number of points contained between the ship's head and the *first* bearing of the object, at the top, and with the number of points, reckoned the same way, between the ship's head and the *second* bearing, at the side; the number in the table at the intersection of the two columns being multiplied by the distance run, is the distance from the object at the time the *last* bearing was taken.*

EXAMPLE:—The Eddystone bears N.W., and after running WbS. 8 miles, it bears N.N.E.; the number of points between WbS. and N.W. is 5, and that between WbS. and N.N.E. is 11, then under 5 points at the top, and abreast of 11 points at the side, stands the number 0.9, which being multiplied by 8 gives 7.2 miles, the distance at the time of the *last* (N.N.E.) bearing.

If the bearings are observed to quarter points, the numbers may be taken out accordingly. This needs no example.

* The number in the Table is the value of the expression $\frac{\sin A}{\sin (B-A)}$, where A is the number of points at the top, and B that at the side.

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

THE King has added another to the many gracious acts by which His Majesty has distinguished his reign, and which must be gratifying to the Navy in general. The earl of Dundonald, (formerly Lord Cochrane,) has been reinstated in that profession in which his brilliant services during the war were well known and appreciated. His Majesty has been graciously pleased to restore him to his rank in the Navy, and his Lordship's name is placed on the list of Rear-Admirals of the Blue, next to the Hon. George Dundas.

It is a painful part of our duty to record the departure of old and faithful servants from the public service of their country, whether that service may have been in a civil or a military character. We were led to this observation by the following recent changes which have taken place in the Admiralty. The chief clerk, John Dyer, Esq., after a servitude of forty-two years, thirty-nine of which have been passed at the Admiralty, was superannuated on the 11th ult. Mr. Dyer was succeeded in the office of chief clerk by H. F. Amedroz, Esq., a senior clerk. R. Riley, Esq., has also retired on reduction, the number of seniors being altered from seven to six. And Thomas Darch, Esq., senior clerk, has been superannuated, after a period of thirty-six years' service. The vacancies occasioned by the promotion of Mr. Amedroz, and the retiring of Mr. Darch, have been filled by John Rouse and Louis Biggs, Esqrs.

We regret to find, that the offer of Dr. Richardson, to proceed with a small party in search of Capt. Ross, and at the same time to explore a part of the unknown coast of North America in the Polar Sea, is for the present entirely set aside. The offer of Dr. Richardson was to proceed through the country from Hudson's Bay to

Coronation Gulf, and from Cape Turnagain, the extent of his former travels, to continue to the eastward, towards the Straits of the Fury and Hecla. In this part of the coast there would be every probability of his receiving some account of Capt. Ross and his vessel, from the Esquimaux Indians, if, as the *Athenæum* observes, he should not have already passed through Bhering's Strait.

No further cases of cholera having recently appeared, clean bills of health are again granted to ships from the Port of London.

A Correspondent has favoured us with the following, on the subject of the Diving Apparatus alluded to in our last number.

To the Editor of the Nautical Magazine.

SIR,—In consequence of Mr. Murray's letter, which I find in page 149 of your 3d Number, I beg leave to send you the following extract from the Philosophical Transactions; it is taken from a paper of Dr. Halley's, vol. xxix. (1716,) p. 492. I have not the original at hand, and I therefore copy from the abridgment, vol. vi. p. 259.

"WHEN there has been occasion to continue long at the bottom, some have contrived double flexible pipes, to circulate air down into a cavity enclosing the diver as with armour, to bear off this pressure of the water, and to give leave to his breast to dilate on inspiration: the fresh air being forced down by one of the pipes with bellows or otherwise, and returning by the other, not unlike an artery and vein. This has indeed been found sufficient for small depths, not exceeding twelve or fifteen feet, but when the depth surpasses three fathoms, experience teaches us that this method is impracticable: for though the pipes and the rest of the apparatus may be contrived to perform their office duly, yet the water, its weight being now become considerable, so closely embraces and clasps the limbs that are bare, or covered with a flexible covering, that it obstructs the circulation of the blood in them; and presses with so much force on

all the junctures, where the armour is made tight with leather, or skins, or such like, that if there be the least defect in any of them, the whole engine will instantly fill with water, which rushes in with such violence as to endanger the life of the man below, who may be drowned before he can be drawn up. On which account, the danger increases with the depth."

The same contrivance, with more particulars, and a plate to illustrate them, may be seen in 'Clare on the Motion of Fluids,' p. 186 of the 3d edition, plate viii. which was published in 1747. Mr. Murray need not, therefore, be afraid of any patents being granted for this invention; but as he must, if he reads this account, be conscious of his own idea not being new to the public, he will see that it may have occurred again to another, who was as little aware of his experiments at Hull, as he was of Dr. Halley's publication. Nothing is more common than for the same plan to be independently suggested by ingenious men.

May 21, 1832.

N. R. D.

On the 4th of May, at eleven o'clock, their Majesties and suite, in seven royal carriages, left St. James's Palace, on a visit to Woolwich and Greenwich, preceded by a detachment of the 9th Lancers, and escorted by a troop of the same regiment. Among the members of the Royal Family who accompanied their Majesties, were their Royal Highnesses the Dukes of Cumberland and Gloucester, the Duchess of Cumberland, the Princess Augusta, and the two young Princes of Cambridge and Cumberland. In their suite were Lord Hill, Lord Combermere, Lord Byron, Lord A. Beauclerc, Lord F. Fitz Clarence, Lady A. Fitz Clarence, Madame D'Este, and the Marchioness of Westmeath. At twelve o'clock the royal party arrived at Woolwich, and were received by the military with the honours due to royalty. His Majesty, after a graceful acknowledgment of the enthusiastic acclamations with which he was received by the multitudes assembled on the occasion, proceeded to inspect the various parts of the

dockyard, accompanied by Sir James Graham and the Hon. Capt. Elliott. The miniature frigate, *Royal Louisa*, launched on the 2d inst. and intended as a present to the king of Prussia, principally attracted His Majesty's attention. After passing a short time in the dockyard, the royal party embarked in barges, amidst an assemblage of vessels on the river, which, being crowded with company, and displaying flags, produced a pleasing and animating effect. Although the weather appeared unfavourable, His Majesty, with his usual anxiety to gratify his subjects, refused to enter a covered boat, and, with Her Majesty, proceeded up the river in an open barge. Their Majesties landed at Greenwich at ten minutes past two, and were received by Sir R. Keats, the governor, and the officers of the Hospital, under a royal salute from the Park, and amidst the cheers of assembled crowds, of every rank and profession. After seeing the children of the Greenwich Asylum, His Majesty inspected the pensioners, who were drawn up for that purpose; and at five o'clock the royal party, attended by the former escort, left Greenwich, and arrived at St. James's Palace at six o'clock.

By the extract of a letter from Captain Dickinson, with which we have been favoured, dated 15th February, it appears that he had succeeded in recovering the anchors and chain-cable, and some of the guns, of His Majesty's late Ship *Thetis*.

H.M.S. *Vernon* was launched at Woolwich on the 1st of May. We believe it was the intention of His Majesty to have witnessed this imposing spectacle, but the weather was too unfavourable to admit of it, and, consequently, produced much disappointment. Every thing being in readiness, at a quarter before two o'clock this magnificent vessel moved off her slip in graceful style, and descended into the river, amid the firing of cannon, and the huzzas of the spectators.

In consequence of the strength of the tide, she fell alongside the Sheer hulk, and sustained some trifling damage by the shock. The *Vernon* is a noble specimen of architecture, built on the principle of Capt. Symons, and under his immediate inspection; her figure-head is a full-length representation of Admiral Vernon, with the motto, "*Vernon semper vires*," on her stern. The following are her dimensions—

	ft.	in.
Spar deck	188	0
Main deck	183	0
Lower deck	176	0
Height between decks	7	0
Length between perpendiculars	176	0
Keel for tonnage	144	6½
Extreme breadth	52	8½
Moulded	51	4½
Depth of hold	17	1
Measured tonnage	2,082	15-94

She is to mount 50 thirty-two pounders.

The *Thunderer*, 84, Capt. Colby, was paid off on-the 27th April.

NAVAL INTELLIGENCE.

(From the Naval Papers.)

THE ROYAL NAVY IN COMMISSION.

••. S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

ACTÆON, 26—Hon. F. W. Grey, 28th Mar. at Constantinople.
ÆTNA, S. V. 6—Com. E. Belcher, 2d Feb. R. Gambia.
AFRICAN, St. V. 1—Lt. J. Harvey, Woolwich.
ALBAN, St. V.—Lieut. H. Walker, (a) April, at Constantinople.
ALFRED, 50—Capt. R. Maunsell, 2d April, at Malta.
ALLIGATOR, 28—Capt. G. R. Lambert, 16th Feb. arrived Cape Good Hope; 22d Feb. sailed for India.
ALGERINE, 10—Com. Hon. J. F. F. De Roos, March, at C. Frio.
ARACHNE, 18—Com. W. G. Agar, 14th Feb. sailed from Port Royal for Montego Bay.
ARIADNE, 28—Capt. C. Phillips, 24th Jan. sailed from Bermuda 14th Feb. at Port Royal.
ASIA, 84—Capt. P. Richards. Flag of Adml. Parker, 15th April, Tagus.
ASTREA, 8—Capt. W. King, Falmouth.
BADGER, 10—Com. G. F. Stowe, 28th Jan. at Mauritius.
BARHAM, 50—Capt. H. Pigot, 2d April, at Constantinople.
BEACON, (late *METEOR*),—Com. R. Copeland, 3d May, commissioned at Portsmouth.
BEAGLE, 10—Com. R. Fitz-Roy, 28th Feb. arrived at Bahia; 4th March, sailed for Rio.
BELVIDERA, 42—Capt. Hon. R. S. Dundas, 23d March, Nap. di Romania.
BLANCHE, 46—Capt. A. Farquhar, K. H. C. B. 18th Feb. at Port Royal, Jamaica.
BLOSSOM, S. V. 16—Com. R. Owen, 26th Mar. at Port Royal, Jamaica.
BRISK, 3—Lieut. E. H. Butterfield, 31st Jan. sailed from Sierra Leone for Accra.
BRITANNIA, 120—Capt. P. Rainier, 24th May, sailed for Lisbon.
BRITON, 46—Capt. J. D. Markland, C. B. 24th April, arrived at Portsmouth.
CALEDONIA, 120—Capt. J. Hillyar, Plymouth.
CASTOR, 36—Capt. Sir R. Grant, Kt. Chatham.
CHALLENGER, 28—Capt. C. H. Freemantle, 30th Nov. Singapore, from Madras.
CHAMPION, 18—Com. F. V. Cotton, 2d April, arrived at Barbadoes from Bermuda.
CHARYBDIA, 3—Lieut. R. B. Crawford, 27th Jan. at S. Leone; 31st Jan. sailed for Accra.
CHILDERS, 18—Com. R. Deans, 15th April, at Lisbon.

CLIO, 18—Com. J. J. Onslow, Nov. Callao.
COLUMBIA, St. V. 2—Lt. R. Ede, Woolwich.
COLUMBINE, 18—Com. O. Love, 20th Dec. Jamaica.
COMET, 18—Com. A. A. Sandilands, 27th Nov. arrived at Madras from Sydney.
COMET, St. V.—Woolwich.
CONFIANCE, St. V. 2—Lieut. H. F. Belson, Portsmouth.
CONFLICT, 12—Lieut. G. Smithers, 10th March, Lat. 7° S. Long. 16° W. from Ascension.
CONWAY, 28—Capt. Eden, 13th May arrived at Portsmouth, and sailed 25th.
CORDELIA, 10—Com. C. Hotham, 23d March at Nap di Romania.
CRACKER, 1—Lieut. J. P. Roepel, Home cruiser.
CROCODILE, 28—Capt. J. W. Montagu, 26th Dec. left Madras for Trincomalee.
CRUIZER, 18—Com. J. Parker, 18th Dec. at Calcutta.
CURAÇOA, 26—Capt. D. Dunn, 10th March arrived at Cape of Good Hope.
CURLEW, 10—Com. H. D. Trotter, 20th Feb. arrived at Cape of Good Hope; 7th March, Simon's Bay.
DONEGAL, 74—Capt. J. Dick, 20th April, arrived at Spithend.
DRUID, 46—Capt. G. W. Hamilton, C. B. 17th Jan. at Rio.
DRYAD, 42—Capt. J. Hayes, C. B. 3d Feb. left Sierra Leone for Accra.
DUBLIN, 50—Capt. Rt. Hon. Lord J. Towns- end, 22d Jan. left Rio for Pacific.
FAIRY, S. V. 10—Com. W. Hewett, surveying North Sea.
FAVOURITE, 18—Com. J. Harrison, January, R. Gambia.
FIREBRAND, St. V.—Lieut. T. Baldock, Fal- mouth.
FIREFLY, 2—Lieut. J. M'Donnel, 19th March sailed from Havana for Nassau.
FLAMER, St. V.—Lieut. R. Bastard, Woolwich.
FLY, 10—Com. P. M'Quhae, 5th Feb. sailed from Madeira; 1st March, arrived at Ber- muda.
GANNET, 18—Com. M. H. Sweney, 14th Feb. Port Royal, Jamaica.
HARRIER, 18—Com. H. L. S. Vassal, 2 April arrived at Madeira; 3d, sailed for India.

- HERMES**, St. V.—Lieut. A. Kennedy, Woolwich.
HYACINTH, 18—Com. W. Oldrey, 17th Jan. Montego Bay, 14th Feb. Port Royal.
IMOGENE, 18—Capt. P. Blackwood, 22d Jan. sailed from Rio 16th Feb. arrived at Cape 22d Feb. sailed for India.
INVESTIGATOR, 16—Mr. G. Thomas, 16th May, at Ramsgate.
ISIS, 50—Capt. J. Polkinghorne, 31st Jan. sailed for Accra and Fernando Po.
JASKUR, 18—Com. F. Harding, 25th Jan. arrived at Mauritius.
KANGAROO, 3—Lieut. J. Hookey, 8th March arrived at Port Royal Jamaica.
LEVERET, 10—Lieut. W. F. Lapidge, 7th April arrived at Madeira, 1st May returned to Plymouth.
LIGHTNING, 18—Com. T. Dickinson, on her way home.
LIGHTNING, St. V.—Woolwich.
MADAGASCAR, 46—Capt. E. Lyons, 5th Mar. arrived at Malta; 26th March, sailed for Smyrna.
MAGICIENNE, 14—Capt. J. H. Plumridge, arrived at Rio 31st Dec. and sailed for India 5th Jan.
MAGNIFICENT, 4—Lt. J. Paget, Port Royal.
MAIDSTONE, 42—Capt. C. M. Schomberg, 14th March at Rio, on her way home.
MASTIFF, 6, S.V.—Lieut. J. Graves, Portsmouth.
MELVILLE, 74—Capt. H. Hart, 3d Feb. arrived at Tenerife. Flag-ship, V.-Adm. Sir J. Gore, K.C.B.
MESSENGER, St. V.—Lieut. B. Aplin, Woolwich.
MINX, 3—Lieut. J. Simpson, Port Royal.
NAUTILUS, 10—Com. Rt. Hon. Lord G. Paulet, Feb. 21st, at Oporto from Cork.
NIMBLE, 5—Lieut. J. M. Potbury, Bahama Islands.
NIMROD, 20—Lord E. Russell, Plymouth.
NORTH STAR—Capt. Hon. G. W. Trefusis, 14th Feb. at Port Royal.
OCEAN, 80—Capt. S. Chambers. Flag-ship, Sheerness, V.-Adm. Sir J. P. Bercsford, Bt. K.C.B.
ONYX, 10—Lieut. A. B. Howe, Cork.
ORSTES, 18—Com. W. N. Glasscock, Irish Station.
PALLAS, 42—Capt. W. Walpole, 14th March arrived at Barbadoes from Trinidad.
PEARL, 20—Com. R. Gordon, 8th March, sailed from Plymouth.
PELICAN, 18—Com. J. Gape, 22d April, at Patras.
PELORUS, 18—Com. R. Meredith, 31st Jan. arrived at S. Leone, and sailed for Accra.
PHILOMEL, 10—Com. W. Smith, 15th April, at Gibraltar.
PICKLE, 5—Lieut. T. Taplen, 5th Feb. arrived at Para.
PIKE, 12—Lt. A. Brooking, coast of England.
PINCHER, 5—Lt. W. S. Tulloh, Bahamas.
PLUMPER, 12—Lieut. T. Cresser, 18th Jan. River Gambia.
PLUTO, St. V.—Lieut. G. Buchanan, 3d Feb. arrived at Sierra Leone; 7th Feb. sailed for Accra.
PROCRIS, 10—Com. J. T. Talbot, 25th March, left Malta for Algiers and England.
PSYLLADE, 18—Com. E. Blankley, 24th March, sailed from Pernambuco.
RACEHORSE, 18—Com. C. H. Williams, 2d April, left Barbadoes; 20th April, arrived at Halifax, from Bermuda.
RAINBOW, 28—Capt. Sir J. Franklin, Knt. 2d April, Corfu.
RALEIGH, 18—Com. A. M. Hawkins, 3d April, at Malta.
RAPID, 10—Com. C. H. Swinburne, 23d Mar. Nap. di Romania.
RATTLESNAKE, 28—Capt. C. Graham, 2d Dec. sailed from Rio.
RAVEN, S.V. 4—Lieut. W. Arlett, Africa.
RECRUIT, 10—Lt. T. Hodges, 11th April, sailed for Halifax.
REVENGE, 78—Capt. D.H. Mackay, 15th April, Tagus.
ROSE, 18—Com. E. W. Pilkington, 2d April, at Bermuda.
ROYALIST, 10—Lieut. R. N. Williams, Oporto.
ST. VINCENT, 120—Capt. H. P. Senhouse, 29th Mar. Nap. di Roma. Flagship V.-Adm. Sir H. Hotham, K.C.B., &c.
SAMARANG—28, Capt. C. H. Paget, 4th Mar. at Bahia.
SAN JOSEF, 110—Capt. R. Curry, Plymouth, Flag-ship Admiral Sir M. Dixon, K.C.B.
SAPPHIRE, 28—Capt. Hon. W. Wellesley, 28th Feb. arrived at Para, left 8th March, 15th March arrived at Barbadoes.
SCYLLA, 18—Com. Hon. G. Grey, 23d March, at Napoli di Romania.
SERINGAPATAM, 46—Capt. Hon. W. Waldegrave; 21st Jan. at Islay, on way home.
SKIPJACK, 5—Lieut. W. Shortland, Bahamas.
SNAKE, 16—Com. W. Robertson, Woolwich.
SOUTHAMPTON, 52—Capt. J. M. Laws, 17th Sept. at Madras.
SPARROWHAWK, 18—Com. D. Mayne, 17th Jan. at Montego Bay.
SPEEDWELL, 5—Lt. W. Warren, Nassau.
STAG, 46—Capt. Sir T. Trowbridge, 8th April, arrived at Madeira.
SULPHUR, 8—Com. W. T. Dance, King George Sound, Australia.
SWAN, 10—Lieut. J. E. Lane, North Sea.
SYLVIA, 1—Lieut. T. Spark, North Sea.
TALAVERA, 74—Capt. S. Brown, sailed 24th Mar. for Plymouth.
TALBOT, 28—Capt. R. Dickinson, C. B. 28th Jan. at Mauritius.
TRINCULO, 18—Com. R. Booth, commissioned 18th May, at Plymouth.
TWEED, 23—Com. A. Bertram, 15th Feb. at Jamaica.
TYNE, 28—Capt. C. Hope, 18th March, left Pernambuco for Rio Janeiro.
UNDAUNTED, 46—Capt. E. Harvey, 7th Mar. in Simon's Bay.
VERNON, 50—Capt. Sir F. Collier, Knt. Woolwich.
VICTOR, 18—Com. R. Russell, 18th March, arrived at Bermuda.
VICTORY, 104—Capt. H. Parker. Flag-ship Admiral Sir T. Foley, G. C. B. Portsmouth.
VIPER, 6—Lieut. H. James, Sheerness Station.
VOLAGE, 28—Capt. Right Hon. Lord Colchester, Pacific.
WARSPITE, 76—Capt. C. Talbot. Flag-ship Adm. Sir T. Baker, K.C.B., March, at Rio.
WINCHESTER, 52—Capt. Rt. Hon. Lord W. Paget, 2d April, left Bermuda for Barbadoes. Flag-ship Vice-Adm. Sir E. G. Colpoys.
WOLF, 18—Com. W. Hamley, 21st Feb. arrived at Ceylon.
ZEBRA, 18—Com. D. De Saumarez, 6th Dec. at Sydney.

The *Ranger*, 28, Captain M. H. Dixon, was paid off at Plymouth, on 7th May, and the *Satellite*, 18, was paid off on 11th May, at the same place.

His Majesty's surveying vessel *Mastiff* was paid off all standing on the 10th May, on which occasion the crew presented to Sergeant Edward Constant, R.M. a handsome uniform sabre and a silk sash, for his impartial and upright conduct during the time he was embarked in the *Mastiff*.

His Majesty's ship *Trinculo*, 18, was commissioned by Commander J. R. Booth on Wednesday, the 18th May, at Plymouth. The *Trinculo* having undergone various alterations at Plymouth, since she was paid off, it is supposed, that she will primarily cruise with the experimental ships, and then proceed to foreign service.

The *Savage*, 10, was paid off into Ordinary at Plymouth on 28th April, and the *Nimrod*, 18, was commissioned at Plymouth by Lord John Russell, on the following day.

The *Royal Louisa*, a most beautiful model of a 32-gun frigate, intended as present to the King of Prussia, was launched on 1st May at Woolwich. The ceremony of naming the vessel was performed in the presence of several hundred spectators by the Lady of Oliver Lang, Esq. the Master Shipwright. The whole of the inside of the vessel is of polished mahogany; her cabin is inlaid with plate glass, and her stern is surmounted with a beautifully executed figure of a black eagle, the national emblem of Prussia. She is copper-bottomed and fastened. Her length is fifty-five feet six inches; breadth, twelve feet; depth in hold, eight feet ten inches. Her register tonnage, thirty tons.

H. M. S. *Briton*, 46, Capt. J. D. Markland, C.B. went into Dock at Portsmouth on 30th April, and was taken out on 16th May. Her refitment is proceeding with all despatch, for the purpose of returning to the Tagus. She will sail in about ten days.

The following Midshipmen have been found duly qualified in Navigation, at the Royal Naval College, viz.:

—Mr. Wm. Harvey, of H.M.S. *Talavera*; Mr. W. F. Robinson, of H.M.S. *Ranger*; Mr. Thomas Sibbald of H.M.S. *Donegal*; Mr. James Watson, late of H.M.S. *Tribune*; and Mr. R. J. C. Benn, late of H.M.S. *Shannon*. Mr. Wm. Harvey, Midshipman of the *Talavera*, has been found qualified in seamanship to serve as a Lieutenant in the Royal Navy.

By a letter from the West Indies, dated the 8th of April, we regret to learn that H.M.S. *Racehorse*, 18, Com. C. H. Williams, had been attacked by a virulent disease, having some of the symptoms of cholera-morbus. Within forty-eight hours from its first appearance, no less than five of her officers and thirty-two of her men were attacked, but on the date of the letter only three officers and nineteen men were on the list. The disease does not appear to have assumed that violent form which it has in many parts of Europe, only four cases having proved fatal up to the date of the letter. The *Racehorse* had been placed under quarantine at St. Kitt's.—*Portsmouth Herald*.

At the Anniversary of the Royal Humane Society, held on the 11th April, medallions were presented to those individuals who had, under any remarkable circumstances, saved the life of a fellow-creature. The first was given to Lieut. Leigh, R.N., of the Winterton coast-guard, by whose exertions principally the crew of the *Henry*, wrecked on the Ness, were saved. Mr. Leigh returned thanks. The second was given to Mr. B. Wake, aged 17, midshipman, in H. M. S. *Falcon*, who, with John Hogan, leaped overboard, and saved the life of a seaman off Bermuda, the sloop being then sailing at the rate of four knots an hour. Mr. Wake returned thanks. The third was presented to Mr. George Loder, apparently 18 or 20, who saved Miss Crocker and Miss C. Anthony on the *Ton*, Devonshire, in a manner very creditable to his courage and energy. Miss A. Anthony was drowned on the same occasion. Mr. Loder returned thanks. The fourth was presented to Master Alexan-

der, who saved a brother Etonian, Master Ford. He dived repeatedly to the bottom of Dead Man's-hole before he found him. Master Alexander returned thanks. The fifth was presented to Sir F. Ommanney, on behalf of Lieut. Liardet, of H. M. Sloop *Jaseur*, who saved John M'Mahon, off the Cape of Good Hope, and subsequently that of Mr. Dunlop, a midshipman, on the coast of Africa, the ship being then going at the rate of seven knots an hour, and several sharks having been around her the whole day. The sixth was presented to a gentleman on behalf of Master Henry Worrall, Limerick, aged 14 years, who, in a manner displaying great coolness and courage, saved two boys, one ten, the other seven years old. The boat in which all three were overturned, but having righted, young Worrall, attached the other boys to it until assistance was procured. The seventh was presented to a gentleman on behalf of Mr. Mattacott, a clerk in His Majesty's Dock-yard, Devonport, who, with his clothes on, swam to and saved three boys, two of 14, and one of 12 years of age. It was stated that Mr. Mattacott's circumstances did not allow him to bear the expense of attending the dinner. The eighth was presented to W. Vielson, a man of colour, gun-room steward on board His Majesty's ship *Nimrod*, who saved two men, one under circumstances exceedingly honourable to him. He returned thanks.

Wisbech, April 25.—A work of some magnitude has been undertaken

by a small party of bankers in this neighbourhood, which has been a matter of speculation for above half a century, and has excited a considerable degree of curiosity. During the awful storm, known as the New Year's Gale, in 1781, a brig called the *Nelly*, said to have been laden with coals and grinding-stones, which was lying on the Lincolnshire side of Sutton Wash, was driven from her moorings, and after beating about for some time she sunk, and, like King John's baggage, was soon buried in the quicksands, leaving only her masts visible, one of which was shortly after taken away, and the other, being by law obliged to be left standing, has ever since been known by the name of the Old Wreck's Mast. In consequence of the Nene Outfall cut, those once dangerous sands are become dry land, and the expectation of finding a rich prize has induced the individuals above alluded to to undertake the work in question. They ascertained that her depth below the surface was 14 feet to her decks, which they expect to reach to-morrow night. The curious are eagerly looking for some relic of the unhappy monarch's last sorrow.—*Cambridge Chronicle*.

Gigantic Fish.—On Tuesday the 17th May, an eel of extraordinary size was taken in a stake net, at Petty, near this town; the length of the fish was 5½ feet, and it weighed 32½ lbs. The same day, a halibut (a rare fish in our frith) was caught at Rosemarkie, which weighed 70 pounds.—*Inverness Courier*.

MOVEMENTS OF TRANSPORTS.

Amphitrite, Lieut. Cooley, 26th April, arrived at Chatham from Portsmouth.

Arab, Lieut. Harris, 10th May, arrived at Portsmouth from Leith.

Hope, Lieut. Ryder, 15th May, arrived at Portsmouth from Sheerness.

Industry, Woolwich.

Leonidas, Lieut. Woolridge, 12th March, arrived at Antigua; 15th March, sailed for St. Christopher's.

Maitland, 1st May, arrived at Portsmouth from Jamaica; 8th May sailed for Woolwich.

Marquis Huntley, Woolwich.

Neva, Lieut. Adamson, Woolwich.

Orestes, Lieut. Garret, 15th May, sailed from Cork for Quebec.

Parmelia, Lieut. Sanders, 25th April, arrived in the Downs.

Roslin Castle, Lieut. Derriman, 25th April, arrived at Jamaica in a damaged condition.

Stentor, Lieut. Garret, 23d May, arrived at Portsmouth from Gibraltar.

William Harris, Lieut. Stevens, 25th April, arrived at Portsmouth; 3rd May, arrived at Sheerness.

EAST INDIA SHIPPING.

On the 24th of April, despatches for China, by the ships, *Edinburgh*, Captain D. Marshall, and the *Berwickshire*, Captain H. L.

Thomas, were closed at the East India House, and delivered to the pursers of those ships.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 156.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
164 Agos	Murphy	Liverpool	Pernambc.	I. Itamarica	21 Feb.	6736 Cgo. pt. sav.
165 Ann	Fowler	St. John's, Newfdl.			14 Dec.	6742 Dbitul. Not heard of since.
166 Augusta	Dinse	Stettin	Lynn	Whiting Sd.	26 April	6738 Crew saved.
167 Bellona	Smith	Trieste	Odesa	Catena, Adr.	3 April	6737 Crew saved.
168 Betsey	Salisbury	Liverpool		Cayenne	5 Feb.	6763 Vessel sunk.
169 Cholmley	Robinson	Shields	S. Petersburg	Sowerby	10 May	6742 Crew saved.
170 Eclipse	Davies	London	C. G. Hope	Palma, C.V.	31 Jan.	6747 Pass. 4 drwd.
171 Enterprise	Salter	Savana	Jamaica	Watling I.	9 Mar.	6740 Crew saved.
172 Fanny	De Vries	St. Ubes	Emden	BockmR. Hol	24 April	6741 Master drwd.
173 Fanny	Parry	Chester		Off Bumaria.	1 May	6739 Foundered.
174 Fowey	Weuner	Lancaster		Off Filey	23 April	6737 Run foul of.
175 Friends Adv.	Douglas		Hull	Off Shields	30 April	6739 Bgd. on a rock
176 Hannah	Rowen	Pullochery	Liverpool	Killala B.	22 April	6737 Aground.
177 Happy Ret.	Nelmes	Pr. Ed. Isd	Barbadoes	Gut Canoe	6 Dec.	6739 Crew saved.
178 Hebe	Lingard		C. G. Hope		16 Aug.	6739 Crew saved.
179 Jaes	Garrat	Larne	Liverpool	Off I. Man	20 April	6739 Mt. only drd.
180 Lavinia	Davis	Vera Cruz	New York	Colorado	16 Feb.	6736 Cw. & spe. sd.
181 Mars	Wade	Shields		Hasboro' Sd.	30 April	6739 Crew saved.
182 Mary	Hughes	Aberystwh.		Bardeck	6 May	6741 Crew saved.
183 Mary Ann	Halbert	Rostock	London	Off Whitby	25 April	6737 Crew saved.
184 Mary Eliza	Davis	Liverpool	Bremen	Haaka	24 April	6737
185 Nerid		Wigtown	America	Wigtown B.	May	Crew saved.
186 Ospra	Bock	Havana	Hambro'	Near Lizard	6 May	6740 1 drowned.
187 Po	Billing	London	Bristol	Off Ramagts.	12 May	6742 Cw. pt. cgo. sd.
188 Resolution	Walker	Stockton	Boston	Off Scarborough	25 April	6738 All saved.
189 Rose		Limerick	Liverpool	Tory Sound	2 May	6740
190 Royal Recov		Youghall	Cardiff	Off Smalls	22 April	6737 Fodrd. Cw. sd.
191 Rumford	Hamilton	N. Orleans	Liverpool	Ballybegue	23 April	6737 Crew saved.
192 Zyllah	Martin	Dundee	S. Domgo.	Fornigas	8 April	6737 Crew saved.

VESSELS DETAINED BY ACCIDENTS, &C.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Alcona	Harrison			Yarmouth	3 May	6740 Been aground
Ann	Ritchie	Newport	Cramond	Bridlington	19 Apr.	6763 Been aground
Bee	Nicholls	Hamboro'	London	Cuxhaven	13 May	6743 Been aground
Blume	Bass	Trieste	Rostock	Lubeck.	11 May	6742 Been aground
Brompton	Willinger	Cardiff	Newcastle	Milford	2 May	6730 Damaged.
Clarise	Bienvenu	Campeche	Bordeaux	Campeche	24 Feb.	6741 Leaky.
Dolphin	Roberts	Ballyshan.	Liverpool	Islay	18 Apr.	6737 Leaky.
Eleanor	Edwards	Aberdovey		Pembrey	14 May	6743 Been aground
Eliza	Morrison	Aberdeen		Yarmouth	4 May	6740 Run foul of.
Elizabeth	Haake	Charleston	Bremen	Harlingen	5 May	6741 Been aground
Emmanuel	Lunemark	London	Norway	Harwich	12 May	6742 Very leaky.
Eudymion	Smith	Glos. U.S.	Quebec	Penzance	14 May	6743 Very leaky.
Fort William	Neesh	China	Manilla	Singapore	11 Nov.	6736 Dismasted.
Foundling	M'Kecknie	Demerara	Clyde	Near Arklow	22 Apr.	6737 Aground.
Hanrietta	Owen		C. Breton	Liverpool	12 May	6742 Been aground
Herschell		Havana	Cowes	New York	7 Apr.	6740 Damaged.
Hope	Greig	Liverpool	Nwfdland.	Islay	21 Apr.	6737 Damaged.
Ivory Lord	Farley	Cadis	Castine, U.S	Portland, U.S	8 April	6743 Been aground
Lady Augusta	Somickson	Kiel	Drtfd. Crk.	Fredhaven.	8 May	6742 Been aground
Louisa	Hume	Greenock	S. Jno. N.B.	Off Baringto.	4 Apr.	6742 Agd. full wr.
Mauda	Liddle	Shields	L'Orient	Shields	16 May	6743 Been aground
Migvie	Murray	Liverpool	Madeira	Liverpool	29 Apr.	6738 Run foul of.
Montrose		Liverpool	Antigua	Liverpool	27 Apr.	6738 Been aground
Muta	Brown	Bremen	Bremen	Mataozas	27 Feb.	6736 Leaky.
Nancy	Guezenc	Calcutta	Bordeaux	Calcutta	3 May	6741 Leaky.
Oscar	Lawson	Montrose	Riga	Off Windau	1 April	6737 Stranded.
Pallas	Terry	Newcastle	Stettin	Elsinore	21 Apr.	6738 Been aground
Pandora		Barbadoes	Liverpool	St. Lucia	30 Mar.	6741 Leaky.
Rover	Darnell	London	Bordeaux	Cowes	29 Apr.	6738 Leaky.
St. George	Wells	Bengal	Bristol	Cape G. Hope	26 Feb.	6739 Damaged.
Sperth	Surlock	Bangor	London	Milford	2 May	6739 Dam. & leaky
Twee Gebroeders	Klein	Amsterdam	New York	Egersound	16 April	6738 Damaged.

The *Excellent*, 50, exercising ship in Portsmouth harbour, is to bear, as part of her complement, fifteen mid-shipmen, who have either passed their

examination, or who are within a year of having served their full time, and who are to be appointed by the Admiralty.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
Abeona		Barbadoes	Liverpool	34 N 49 W	15 April	6739
Agnes		Leith	N. S. Wales	6 N 24 W	1 Mar.	6736
Anna		Jamaica	London	Wind. Pass.	11 April	6741
Asia	Bathie	London	Mad. & Chi.	3 N 20 W	5 Mar.	6738
Athens	Hooper	Antwerp	Savana	38 N 45 W	24 April	6742
Aurora			Off Java Id.		7 Jan.	6737
Bashaw		Cadiz	Havana	23 N 33 W	23 Mar.	6736
Beaufort	Sainthill	London	Jamaica	22 N 41 W	19 April	6741
Benanza	Clark		Valparaiso	47 S 52 W	22 Feb.	6741
Ben Ruggles		Marseilles	N. Orleans	32 N 14 W	13 April	6739
J. Biggar		London	Singapore	1 S 23 W	18 Feb.	6741
Bourbon		New Bedfd.		5 N 1d W	20 Mar.	6737
Bristol		Bristol	New York		4 April	6736
Briton				5 N 18 W	18 Mar.	6737
Briton			St. Domin.	27 N 40 W	16 April	6736
Cambria		Pernambuc	Cork	32 N 39 W	15 April	6739
C. Campbell		Gibraltar	St. Thomas	19 N 51 W	1 April	6741
Canada		Liverpool	New York	50 N 21 W	9 April	6736
Captain Cook				41 S 13 W	11 Dec.	6742
Captain Cook			N. S. Wales	32 S 14 E	2 Feb.	6736
Ceylon	Davison	London	Sydney	2 N 22 W	29 Feb.	6737
Chance			Havre	51 N 16 W	16 April	6736
Circostance	Amand	New York	Marseilles	36 N 19 W	25 Mar.	6738
Clio		Liverpool	New York	43 N 38 W	29 Mar.	6737
Colossus		Liverpool	Philadelph.	41 N 49 W	19 Mar.	6736
Cora		London	Smyrna	Off Sardinia	2 April	6741
Cove		Uracombe	New York	45 N 22 W	25 April	6741
Dolphin		Liverpool	Newland.	50 N 29 W	18 April	6738
Elizabeth		Honduras	London	40 N 63 W	20 April	6742
Ellen		Dundee		39 N 24 W	7 April	6737
Emma	Cobb	Hull	Rio Janeiro	3 N 22 W	23 Mar.	6737
Europa	Kingsbury	Messina	New York	40 N 62 W	21 April	6742
Favourite				19 N 38 W	7 April	6739
Frank	Searight	Liverpool	Valparaiso	2 S 28 W	1 Jan.	6736
Friendship		Feignmth.	Newland.	45 N 38 W	14 April	6738
S. Gilmore	Berry			16 S 30 W	13 Jan.	6742
Glenalvon		Manritius	London	43 N 35 W	16 April	6739
Golconda		Bombay	London	6 N 25 W	14 April	6741
Harriett		Cadiz	Bus. Avrea	19 S 32 W	14 Mar.	6741
Hector	McGowan	Ferno Po	Liverpool	3 N 25 W	26 Mar.	6741
Hope		Belfast	Barbadoes	20 N 35 W	19 Mar.	6736
Industry		Liverpool	N. Scotia	50 N 15 W	11 April	6736
Intrepid		Demerara	Liverpool	20 N 58 W	15 April	6742
I. Vienna		Liverpool	Trieste	Off C. Finist	24 April	6741
Jessie		Liverpool	Nassau	21 N 58 W	6 April	6742
Laburnum		St Domingo	Liverpool	26 N 52 W	21 April	6741
Lady Durham	Foster	Jamaica	Liverpool	Crkd. I. Pge.	16 Mar.	6741
Lorenz		Hambro'	B. Ayres	2 S 20 W	1 Mar.	6736
Lowther		Havana	Hambro'	19 N 19 W	8 April	6736
Mangles		Halifax	Halifax	28 N 56 W	23 Mar.	6736
Maria Eliza	Carr	China	Newland.	47 N 27 W	30 April	6742
Messenger		Bahia	Jersey	49 N 14 W	27 April	6739
Meteor		Clyde	Rio Janeiro	21 N 33 W	15 Mar.	6741
Mobile	Forrest	Cadiz	Havana	23 N 63 W	19 Mar.	6737
Montreal		Hull	New York	38 N 59 W	6 April	6736
Napoleon		London	New York	50 N 16 W	1 May	6742
Northumberland			Richibucto	45 N 30 W	23 April	6742
Persia	Friend	V. D. Land		10 S 29 W	8 Feb.	6741
Persia		Smyrna	Liverpool	48 N 8 W	18 April	6736
Pomona		Bristol	West Indies	26 N 38 W	22 April	6741
Prince Frederick	Scharper	Boston	Rio Janeiro	2 N 23 W	7 Mar.	6736
Rainbow		Newcastle	Trieste	Off C. St. My	6 April	6737
Reliance		Liverpool	Newland.	51 N 24 W	7 April	6736
Rochester	Price	London	South Seas	21 S 29 W	5 Mar.	6739
Royal Charlotte	Dudman	London	Bengal	14 S 96 E	1 Feb.	6740
Royal William	Arbuthnot	London	Madras	Near Equator	22 Mar.	6741
St. George		Bengal		19 S 79 E	27 Jan.	6737
Sarah Parker		Liverpool	New York	50 N 17 W	9 April	6736
Schooner	Alexander	Faro	Hull	48 N 17 W	13 Mar.	6736
						Out 27 days. Short prov.
Scotia	Bonner	Liverpool	Rio Janeiro	7 S 30 W	17 Feb.	6736
Sim. Taylor		Jamaica	London	Wind. Pass.	11 April	6741
Stakesby		Bombay		0 - 30 W	24 Feb.	6736
Southworth		London	N. S. Wales	4 S 27 W	22 Mar.	6741
Sovereign		London	New York	45 N 25 W	23 April	6742
Superior		Bristol	Montreal	51 N 24 W	7 April	6736
Sylph	Marly	London	Corfu	Off Sardinia	2 April	6737
Symmetry		London	Jamaica	20 N 48 W	1 Mar.	6736
Thesia		River Plata	Antwerp	47 N 18 W	6 April	6736
Tom Bowling	Bonastow	Cadiz	Tampico	33 N 14 W	14 April	6739
Ville de Nantes	Malvillian	Nantes	Bourbon	Off Cape	11 Feb.	6739

Loss of the Briton, of Whitby.
 —The following account of the ship Briton, of Whitby, Gaptain Stephen Dixon, is extracted from a letter to the captain's mother, from Charles E. Leonard, Esq., Comptroller of his Majesty's Customs at Cape Breton. The Briton sailed from Miramichi about the 1st December last, and, on the evening after, when proceeding on her voyage, came in contact with the New John, of Newcastle, which caused the loss of the Briton's bowsprit, and otherwise injured her hull so much, that it was Captain Dixon's intention to run the ship on shore, to save the lives of himself and crew; but, unfortunately, while lying to, the Island of St. Paul's was discovered close to them, and their disabled state, together with a severe frost, prevented them from clearing the land. The ship, consequently, went on shore under a cliff, and hopes were entertained that she would remain together until the morning; but the Almighty Disposer of all things directed otherwise, for, in about two hours, the ship went in pieces, and with the most of her crew perished. Four men only succeeded in getting up the cliff, two of whom died shortly after from the severity of the weather; a third, the sailmaker, was found alive in the morning, but expired in four days after. John Carter, of Newcastle, the only survivor, was so fortunate as to reach the South East Station, under the charge of Capt. M'Kenzie, who had been placed there by the direction of his Excellency Sir Peregrine Maitland, Governor of Nova Scotia, for the purpose of saving any unfortunate seamen who might be thrown on that hitherto desolate island. The body of Captain Dixon was taken up and interred near the North West Station. Among the few things saved from the wreck was the captain's dog, which remains on the island.—The New John was abandoned, water-logged off St. Paul's Island, and the crew were picked up by the Jane, Asbridge, bound from Miramichi to Aberystwith.—*Hull Advertiser.*

We regret to record the loss of the *Nereid*, of this port, a fine brig, of con-
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siderable burden, and not above five or six years afloat. The *Nereid* sailed for America more than a fortnight ago, but was detained by low tides and contrary winds at the Carse. On Monday she entered Wigtown-bay, called for passengers, and on Tuesday weighed anchor, with a complement of 24 men. The wind at this time was high and the sea rough, and the *Nereid*, in tacking, unfortunately missed stays; and though her anchors were paid out, and every exertion made, she was ultimately thrown on the rocks at Egerness Point, where she now lies a total wreck. The crew and passengers were safely landed, but many of the latter have lost their all, in the shape of clothes, implements, and provisions.—*Dumfries Courier.*

We regret to announce the loss of the new and beautiful brig, Zillah, Captain Martin, of Dundee, while on her passage from that place to St. Domingo. She struck on a sunken rock off the Formigas in the Western Islands, at 10 o'clock, on the night of the 9th April, and was abandoned in a sinking state at 3 o'clock in the afternoon of the 10th, there being then seven feet water in the hold. About midnight she was seen to go down. The crew were picked up by the ship Morley, of London, and landed in England. The Zillah was lately fitted up at Dundee, with great taste and efficiency, under the superintendence of Mr. Clark, the owner, and was on her first voyage. We believe that a more complete, or a more handsomely fitted vessel, of the same tonnage, could not have been found among the British shipping.—*Aberdeen Chronicle.*

Steam-boats now run between Canton and Pekin. A Canton paper contains an advertisement of the steamer *King-fa*, to leave on the following day. "She carries cows, a surgeon, band of music, and has rooms elegantly fitted up for cards and opium smoking." An application for a new theatre at Wampoa has been refused, for the reason that there are already five theatres in the city, which are quite enough for its population, which does not exceed 350,000.—*Times.*

ROYAL NAVAL SCHOOL.

THE Report of the Council of the Administration of this institution was submitted to the General Meeting in London, on the 10th of May, in which were the following Resolutions :

1. That the object of this Institution be to " Found and maintain a School for boarding and educating (on the most liberal footing, and at the lowest expense) the Sons of Naval and Marine Officers, of and above Ward-room rank ;" and that at such school, the tuition be according to the system of mutual instruction and moral discipline, exemplified in the principles and practice of the Madras School.

2. That the affairs of the Institution be under the management of a " Council of Administration," to consist of a President, four Vice-Presidents, twenty-four Directors, and a Secretary, to be chosen from among the Members, at a General Meeting to be held early in July every year ; and five of the above Council to form a quorum for business.

3. That the Council be empowered to appoint the requisite Officers for properly conducting the affairs of the Institution, and to fix their Salaries and define their duties.

4. That all Drafts for money be signed in Council, and bear three signatures ; that of the Chairman of the day being one, and also countersigned by the Secretary, as a better security that they pass to the proper persons.

5. That Admiral Sir Geo. Martin, G. C. B., Vice-Admiral Sir H. Digby, K. C. B. be Trustees of the Institution, with full power to receive donations and subscriptions, and to hold them in their joint names, subject to the disposal of the Council of Administration : and that Messrs. Hoares, Fleet-Street, and Messrs. Drummonds, Charing-Cross, be the bankers thereof.

6. That the establishment of the School consist of a Head Master (a Clergyman of the Established Church and a Graduate of one of the three Universities) with assistants as required, a superintendent, a matron, with female servants as wanted, a steward,

wardens, a gardener, and labourers as may be found indispensable.

7. That all Naval and Marine Officers, of and above Ward-room rank, be admitted as members of the Institution, on paying annually, in advance, at least one day's half-pay ; such members to have one vote at all general meetings, and their sons to be eligible to the benefits of the Institution.

8. That all persons whose patriotic feelings may prompt them to encourage and support the Naval service, on subscribing one guinea annually, or ten guineas at once, be also admitted as members of the Institution, and have one vote in its general meetings ; subscribers of two guineas annually, or twenty guineas at once, to have each two votes ; three guineas annually, or thirty guineas at once, to have each three votes ; and five guineas annually, or fifty guineas at once, to have each four votes.

9. That there be constituted two classes of Donors. The first class comprising those of 50*l.* and upwards ; and the second from 10*l.* to 50*l.*, whose names shall be inscribed on a tablet placed in a conspicuous situation in the hall of the Institution.

10. That Donors of 500*l.* be denominated Life Governors, and enjoy the privilege, during life, of having one pupil at a time on the Establishment, for gratuitous board and education.

11. For the first year, it is recommended that no change be made in the rate of charge originally suggested, viz. 25*l.* a year, every thing included, except books and instruments, and each half year to be paid in advance. But when a year's experience of the real expense of the Establishment shall be gained, it seems desirable that the charges should be graduated, making the first and most indispensable stage of education very low ; the second moderately so ; and the third, which will only be attended by elder boys whose parents can afford to give them a highly finished education, considerably advanced, perhaps as far as 40*l.*

12. That a right to nominate a boy (the son of an Officer being a member of the Institution) for the Royal Naval School, at the established rate charged (at present 25*l.*) such right of nomination to be held for two lives only, viz., that of the original purchaser, and the second holder, either by transfer or otherwise. The holder to have the power of nominating one boy at a time, during his life.

On the transfer or descent of this right, the sum of 2*l.* 10*s.* shall be paid to the funds of the school; in default of which payment, within one year from the time of the descent or transfer, the right shall lapse to the Institution.

13. Or, the same right may be required by a payment of 10*l.* entrance for each boy named; or 5*l.* per annum beyond the established annual rate at the time.—(See *Estimated Income for Boys.*)

14. That a certain number of pupils be admitted at the commencement of the School, on an annual payment of one lunar month's half-pay of the parent, to be paid in advance. The number of these pupils to be from time to time increased, as the funds of the Institution may permit; and such pupils to be denominated "Scholars on the School List."

15. That, in addition to the above, four necessitous orphans, for every 100 pupils who pay full rate, receive gratuitous board and education; four of these boys to be denominated King William the Fourth's Scholars, and the remainder, Dickson and Bell Scholars.

16. That the election of boys to the above Lists be vested in the Council for the time being.

17. That boys may be nominated at any age; but none to be admitted into the School under eight years of age, nor after attaining the age of fourteen years; nor shall any remain after the age of seventeen years.

18. That a General Meeting of the Institution be held early in July every year;—and that in all important matters affecting the constitution, either of the Society or of the School, no act of the Council of Administration be final

until approved either by it, or by a special general meeting called, with due notice, to consider the point.

Proceedings of the Second Annual General Meeting, held in London on the 10th of May.

ON the motion of Vice-Admiral Sir EDWARD CODRINGTON, Vice-Admiral Sir JOSIAS ROWLEY was unanimously voted to the chair.

The Chairman said, that it afforded him the sincerest gratification to contribute in any way to the success of an institution so laudable in its principle and objects, and so truly nationally beneficial in its results. He was so thoroughly persuaded that it was calculated to work, not alone partial and individual good, but a great public good, that he would never cease to promote it with all his energies. To educate and rear up for the service of their country the children of naval men who fell in her cause, or whose unhappy indigence precluded them from the means of giving them the benefits of education, was surely an object well worthy of the approbation and support of all who valued the services, or admired the glory, of the Navy—(Cheers.)

The Secretary (Lieut. BRAND) read the report of the Council of Administration, from which it appeared that the receipts since the establishment of the Society last year, to the present time, were 5134*l.*, (exclusive of a donation of the late Dr. Bell of 10,000*l.*) from which there were disbursements to the amount of 488*l.*

It was moved by Lord SELSEY, seconded by Capt. DICKSON, and carried as an amendment to resolution No. 1.—"That the primary object of the Royal Navy School, be, to enable Naval and Marine Officers, holding not lower than Ward Room Rank, whose circumstances are too limited to permit them otherwise to obtain similar advantages, to provide their sons with a sound education, combined with moral and religious instruction, at the lowest possible expense, on the principles of the Madras system of mutual instruction. And also to provide a similar education for a limited number of the orphan sons of Naval and Marine Officers, who may have been left in a state of indigence, especially the orphans of those Officers who may have fallen in their country's service."

Moved by Vice-Admiral Sir EDWARD CODRINGTON, G.C.B. seconded by Capt. SELSEY.

SEY, and carried as an amendment upon No. 2,—“That the institution be under the direction of a Council of Administration, of which a proportion shall be chosen from each class of subscribers, and to consist of a President, four Vice-Presidents, and twenty-four directors, with a Secretary so long as one shall be required; the said Council to be chosen from among the Members at a General Meeting to be held early in May every year, five of whom shall form a quorum, and that the said Council shall be empowered to act immediately for the year ensuing, and that one-fourth of the Directors shall not be eligible for re-election on the succeeding year.”

Resolutions Nos. 3, 4, and 5 were carried without alterations.

Moved by Major-General Sir JAMES COCKBURN, seconded by Sir EDWARD CODRINGTON, and carried as an amendment upon No. 6,—“That the Establishment of the School consist of a Head Master, (a Clergyman of the Established Church and a Graduate of one of the three Universities) with assistants and servants as required.”

Moved by Capt. SKIFFEY, seconded by Capt. JENKIN JONES, and carried as an amendment upon No. 7, that after the word “Institution” the following be added:—“And that all widows having sons, the offspring of officers of the above-mentioned ranks, be allowed to become subscribers, who, upon paying at the rate of one day’s amount of their annual pensions, shall thereby be entitled to all the privileges the father would have had, if living.”

Moved by Major-General Sir JAMES COCKBURN, seconded by Admiral Sir GEORGE MARTIN, and carried as an amendment upon No. 8,—“That all persons whose patriotic feelings may prompt them to encourage and support the Naval Service, on subscribing one guinea annually, or ten guineas at once, or more in those proportions, be also admitted as Members of the Institution, and have one vote at its general meetings.”

It was then moved by Admiral Sir GEORGE MARTIN, seconded by Sir JAMES COCKBURN, and carried, “That this meeting do now adjourn until Friday morning at eleven o’clock.

Adjourned Meeting, Friday, May 11.

—*Vice-Admiral Sir JOSIAS ROWLEY, Bart. K.C.B. in the chair.*

Vice-Admiral Sir E. CODRINGTON addressed the meeting, and said, that he was requested by Capt. Dickson to state, that, in order to prevent any collision of interests, or asperity of feeling, (which he was anxious to avoid,) he, Capt. Dickson, begged to withdraw from being proposed to fill the office of Honorary Secretary or a Member of the Council; offices which the officers at some of the out-ports suggested he should be solicited to fill. Received with applause.

Moved by Sir J. COCKBURN, seconded by Sir E. CODRINGTON, and carried as an amendment upon Resolutions Nos. 9 and 10,

“That the names of donors of 10*l.* and upwards shall be inscribed on a tablet placed in a conspicuous situation in the hall of the Institution, and that donors of 500*l.* be denominated Life-Governors, and enjoy the privilege during life of having one pupil at a time on the Establishment, for gratuitous board and education.”

Moved by Lord INGRESTRE, seconded by Capt. J. JONES, and carried as an amendment upon No. 11,—“That in order to bring the proposed education within the means of those for whose benefit it is designed, the whole expense of the board and education of one pupil at the school, including books, stationery, and washing, shall not exceed 25*l.* per annum, each half-year to be paid in advance, subject to such further reduction as the Council may be enabled to make, consistently with the stability of the Institution. But when a year’s experience of the real expense of the Establishment shall be gained, it seems desirable that the charges should be graduated according to the degrees of education required, making the first and most indispensable stage of education as low as possible.”

Moved by Sir E. CODRINGTON, seconded by Lieut. WESTROFF, and carried as an amendment upon No. 12,—“That the funds for establishing the Royal Naval School be raised by donations, annual subscriptions, and debentures of 25*l.* each, such debentures either to bear an interest of four per cent. or entitle the holder to a nomination of one scholar instead of bearing such pecuniary interest, but the right of nomination to be held for two lives only, viz.—that of the original purchaser and the second holder; and on the transfer or descent of this nomination right, the sum of 3*l.* to be paid to the funds of the school, and that whenever the funds of the institution may admit of it, the Council shall have the power to redeem such debentures.”

Moved by Lieut. WESTROFF, seconded by Lieut. FRANCILLON, and carried as an amendment upon No. 13,—“That all the words after ‘each boy named,’ be omitted.”

It was also moved by Sir H. BLACKWOOD, seconded by Sir J. BRENTON,—That the following additional clause be made to this article:—“And that all those officers’ sons, who stand on the present list of candidates for admission to the school shall be considered as having a prior claim to entry, upon the parent acceding to pay the nomination entrance of £25, or £10, but in case, on the parent being applied to, he should decline doing so, that his annual subscription be returned to him, if he wish it.”

Moved by Sir J. BRENTON, seconded by Sir H. BLACKWOOD with an additional clause by Lieut. WESTROFF, as an amendment upon resolutions Nos. 14, 15, 16, and carried,—“That the honour of the British Navy being pledged to the late Dr. Bell for the due appropriation of the fund so munificently placed by him at the disposal of the trustees of this institution, it be immediately invested as a permanent fund, and the annual interest arising therefrom be applied to the maintenance and education of the destitute and necessitous orphan and other sons of officers who may be in very limited pecuniary circumstances, preference being given to those whose fathers have been killed or drowned

in his Majesty's service, and who are destitute of mothers; and to those whose fathers have been killed or drowned in his Majesty's service, and whose mothers are living, subsequent preference being given according to the necessity and circumstances of the cases. These boys to be admitted gratuitously, or on an annual payment of one month's pay of the rank of the parent, at the discretion of the Council. Provided always, that the funds of the institution are found adequate to the fulfilment of this philanthropic and benevolent purpose."

Resolution seventeen was carried.

Moved by Com. MONTAGU, seconded by Com. DICKSON, and carried as an amendment upon No. 18.—"That, in addition to the annual General Meeting directed by resolution 2, to be held in May, a second meeting be held fourteen days afterwards, at the first of which a report of the state of the school shall be read, vacancies in the Council filled up, a President and auditors appointed, and all proposals in writing received, which may require the decision of a general meeting, but no new by-laws, nor any alterations in the existing rules and by-laws shall be valid, nor any proposition whatever, affecting either the constitution of the society or of the school, unless the same be proposed and adopted at the first general meeting, and confirmed by the following one."

Moved by Lieut. WESTROFF, seconded by Vice-Admiral LAMBERT, and carried with acclamation.—"That this meeting has viewed with the most lively feelings of satisfaction and pleasure, the mildness, urbanity, and conciliating tone which has characterized the proceedings of the Council of Administration at these meetings, and that the very best thanks of the profession are justly due to the Council of Administration for the very kind and candid manner in which they have met the suggestions which have been submitted on their resolutions."

It was then moved by Capt. J. JONES, seconded by Sir E. CODRINGTON, and carried with applause.—"That the present Council be earnestly requested to continue their functions until the month of July, or such time as another Council could be formed."

Sir H. BLACKWOOD said, there was a point materially connected with the business and interests of the Society, which, at the unanimous wish of the Council, he wished to introduce. The services of the Secretary, Lieut. C. Brand, were so very useful, and his suggestions so judicious, that he was entitled to the thanks of the meeting, and a continuance in the important trust of his office. This recommendation was unanimously received.

Hartwell House was negatived, and another building is to be selected for the establishment.

The meeting then adjourned till Friday, May 18th, at twelve o'clock, for the purpose of electing a new Council.

Adjourned Meeting, Friday, May 18th.

Vice-Admiral Sir EDWARD CODRINGTON in the chair.

The Chairman briefly stated that the object of the Meeting was to elect a

new Council for the ensuing year, and after earnestly entreating regularity in the proceedings, the Admiral explained, that the Secretary would read a list which the Meeting might adopt or not, but he begged to say, that to object to the appointment of any member individually would probably be considered too personal, and any subscriber might submit another list, if that which was about to be introduced should not be approved of.

The Secretary, Lieut. BRAND, then read a list of 29 officers, which Capt. DICKSON objected to as consisting of officers alone, and submitted as an amendment the names of two civilians, Alderman Lucas and Mr. Clementson, navy agent.

Sir JAMES COCKBURN stated, that another resolution was going to be submitted, which would include Alderman Lucas as an honorary member, that gentleman being a donor of 100*l.*

A resolution was then put, and carried unanimously, That the Trustees, and all Donors of 100*l.* and upwards, be Honorary Members of the Council of Administration.

The List was then read again, and after a little irregular discussion, Capt. Dickson, with the permission of the meeting, withdrew his amendment, and the whole were unanimously elected.

The following Officers compose the Council of Administration for the present year—

Admiral Sir CHARLES HAMILTON, Bart.
Vice-Admiral Right Hon. Sir G. COCKBURN,
G.C.B.

— K.C.B. Hon. Sir H. BLACKWOOD, Bart.

— K.C.B. ROBERT LAMBERT, Esq.

Rear-Admiral Sir T. B. CAPEL, K.C.B.
— Sir JAHLEEL BRENTON, Bart.

— K.C.B. Hon. Courtenay Boyle

Captain W. SKIPSEY
— Sir G. SEYMOUR
— Right Hon. Viscount INGRESTRE
— Right Hon. Lord RADSTOCK

— JENKIN JONES
— R. L. BAYNES
Commander A. M'KONOCHE

— J. B. SMITH
— MONTAGUE MONTAGUE

— GEORGE EVANS
Lieutenant B. WESTROFF

— GEORGE DAVIES
— JOHN W. BAILEY

Lieutenant WILLIAM GARDINER
Major-General Sir JAMES COCKBURN, R.M.
Bart. K.C.H.

Colonel J. B. SAVAGE, R.M.

Captain G. VARLO, R.M.

Surgeon Sir R. DOBSON

— Dr. CHARLES MITCHELL

Purser JOHN BRENTON

— J. A. LETHBRIDGE

Secretary Lieut. CHARLES BRAND, R.N.

It was then moved by Sir JAMES COCKBURN, seconded by Sir H. BLACKWOOD, and carried unanimously, "That Capt. E. P. Brenton, Sir

F. M. Ommaney, and Charles Clementson, Esq. be appointed Auditors of the Institution."

Another resolution was passed, "That all subscriptions be payable annually in advance, commencing from the 1st day of July in each year." And after a vote of thanks being passed to the Chairman for his very able and impartial conduct in the Chair, the meeting broke up.

OPORTO.

The entrance to Oporto is narrow and difficult for ships, in consequence of sunken rocks, and the velocity of the tides. The bar is also liable to considerable change, occasioned by the sudden swellings of the river, termed *freshes*, and from the heavy westerly gales to which it is exposed. The freshes most frequently take place in the spring of the year, and proceed from the melting of the snow on the mountains of Spain. The rise of the water in the river, at these times, is frequently as much as forty feet, and the rapidity of the stream is so great as to break vessels adrift from their moorings, and occasion

their total loss, it being impossible to afford them the smallest assistance. As no dependence can be placed on the anchors in these times of danger, precautions are generally taken by the masters of vessels to secure the end of a cable to trees on the bank of the river, or to stone pillars which have been provided for the purpose. They have ample time for preparation, as the approach of one of these freshes is communicated from the interior several days before its arrival, during which time the river gradually swells, and attains its greatest height. The ordinary rise of neap-tides is from six to eight feet, and that of springs from ten to twelve feet.

NAVAL UNIFORM.

ADMIRALTY OFFICE.

17th May, 1832.

"Description of the Uniform Coat which, in pursuance of His Majesty's pleasure, is to be worn by all Flag Officers, Commodores of the First Class, and Captains of the Fleet, not being Flag Officers, in the Royal Navy,

"Coat.—Blue cloth, with a scarlet stand-up collar, with two-inch lace round the top and front, and three-quarters inch lace along the bottom; a slashed sleeve, with blue three-pointed flap, edged with one and a quarter inch lace, with three small buttons, half an inch in diameter; a scarlet cuff, with two-inch lace, of the Navy pattern, round the top, and down the front edge; pocket flaps, with three points, edged with gold lace same as on the cuffs and collar, namely, two inches wide, and with three buttons underneath; the body of the coat lined with the same cloth, and the skirts lined with white kerseymer; two rows of buttons in the front, ten buttons in each row; the two rows to be three inches apart from the front of the button-hole to the centre of the button; the skirt to begin at one-sixth of the circumference from the front-edge, two buttons on the hips, and two buttons on the bottom of

the plait; the bottom to be raised, gilt, and one inch in diameter, indented with a round rim, and within the rim an anchor and a cable, and a crown over between two wreaths of laurel.

"The Epaulettes to be the same as commanded by His Majesty's regulations of the 18th December, 1827, but they are not to be worn with binders.

"No alteration has taken place in the uniform Coats of Commodores of the second class, Captains, or other Commissioned Officers.

"By Command of the Lords Commissioners of the Admiralty,"

"GEO. ELLIOT."

MEMORANDUM.

"A mistake having for some time existed in the official Navy List, by which Gunners, Boatswains, and Carpenters are required to wear Cocked Hats, as Uniform; they are hereby directed to observe that, by His Majesty's regulations of the 18th December 1827, they are to wear plain round Hats, and that no other Hats are allowed to be worn as Uniform by them.

"By Command of the Lords Commissioners of the Admiralty,"

"GEO. ELLIOT."

PROMOTIONS AND APPOINTMENTS.

From the Naval Papers.

PROMOTIONS.—*Lieutenants*, J. W. Hotham, A. G. Rogers, M. Thomas. *Master*, J. Saunder. *Surgeon*, Mr. Thompson. *Marines*, *First-Lieutenant*, M. Collis.

APPOINTMENTS.—*Captains*, Sir F. A. Collier, Kt.; Vernon; Sir R. Grant, Kt. Castor. *Commanders*, J. R. Booth, Trinculo; R. Copeland, Beacon, late Meteor; W. Robertson, Snake; J. T. Warren, Rose; *Lieutenants*, F. Austen, Tweed; R. Bastard, Hermes, St. Vessel; W. Blount, Ariadne; A. Browne, Rose; J. Clarke, C. G. Hayling, Island; K. Corbett, Champion; S. C. Dacres, Castor; A. C. Dawson, Beacon; J. Denman, Snake; C. Eden, Victory; T. Graves, Mastiff; J. Hill, Badger; J. W. Hotham, Alfred; J. W. Innes, Vernon; H. Jellicoe, Castor; C. J. Link, C. G. Kings, Ferry; J. Mc. Cleverty, Castor; R. R. Metherell, Columbine; R. Morgan, Flag of Sir P. Malcolm; R. Newman, Rose; J. R. Otway, Vernon; C. W. Pears, Vernon; Hon. T. Pelham, Vernon; G. Ramsey, Nimrod; R. Ralph, Coast Guard; G. H. White; J. H. Windham, Vernon; R. C. Vickery, Sem. Barnacle Hill. *Masters*, W. L. Browne, Mastiff; C. Cleveland, Cygnet; P. S. S. Flinn, Briton; G. Johnson, Beacon; E. Sabben, Caledonia; S. Strong, Castor; J. Saunders, R. George Yacht.

MARINE-OFFICERS.—*Captains*, T. Appleton, Britannia; J. R. Coryton, Vernon. *Lieutenants*, J. Aslett, Portsmouth division; E. S. Browne, Excellent;—Branch Plymouth division; S. Frazer, Vernon; C. Harriot, Chatham division; J. R. Jackson, Woolwich division; J. Winne, Plymouth division; B. Varlo, Woolwich division. *Surgeons*, W. A. Bates, Vernon; T. Davies, Astræa; T. W. McDonald, Trinculo; M. Thompson, Undaunted. *Assistant Surgeons*, W. Bailey, Beacon; Dr. J. Clarke, Victory; T. Corral, Isis; T. Graham, Isis; T. W. Jewell, Victory; J. C. Mottley, Rose; R. Stevenson, Favourite. *Purser*, J. Giles, Castor; J. L. Jones, Trinculo; F. Taylor, Gannet; H. Tucker, Beacon; T. Williams, Vernon. *Mates*, W. Austen, Defence, Rev. Cr. J. E. Bingham, A. Lowe, C. G. Napier, Excellent; J. Nourse, Donegal; R. Walters, Cheerful; R. C. White, Donegal. *Second Masters*, M. C. Allen, Vernon; W. J. Burney, Vernon; T. Herring, Vernon. *Midshipmen*, C. Bamber, Excellent; T. S. Brock, Beacon; C. Houston, Britannia; T. Sibbald, Excellent. *Schoolmaster*, J. Johnstone, Talavera. *Clerks*, W. Lanes, Mastiff; R. Parker, Conway; J. C. Phillips, Asia; J. S. Pope, Excellent; W. Turner, Revenge.

FOREIGN MAILS.

FOR BAHIA—Wm. Russell, *English*, from Liverpool, 1st June.

CALCUTTA—Lord Hungerford, *Farquharson*, from Portsmouth, 1st June.

London, *Wimble*, from the East India Docks, 4th June.

MADRAS—Baretto, from St. Catherine's Docks, 1st June.

London, *Wimble*, from the East India Docks, 4th June.

Lord Hungerford, *Farquharson*, from Portsmouth, 1st June.

MARANHAM—George, *Wright*, from Liverpool, 1st June.

SINGAPORE—Australia, *Lobbaro*, from West India Docks, 1st June.

SWAN RIVER—Edward Lombe, *Freeman*, from St. Catherine's Docks, 5th June.

Mails for HAMBURG every Friday.

Births.

At Enniskerry, near Dublin, on the 31st of March, the lady of Capt. T. Monck Mason, R.N. of a daughter.

On Tuesday the 24th of April, in Claremont-place, Morrice-town, Plymouth, the wife of Mr. James Blake, of H.M.S. Britannia, of a son.

Lately, at Forton Lodge, near Gosport, the lady of Lieut. John Hallows, R.N. late of H.M.S. Wellesley, of a son.

On the 2d of March, on board the General Palmer, at sea, the lady of Rowland Burdon Cotgrave, Esq. Lieut. R.N. of a daughter.

On the 2d of May, at Quatre Bras Cottage, Dorchester, the lady of C. Criswick, Esq. R.N. of a son.

On the 7th of May, the lady of Lieutenant Malone, of the Royal Naval College, of a daughter.

At Plymouth, the lady of Capt. H. Carew, R.N. of a daughter.

On Tuesday, the 15th of May, at Southsea, the lady of Lieut. J. Tothill, of the Royal Marines, of a still-born child.

Marriages.

On the 28th of April, at the Church of St. Mary-le-Strand, Dr. Armstrong, of the Royal Naval Hospital at Plymouth, to Mary, second daughter of Sir Robert Seppings, of Somersct-place.

On the 12th of April, at Hythe, John Hudson, Esq. Commander, R.N. to Emily, only daughter of the Rev. Patrick Keith, Rector of Ruckinge and Stalisfield, Kent.

On Thursday the 19th of April, at St. Thomas's Church, Mr. George Cotsel, of His Majesty's dock-yard, to Miss Eliza Sprent, of Portsmouth.

At Malta, on the 17th of March, at the Palace Chapel, by the Rev. J. T. H. Le Mesurier, the Rev. J. W. Dodd, Chaplain of H.M.S. Madagascar, to Miss David, daughter of Deputy Assistant Commissary General David, of that garrison.

On Tuesday the 12th of April, at St. Martin's-in-the-Fields, Mr. Zebulon Willey, second officer of the Packet-ship North America, to Miss Elizabeth Eilers, of Liverpool.

At the New Church, St. Pancras, Captain Godby, R.N. to Catharine, daughter of the late John Andrews, Esq.

On the 28th of April, at St. George's Church, Hanover-square, by the Rev. C. Mildmay, Capt. Geo. St. John Mildmay, R.N. to Mary, widow of the late J. Morrill, Esq.

On the 8th of May, at St. Alphage, Greenwich, E. N. Kendall, Esq. Lieut. R.N. to Mary Anne, eldest daughter of Joseph Kay, Esq. of Greenwich Hospital, and of Gower-street, Bedford-square.

Deaths.

On Tuesday the 3d of April, at the Isle of Man, Mr. James M'Queen, R.N. late of Liverpool.

Murder of Mr. Thomas and Mr. Parker.—The *Tasmanian*, of Sept. 24, contains an account of an inquest held on the bodies of Mr. Thomas and Mr. Parker, who were murdered by the aborigines of Van Diemen's Land. It appeared, that the deceased gentlemen were at Port Sorrell, with four servants, two natives came to their tent, and were kindly received, and partook of food. Mr. Thomas asked them if there were any more. They held up their fingers, and said, "good many more." Mr. Thomas asked them to take him to them, which they readily agreed to do. Mr. Parker advised him not to go by himself; he said he would, and went off with the natives. Mr. Parker walked at a short distance behind, with a double-barrelled gun. They did not return, and in about two hours the servants gave the signal for leaving with the boat, which was not answered. Some natives that came to the place said the white men had "tabbitty," run away. The party left Port Sorrell, and returned to George Town, from whence Mrs. Parker sent parties in search of her husband and Mr. Thomas. Their bodies were found lying on the ground, both having been murdered by spear wounds. The inquest found a verdict of wilful murder against three natives, who are in custody. Mr. Thomas commanded a merchant-ship.—*Observer.*

In a decline, after an illness of five months, at his father's house, at Farcham, on Friday morning the 20th of April, George-Henry, second son of Win. W. Maidman, Esq. in the 18th year of his age. He was brought up to, and served in, the Navy, and was late a Midshipman in H.M.S. *Caledonia*. He was a fine lad, of great promise, beloved by his relatives, and esteemed by all who knew him.

At Malta Hospital, of fever, on the 9th of March, Mr. John H. Dancer, Mate of H.M.S. *Alfred*.

An awful instance of sudden death occurred at Lunington, on Tuesday the 24th of April, in the person of Mr. Guttridge, formerly second mate of the *Rose* revenue cutter. He attended the Friendly Society at the Angel on Monday, (of which he was a member,) and was, to all appearance, in the enjoyment of good health, but was taken speechless the next morning, and expired in a few hours.

At the Royal Naval Hospital, Plymouth, on Tuesday the 24th of April, deeply lamented by a large circle of friends, Mr. White, R.N. after a painful and lingering illness.

Mr. Hugh Hughes, son of Dr. Hughes, of Plymouth, aged 22. He was accidentally

drowned off Hythe, while cruising in H.M. revenue cutter *Defence*.

At the Naval Hospital, Malta, Mr. Barbar, Purser of the *Scylla* sloop-of-war.

At the Royal Hospital, Haslar, Mr. James Terry, Supernumerary Boatswain of H.M.S. *Venerable*.

At the Island of St. Christopher, West Indies, Lieut. John Train, R.N.

On the 22d of July last, on his passage from the East Indies, in the *Mount Stewart*, Elphinstone, after a short illness of three weeks, Lieut. W. Lutman, R.N. His death will be severely regretted by all his relatives and friends.

Lately, at Newfoundland, Mr. George Hollbrook, Master, R.N.

Lately, Mr. Richard Knight, Purser, R.N. In the Island of St. Vincent, on the 3d of February, Mr. Thomas Bell, Commander of the Ship *Grant*, aged 40, of the cholera morbus.

Lately, in Cork, Capt. W. Lloyd, R.N.

On Monday the 30th of April, at the Royal Hospital, Haslar, Mr. N. H. Robins, volunteer of the 2d class of H.M.S. *Donegal*, aged 24.

On the 3d of May, at the Royal Hospital, Haslar, Mr. W. Standidge, carpenter of H.M.S. *Sultan*.

As Mr. Hamilton Baillie, late Surgeon of the *Astrea* frigate, unfortunately deranged in his intellects, was on his way to the Asylum at Haslar Hospital, on board the *Echo*, steamer, he jumped overboard on Thursday night the 3d of May, in the channel, and was drowned.

On Tuesday the 8th of May, at the Royal Hospital at Haslar, Mr. Dennis Spencer, Boatswain of His Majesty's Sloop *Columbine*.

Lately, Lieutenant Fortescue, of the Royal Marines.

Lately, at Pengelly, near Camelford, aged 75, Mr. Peter Cruzoe, one of the oldest Warrent Officers in the Royal Navy.

At Anglesea, at the house of his son-in-law, Capt. Austen, R.N., aged 83, John Grove Palmer, Esq. formerly for many years the King's Attorney-General for the Islands of Bermuda, and late of Keppel-street, London.

On the 11th of May, at Haslar Hospital, Mr. John Gosling, of H.M.S. *Spartiate*, aged 43 years. The deceased, being a member of the Union Burial Fund Society, held at the Hat and Hand, Camden-alley, Portsea, from which his nearest relative is entitled to receive £15, having no kindred in these parts, directed, by a nuncupative will, that his body should be decently interred at the expense of the Society; which was accordingly done at the New Cemetery, on Tuesday, the President and Secretary of the Society attending as mourners, agreeably to an article introduced by the Supervisor of Beneficial Societies' Rules, according to Mr. Portman's Act, for the better regulation of the same.

Lately, at Greenwich, A. H. Wilson, Esq. Lieut. R.N.

On the 10th of May, at Dover, R. Winthrop, Esq. Vice-Admiral of the Blue. His services in the *Circé* and *Ardent*, &c. were active and zealous, and his character highly and universally respected.

THE
NAUTICAL MAGAZINE,

3c.

JULY, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

47. DANGERS NEAR BREHAT, ON THE COAST OF FRANCE.

M. Beautemps-Beaupré has furnished us with the following account of the position of the various dangers on a part of the coast of France, which, to navigators, are of the most formidable description, in consequence of the great velocity of the tide which passes over them. In addition to this, until the survey of the French officers was completed, from which it is collected, these dangers were incorrectly placed on the charts. We have therefore considered the whole of the particulars as containing so much valuable information to navigators, that we have translated them entirely.

“The charts in the *Neptune Français*, as well as others recently published in England, give the positions of the dangers in the vicinity and to the northward of Brehat so incorrectly, between which vessels are obliged to pass into the Bay of St. Brieuc to St. Malo, Cancale, and to Granville, that we believe it will be rendering a service to navigators, to give them the means of correcting those charts which they already possess.

“The chart of the English channel, in three sheets, published at London in 1811, and corrected in 1824, doubtless deserves, in many respects, the degree of confidence which navigators place in it; but we must say, that it would be as dangerous to trust to it in the vicinity of Brehat, as it would be to use the oldest chart of our *Neptunes*.

“The corrections which we shall give, will serve for this chart as well as for the French charts,—the imperfections of which it is our particular object to point out.

The question, whether it is better for vessels from the westward, bound to St. Malo, Granville, &c. to pass between Brehat and the flats of the Roches-Douvres, or to the northward of these flats, has been frequently agitated, since it was contemplated to establish a lighthouse in the vicinity of Brehat; but as the reasoning concerning it could only be founded on the data of charts which were known to be defective, the consequence was, that the construction

of the most important lighthouse, perhaps, of all that commerce daily demands, was obliged to be postponed.

"F. M. de Rossel, author of the report containing the account of the system adopted by the commissioners for lighting the coasts of France, was inclined to think that the light in the environs of Brehat should be placed on the Roches-Douvres, if that could be done; but he concluded by saying that he considered it right to withhold his definitive opinion until the officers, who are surveying the coast, should have fully determined the relative situation of all the localities. The wishes of M. Rossel are fulfilled: the environs of Brehat have been examined with the utmost care, and it is ascertained that the rocks named the *Heaux de Brehat* afford the best position for the intended light, and not the Roches-Douvres, where it would be very difficult and expensive to establish it. It has been determined also, by the commissioners of lights, that a provisional light shall be established, as soon as possible, on the *Heaux*.

"It will be sufficient to give, as we are about to do, the positions of the principal dangers near Brehat, to shew that the best passage, for vessels navigating these dangerous parts, is close to the northward of this isle.

"We shall give the positions of these dangers with reference to a large mark, which we have established on the middle of the south side of Brehat isle, between the *Chambre* and the *Port Clos*, in lat. $48^{\circ} 50' 20''$ N, and $3^{\circ} 0' 16''$ W. of Greenwich.

The Roches-Douvres.

"The middle of these rocks, which extend more than two miles from east to west, lies N. $23^{\circ} 10'$ E. (true) from the mark on Brehat, distant 17819.6 fathoms.

"There are two heads of rocks which never cover, and the highest on which I landed, on the 8th September, 1829, is elevated 56 feet above low water, and lies nearly in the middle of the southern part of the Roches-Douvres.

The Horaine.

"The beacon placed on this reef is situated N. $44^{\circ} 14'$ E. (true) from the mark on Brehat, distant 4555 fathoms.

"The summit of this rock is 23 feet above low water.

Gautier Rock.

"This rock lies N. $32^{\circ} 5'$ E. (true) from the mark on Brehat, distant 13263 fathoms, and is 14 feet above low water.

Barnouic Rock.

"This rock bears N. 34° E. (true) from the mark on Brehat, distant 13844 fathoms, and is 25 feet above low water.

"The Barnouic and Gautier rocks, which bear S. $74^{\circ} 24'$ W. and N. $74^{\circ} 24'$ E., from each other, and 746 fathoms apart, are the highest points of the dangerous reef lying between the Horaine and the Roches-Douvres.

"This reef extends $1\frac{1}{2}$ mile east to one mile south, three miles to the west, and two miles to the N.W. of Barnouic.

Roc'h-ar-Bel.

"The northern point of Roc'h-ar-Bel is situated N. $3^{\circ} 45'$ E. (true) from the mark on Brehat, distant 5304.3 fathoms.

"This point is so badly placed on all the French charts, as well as others, (about 284 fathoms too far to the northward,) that a vessel steering so as to pass to the northward of the position assigned to it on the charts, is in danger of running on the Barnouic and Gautier rocks; and by endeavouring to pass it on the south, she is in danger of falling on the point of Roc'h-ar-Bel, the true position of which we have given. Roc'h-ar-Bel is nothing more than the N.E. extremity of the great flat stretching off the coast which separates the rivers Tréguier and Pontrioux, and of which the Heaux forms a part.

The Heaux.

"The high rock of this flat, on which a lighthouse is to be erected, lies N. $39^{\circ} 11' 47''$ W. (true) from the mark on Brehat, distant 5590 fathoms.

Basse Maurice.

"This sunken rock, on which there is not less than 8 fathoms at low water, is not dangerous to any vessels; but as it occasions considerable breakers, which might alarm navigators, we here give its position. It lies N. 20° E. (true) from the mark on Brehat, distant 7918.6 fathoms.

"It is probable that the Basse Maurice has been marked on all the old charts as the northern part of Roc'h-ar-Bel, from which it is really separated by 20 and 25 fathoms water, and a channel about $3\frac{1}{2}$ cables' length across.

"The flat which forms the eastern extreme of the innumerable rocks of Brehat, and which is known by the name of *Ringuebras* or *Cain-bras*, is terminated by a rock which lies N. 87° E. (true) from the mark on Brehat, distant 6245.4 fathoms.

"With these last rocks to the east of Brehat, there are sand-banks which extend about three miles to the south-eastward of the *Ringuebras*.

"We know nothing of two rocks which are marked on all the charts, one of which is named the *Basse du Moulec*, and the other the *Harlopin*; and if they do exist, which is very doubtful, they are not in the positions assigned to them.

"It is not unlikely that the *Harlopin* is nothing more than the flat known by the name of *Ringuebras*, the position of which we have given. As to the *Basse du Moulec*, perhaps it may be one of those numerous rocky heads near the *Gautier* and *Barnouic* rocks, which have been examined this year.

"The general chart of the coasts of Brittany, in the *Neptune Français*, shews a second *Basse du Moulec* between the *Barnouic*, the *Gautier* rocks, and the *Roches-Douvres*. This rock really does exist, and forms the N.W. point of the flat of the *Barnouic* and *Gautier* rocks, of which we have spoken above.

"The first thing that a navigator should do, is to place the above dangers on his chart, according to the positions we have given of them. This done, he will find not only how faulty are the old charts of the environs of Brehat, but also how he should proceed to pass between Brehat and the *Roches-Douvres*.

"It is evident to us, that the best channel for passing to the northward of Brehat is that which is bounded on the south by the Heaux, Roc'h-ar-Bel, and the *Ringuebras*, and on the north by the *Gautier* and *Barnouic* rocks. This channel is about seven miles wide, and the course of the ebb and flood tide follows its direction. It is also clear to us, that a vessel should, if possible, avoid taking the channel between the *Roches-Douvres* and the *Gautier* and *Barnouic* rocks, which are nearer to each other than shewn by the most recent charts, and particularly by the chart of the channel in three sheets, of which we have already spoken. In fact, the *Gautier* rock is placed on this chart N. 37° E. (true) of the *Horaine*, distant 5062 fathoms, and S. 2° E. from the middle of the *Roches-Douvres*, distant 11,148 fathoms, while it really lies N. $25^{\circ} 54'$ E. (true) from the mark on the *Horaine*, distant 8888.5 fathoms, and south (true) from the *Roches-Douvres*, distant 4796 fathoms.

"The *Barnouic* rock, which is placed on the same chart, N. 33° E. (true) from the *Horaine*, distant 6074.8 fathoms, and south (true) from the middle of the *Roches-Douvres*, distant 9762.3 fathoms, really lies N. $29^{\circ} 9'$ E. (true) from the mark on the *Horaine*, distant 9442.7 fathoms, and S. 5° E. (true) from the middle of the *Roches-Douvres*, distant 4689.1 fathoms.

"The north point of Roc'h-ar-Bel is placed on the same chart, according

to the *Neptune Français*, about 1705 fathoms too far to the northward, and the flats, of which the Barnouic and Gautier rocks are the highest points, are altogether omitted. The result of these errors is, that a false channel has been shewn clear of dangers, and 9 miles wide between the Roches-Douvres, the Barnouic, and the Gautier rocks, and again, a channel 5 miles wide, which would be somewhat diminished by Roc'h-ar-Bel, between these rocks and the Horaine.

“As to the passage to the north of the Roches-Douvres, which M. de Rossel believed might be adopted with safety, both by day and night, by means of a lighthouse on one of the rocks, we cannot speak of it from experience; but we can affirm, that it will not be used voluntarily by French navigators coming from the westward, who are at all acquainted with the localities lately explored by the French surveyors. Why should they expose themselves, by passing to the northward of the Roches-Douvres, to the risk of being delayed by contrary winds from the South and S.S.W., or even to be set by the currents on the western part of the dangerous flat of the Minquiers, where some merchant vessels are lost every year, when they are certain that a channel of seven miles wide is to be found near Brehat, which the ebb and flood sets through regularly? We think, and consider it right to repeat so here, that, in all cases, vessels should avoid going between the Roches-Douvres and the flat of the Barnouic and Gautier rocks.

“In fact, the best way for vessels to proceed, coming from the west, and bound to St. Brieuc, St. Malo, and Granville, is to make the little archipelago of the Seven Isles, where the commissioners of lighthouses have directed a light to be placed. A provisional light has also been directed by this Board to be placed as soon as possible on the Heaux. These two lights are much desired by navigators who frequent the bay of St. Brieuc, as well as the ports of St. Malo and Granville.

“When the lights on the Seven Isles and the Heaux shall be established, it will be easy, even by night, to pass between the Horaine and the flats of the Barnouic and Gautier rocks, from the westward; for after having made the light of the Seven Isles, a vessel may steer so as to pass two or three miles to the northward of the Heaux, from whence a course (true) west may be made with safety, until all the dangers of this passage shall have been passed.

“I think that, in fine weather, every navigator who may find himself, at night-fall, two or three miles (true) north from the light of the Heaux, being guided by the light, might pass with the flood between the Horaine and the flats of the Barnouic and Gautier rocks, even by working to windward; for this passage is safe, and, I repeat, seven miles wide.

“Ships bound to the bay of St. Brieuc, being desirous of passing between the rocks close to the east of Brehat, cannot, under any circumstance, do so at night; the appearance of the light will scarcely suffice to clear them of the dangers they will meet in this channel, which is known by the name of the *Race of Brehat*, the entrance of which is between the isle of Brehat and the Horaine.

“On this we shall merely say, that the two beacons on the Cormorandiere, and the other point of Minar, to shew the direction of the *Race of Brehat*, are not well placed, and that at low water it would be dangerous to follow the course pointed out to them.

“M. Givry, who completed this year the survey of the dangers in the vicinity of Brehat commenced in 1830, is satisfied that those dangers may be avoided which border the *Race of Brehat*, by following a course which will be pointed out by another beacon to be established between Point Minar and Point Plouha. It will be well to increase the size of the Cormorandiere,

and to make the proposed beacon as large as the tower Baudic at the entrance of the river Poutrieux."

M. Beaupré gives an outline, on a very small scale, of the places referred to in the foregoing remarks, and adds the following results from M. Monnier's survey of 1831.

"1. That the south-easternmost rock of the flat known to navigators by the name of *Deree*, on the Minquiers bank, lies N. $78^{\circ} 51' 10''$ E. (true) from the mark on Brehat, distant 30016 fathoms; from the light on Cape Frehel, N. $8^{\circ} 11' 21''$ E. (true), distant 15195.7 fathoms; and from the principal islet of the Minquiers, S. $73^{\circ} 50'$ W. (true), distant 8473 fathoms. It is five feet above low-water spring tides.

"2. That the rock called by the English *Deree*, is one that uncovers at half tide, lying N. $83^{\circ} 50'$ W. from the Maitresse islet of the Minquiers, and on with the high rocks called the *Maisons*, distant 6355 fathoms, and N. $31^{\circ} 9'$ E. from the French *Deree*, distant 3613 fathoms.

"3. That the southern limit of the dangerous part of the flat is about 1066 fathoms south of the French *Deree*.

"4. That the western limit of this same flat is N. 52° W. from the French *Deree*, distant 1705.2 fathoms.

"Paris, 19th December, 1831.

"BEAUTEMPS-BEAUPRÉ."

48. LIGHTS ON THE COAST OF FLORIDA.

"To the Editor of the *Nautical Magazine*."

"Sir,

"When any one undertakes the office of setting another right, the least to be expected of him is, that he should be right himself; and if there be any subject in which a rigid attention to truth is required, it is that in which the safety of human life is concerned. The above remark occurred to me, Mr. Editor, on reading a letter in the *Morning Herald* of May 31, addressed to the Secretary of Lloyds', by Mr. Baker, the British Consul at Mobile. This gentleman, no doubt with the very best intentions, forwards, as he says, "for the information of Lloyds', 'a corrected account of the latitudes and longitudes of the lighthouses on the Florida coast,'" in consequence of very erroneous accounts as to the bearings of these lighthouses having appeared in many of the newspapers of the United States, and which, if not promptly contradicted, may mislead mariners.' Now, it is unfortunate that Mr. Baker's '*corrected account*' should be as far wide of the truth, and perhaps further from it, than the American newspapers were; and if his statement be not promptly contradicted, woe betide the unfortunate mariner who may be induced to put his trust therein. It is very much to be regretted that such a statement has appeared in the most respectable of the London journals, and still more so, that it should have been copied into the Naval Papers; so that if seamen, for whom it is intended, do not at once see through the egregious errors it contains, it is difficult to say what mischief may not be produced.

"Mr. Baker has depended for his information on the collector of the port of Mobile—the lighthouses in question being under his inspection; and, much as the testimony of this gentleman, respecting even their localities, would thus assume an air of authenticity, there is an assertion of Cape Florida being seven miles distant from the Gulf Stream, which has shaken my faith in the whole account of them. I shall therefore confine myself, at present, to their geographical positions, leaving the investigation of their local particulars for a future communication.

“ The following are the true positions of the places of these lights, as determined by Mr. De Mayne and his assistants, by good chronometers, sextants, and artificial horizons for longitude, as well as meridian altitudes for their latitude :—

Cape Florida Light, on Kay } Biscayne,	} Lat. N. 25° 41' 10". Long. W. 80° 5' 0".
Light Vessel in the Great } Inlet,	
Kay West,	— 24° 31' 30". — 81° 47' 40".
Sandy Kay,	— 24° 25' 30". — 81° 51' 30".
Tortugas Light on Bush Kay,	— 24° 36' 0". — 82° 52' 30".

“ There may be a difference of a minute or two in longitude, between Mr. De Mayne and the Spaniards; but there can be no doubt respecting the latitude being correct, as they agree very closely; and that officer was generally allowed to be a good observer, and had very efficient assistants. The longitude was ascertained by the meridian distance being repeatedly measured, both from Havana and Nassau. In the first of these lights, that of Cape Florida, Mr. Baker's statement is seven miles of latitude to the northward of Mr. De Mayne, and no less than 37 minutes of longitude to the westward—almost enough to reach into the Gulf of Mexico.

“ Trusting that you will give the above a place in your useful little work, I am your obedient servant.” “ E. B.”

The remarks of our correspondent are quite true; and it is to be hoped that he will favour us with his promised communication on these very important Lights. We also hope, that the error into which Mr. Baker has fallen, will not be the means of deterring others of His Majesty's Consuls abroad from forwarding to Lloyd's that species of local information which is within their reach, and so valuable to the navigator. It cannot be expected that their geographical reports of places little known should be entirely correct; but while these can be pretty well rectified by the test of former authorities, any inaccuracy they contain will be compensated by the details of various other particulars relating to the coast, which are no less essential to ships frequenting it.

49. FLORIDA REEF.

In the Spanish chart of the Gulf of Mexico, constructed by Don Felipe Bauzá, a list of latitudes and longitudes is given of the lights on the Florida Reef, entitled “ *Linternas Establecidas en el Arrecife general de la Florida.*” In reducing the longitudes from the meridian of Cadiz to that of Greenwich, some errors have been committed, which the author is desirous should be corrected in those copies that have been purchased, and for this purpose has forwarded us the following:

	Latitudes.	W. of Cadiz.	W. of Greenw.
Cayo del Centro de las Tortugas	24° 37' 30"	76° 40' 12"	82° 57' 37"
Ysla de Arenas	24 25 30	75 40 04	81 57 32

	Latitudes.	W. of Cadiz.	W. of Greenw.
Cayo de Hueso extremo S.O.	24° 31' 30"	75° 36' 14"	81° 53' 42"
Cayo Looe	24 33 40	75 10 44	81 28 12
Barco linterna en la entrada			
grande	24 56 20	74 12 2	80 29 30
Cayo Vizcaino	25 43 30	73 54 32	80 12 00
Cayo Bush linterna	24 36 30	76 41 19	82 58 44

50. GEOGRAPHICAL COLLECTIONS.

	<i>Africa.</i>	Lat.	Long.
Gregorio Alto. Elev. 540ft.		8° 33' 40" S.	14° 13' E.
Regency of Zenza of Golungo Alto.			
Elev. 1022ft.		8 42 40 S.	15 18 E.
Peak of the Muria. Elev. 15986ft.		9 18 00 S.	16 33 E.
Regency of Golungo Alto. Elev. 1580ft.		8 50 00 S.	17 12 E.
Regency of Dembos. Elev. 1477ft.		8 15 30 S.	16 18 E.
Regency of Ambacca. Elev. 1950ft.		9 09 48 S.	17 48 E.
Regency of Pungo Andongo. Elev. 3837ft.		9 29 00 S.	17 59 E.
Haco. Town. Elev. 3139ft.		10 15 00 S.	18 33 E.
Megna Candouri. Village. Elev. 3261ft.		10 33 30 S.	18 09 E.
Tamba Town. Elev. 4265ft.		10 43 10 S.	17 58 E.
Bailundo Town. Elev. 4993ft.		11 42 00 S.	17 52 E.
Nano Town. Elev. 3472ft.		12 38 40 S.	15 05 E.

Asia Minor. Black Sea.

Penderaklia Town	41° 17' 51" N.	31° 24' E.
Cape Kelimili	41 36 00 N.	32 12 E.
Amastra. Town	41 46 08 N.	32 22 E.
Kitros. Town. Ancient <i>Kytoros</i>	41 52 45 N.	32 59 E.
Cape Kérespé, ancient Karambis	42 02 00 N.	33 19 E.
Ineboli. Town	42 01 00 N.	33 47 E.
Cape Indjé, (subtile)	42 09 00 N.	34 56 E.
Sinope. Town	42 02 00 N.	36 10 E.
Point de Kizel-irmake	41 45 00 N.	35 58 E.
Samsoune. Town. (Ancient Amissos)	41 20 30 N.	36 21 E.
Ounich. Town	41 10 00 N.	36 59 E.
Cape Bona	41 06 35 N.	37 49 E.
Kirasonde. Town. (Ancient <i>Kirassos</i>		
<i>Cerasus</i>)	40 57 00 N.	38 23 E.

South America. Brazil.

Santos. Arsenal. Var. 4° 22' in 1828	23° 55' 51" S.	46° 16' 33" W.
Lighthouse	24 03 06 S.	46 12 20 W.
Alcatrassé. Island. Centre	24 08 10 S.	45 39 15 W.
Abrigo. Island. Centre	25 07 28 S.	47 52 51 W.
Figuera. Island. Centre	25 21 29 S.	47 54 11 W.

MARITIME PAPERS, REVIEWS OF VOYAGES, &c

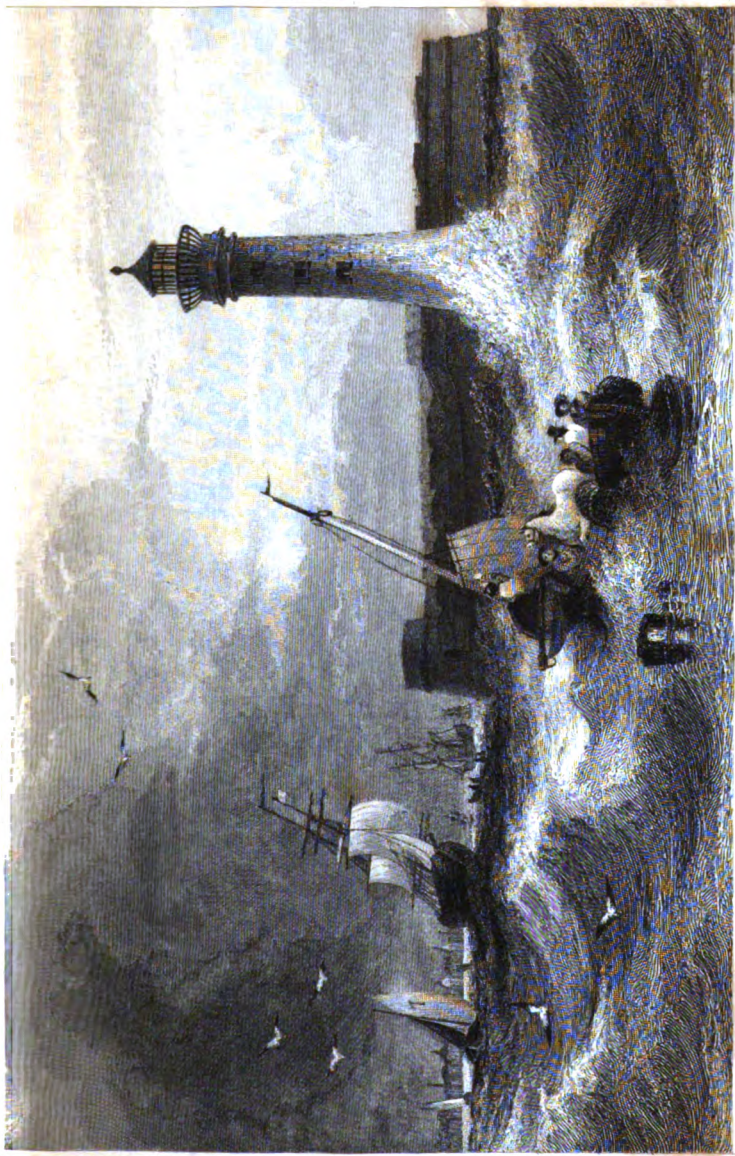
I. BLACK ROCK *Lighthouse at Liverpool.*

Among the various works that have been recently completed for the protection of our shipping, is the Black Rock Lighthouse,—a drawing of which accompanies our present number. This building was commenced under the superintendence of Mr. Foster the architect, and is a handsome specimen of the taste and skill of that gentleman. It stands on Rock Point, and, when entering the river Mersey, is passed on the right hand. The building is circular, the diameter of the base being thirty-five feet; and, in point of strength and durability, it is likely to equal any other of a similar nature. A solid work of masonry rises from the base of the building, to the height of thirty-two feet, from whence the staircase commences, that leads to the summit of it. The whole was completed in the year 1830, at an expense of about £35,000, which was defrayed by the corporation of Liverpool. Previous to the erection of the lighthouse, a perch was the only mark for the entrance of the river; and, while the building was in progress, a vessel bearing a light was moored in the stream for the same purpose. The lighthouse is constructed of Anglesea limestone. The first stone of it was laid in June 1827, and it was lit on the first of March, 1830. It is surrounded by water at about half-tide. The light is attended by three persons, who are appointed by the trustees of the Liverpool Docks, and is produced from 30 Argand burners, with parabolic reflectors. For the information of our nautical readers, the following particulars are taken from a small work on the Lighthouses of Great Britain and Ireland, preparing for publication by the Admiralty:—

“The Black Rock Light is revolving,—one revolution being completed in three minutes. In the course of the revolution, two bright lights, of the usual colour, and then a red one, are distinctly shewn, each during an interval of one minute. All these lights first appear small, and gradually become more powerful towards the middle of the minute, when they attain their full strength. They then decrease in the same proportion until they are eclipsed. The distance at which the light can be distinguished, must depend on the state of the weather; but when this is fine, it may be seen at a distance of fifteen miles. The height of the building, from the lantern to the base, is 75 feet, and the whole height of the former, above the level of the sea, is 88 feet. This lighthouse being white, is as conspicuous a mark by day as it is a useful one by night. In case of foggy weather, or in snow showers, a bell is kept ringing, as usual with other establishments of this nature.”

II. ON THE PROBABLE ERRORS IN DETERMINING TIME.

THE mode of determining time, generally used by seamen, is by observing the altitude of the Sun, or a star, and with it the latitude and the declination, computing the angle at the Pole, or the body's meridional distance. This angle,



Robt. Wallis.

THE BLACK-ROCK FORT & LIGHTHOUSE, LIVERPOOL.

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in the case of the Sun, is the time from apparent Noon; if a star has been observed, it must be combined with the right ascension of the sun and star. At sea, however, it seldom happens that the quantities necessary for the calculations are known with precision, various causes tending to render their determination inaccurate. The knowledge of the altitude depends on the skill of the observer, the goodness of his instrument, and the distinctness of the horizon; and moreover, when obtained, requires to be reduced by various corrections; one of which, the depression of the visual ray, or, as it is commonly called, the Dip, is very variable, owing to the uncertainty of refraction near the horizon.

The latitude originally deduced from altitudes, subject to similar errors, has to be brought up to the place of the ship, by estimating the run from the time of the last observation.

Finally, the declination, taken from the Nautical Almanac, depends on the accuracy of the estimated longitude.

It is clear, if we suppose that the assumed values of either or all three of these quantities be different from the truth, that we must expect a corresponding error in the deduced time; and such is the case in practice.

The object of the following remarks, is to point out means by which the effect of probable errors in the three quantities mentioned may be calculated. The table given at the conclusion is taken from a French work,* in which the subject has been fully considered; and if this, or similar works, were more generally in the hands of British seamen, the following sketch would be superfluous.

Putting θ for the hour angle, α for the altitude, ϕ for the latitude, δ for the declination, η for the azimuth or bearing from the meridian, and ψ for the angle at the Sun or star included by the Polar and Zenith distances, the partial errors in θ for a change in α , ϕ and δ are expressed as follows:—

$$\frac{d\theta}{d\alpha} = \frac{-1}{\text{Cos. } \phi. \sin. \eta} \quad \frac{d\theta}{d\phi} = \frac{-1}{\text{Cos. } \phi. \tan. \eta} \quad \frac{d\theta}{d\delta} = \frac{1}{\text{Cos. } \delta. \tan. \psi}$$

The demonstration of these expressions may be found in most works on trigonometry.

The values of $-\frac{d\theta}{d\alpha}$ and $-\frac{d\theta}{d\phi}$ in seconds of time are arranged in the table, the arguments for each being the azimuth η at the top, and the latitude ϕ at the side. The azimuth may be either observed with the compass at the time when the sights are taken, or it may be calculated from the expression, $\text{Sin. } \eta = \frac{\text{Sin. } \theta. \cos. \delta}{\text{Cos. } \alpha}$. If the practice be established, both to observe

and calculate the azimuth, at the same time that we learn what confidence is to be placed in the time deduced, we shall obtain a series of values of the variation of the magnetic needle; good observations of which are much wanted, independently of its use in merely working the dead reckoning, or shaping a course. At sea, in the day time, the probable error in altitude ought not to amount to more than two or three minutes, even in extreme cases, but at night it may greatly exceed that quantity. The latitude, however, if some days have elapsed without an observation, may be erroneous to the extent of a degree or more.

The value of $\frac{d\theta}{d\delta}$ will always be small in comparison with the other two, for even at the equinoxes, when the sun's declination varies most rapidly, an

* Memoirs sur l'Astronomie Nautique, M. Mazure Duhamel, Paris, 1822.

error of one hour in the estimated Greenwich time would be required to produce an error of one minute in the declination. We may, therefore, safely neglect it at sea. On shore, however, when observations for time are made, either for the measurement of differences of longitude, or for the purpose of rating the chronometers, and consequently when more accuracy is required, it may be proper to calculate the effect of a small change in the declination; in such cases, after calculating ψ from the expression
$$\text{Sin. } \psi = \frac{\text{Sin. } \theta. \text{ cos. } \phi}{\text{Cos. } \alpha}$$

the value of $\frac{d\theta}{d\delta}$ may be immediately found from the table for $\frac{d\theta}{d\phi}$, for the expressions for $-\frac{d\theta}{d\phi}$ and $\frac{d\theta}{d\delta}$ being similar, enter the table with ψ at the top, and δ at the side, and in the column of $d\phi$ will be found the value of $\frac{d\theta}{d\delta}$.

But when observations have been made on shore, it will perhaps be better to calculate all the values of $d\theta$ directly from the expressions given for them, than to take them from the tables, which, however, are quite sufficient for the purpose when at sea.

Having obtained the values of $\frac{d\theta}{d\alpha}$, $\frac{d\theta}{d\phi}$, $\frac{d\theta}{d\delta}$, they must be multiplied by

the values of $d\alpha$, $d\phi$, and $d\delta$, in minutes, and the sum of the products, attending to their signs, will be the whole error in θ .

It depends, of course, entirely on the experience of the observer, guided by the circumstances under which the observations are made, to determine what values are to be given to $d\alpha$, &c. There is nothing, however, to guide us to the knowledge, whether the altitude, latitude, and declination, be greater or less than the truth; we therefore cannot know with what signs these partial

errors of θ are affected. Consequently (leaving $\frac{d\theta}{d\delta}$ out of the question) we

must take the sum of the two other partial errors, as the *greatest possible error*, and their difference as the *least probable error*; and these should be registered in the journal with each observation—their mean being, of course, the *mean probable error*.

From an examination of the table, it will be seen, that the greater the azimuth, the less are the values of $d\theta$. This holds true until the bearing from the meridian amounts to 90° , when their values are a minimum, but they again increase as the body moves from that position. The angle ψ is also a maximum when η is; and as $\frac{d\theta}{d\delta}$ depends on the angle, it is a minimum when η is 90° . Hence we may perceive the reason of the rule given in most works on navigation, which directs sights for time to be taken when the body is in or near the prime vertical; in other words, bearing east or west. This rule should be carefully followed; and in cases when the body is in that position when below the horizon (which is the case when the declination is of a contrary denomination to the latitude) the altitudes should be taken as near the horizon as possible, provided they exceed 3 or 4 degrees, below which greater errors might be introduced, owing to the uncertainty of refraction, than those we wish to avoid.

Most works on navigation give tables of the altitude of the sun, and the time from noon, when it is in the most favourable position for observing. If not furnished with such tables, they may be computed from the following expressions :—

$$\text{Cos. } \theta = \text{Cotan. } \phi. \tan. \delta, \quad \text{Sin. } \alpha = \frac{\text{Sin. } \delta}{\text{Sin. } \phi}.$$

When rating chronometers by sights observed on shore, care should be taken that the observations are made from day to day, when the sun has the same azimuth ; as in that case the error in θ , from an erroneous assumption of ϕ , will be constant. A day or two before leaving port, sights should be obtained both before and after noon, at equal azimuths, in order to determine the true time and the error of the watch ; but the rate must be collected from the daily sights, which are comparative one with another, although the absolute time of each may be erroneous.

The error in an altitude taken with a sextant and artificial horizon, may be estimated at 20" or 30", more or less, according to the ability of the observer, and the perfection of the instrument ; that in the latitude must depend on circumstances, which may vary in every case.

While on the subject of chronometers, we may offer a remark on the very imperfect manner in which the determination of differences of longitude by them are registered in naval remark-books. We find it simply set down, that Cape — was found to be in longitude —° —' —", but not a word to inform us at what place the error of the chronometer on Greenwich time, had been last ascertained, or what was its assumed longitude ; of course, any error in the longitude of that place will also exist in the longitude of Cape —, so determined. The practice should be, to mention that such a place was found to be so many degrees, &c. East or West of the place where the error of the chronometer (on mean time at that place) had been last ascertained, and in addition should be noted, the sights from which the error and rate had been ascertained, with a description of the instruments, the latitude used in the computation, and the effect of any probable errors in the elements, determined as shewn above.

An example will serve to point out how useless the reports, made in the usual form, may become.

Suppose a vessel determines the error of her chronometers on Greenwich time, at a place, A, supposed to be in 56° 35' W., and sails to an unknown port, C ; arriving there, she finds it to be in longitude 61° 24' W., which information is sent home.

Another ship sails from a place, B, supposed to be in 68° 3' W., and going to the same port, C, places it in 61° 38' W., which is also transmitted to the proper quarter. In the mean time, the Commander-in-chief thinks it highly necessary to determine the true positions of A and B. He therefore detaches a ship for the purpose, which, after a long series of observations at A, places it in 56° 25' W., and measuring the difference of longitude betwixt A and B, finds it to be 11° 15'. B is consequently in 67° 40' W. Now, had the two ships first mentioned, instead of transmitting the absolute longitude of C, sent their determinations of its distance west and east of A and B, viz., 4° 49' W. and 6° 25' E., the hydrographer, by combining those determinations with the true longitudes of A and B, determined specially as mentioned, would find that the one ship placed C in

$$56^{\circ} 25' + 4^{\circ} 49' = 61^{\circ} 14' \text{ W.}, \text{ and the other in}$$

$67^{\circ} 40' - 6^{\circ} 25' = 61^{\circ} 15' \text{ W.};$ and there would be a strong presumption in favour of the truth lying betwixt the two. An immense mass

of geographical information, of the greatest importance to navigators, would soon be collected, were every ship to preserve the observations made to rate the chronometers during their several voyages, and investigate them in the manner proposed. This might be done by the assistance of skeleton forms, with little additional labour to the daily one of working the sights.

PARTIAL ERRORS in the Hour Angle in Seconds of Time, arising from a change of 1' in the Altitude and Latitude.

LATITUDE.	AZIMUTH OR BEARING FROM THE MERIDIAN.																		
	10°		20°		30°		40°		50°		60°		70°		80°		90°		
	α	ϕ	α	ϕ	α	ϕ	α	ϕ	α	ϕ	α	ϕ	α	ϕ	α	ϕ	α	ϕ	
0°	23.0	22.7	11.7	11.0	8.0	6.9	6.2	4.8	5.2	3.4	4.6	2.3	4.2	1.4	4.1	0.7	4.0	0.0	0.0
5	23.1	22.8	11.7	11.0	8.0	7.0	6.2	4.8	5.2	3.4	4.6	2.3	4.8	1.5	4.1	0.7	4.0		
10	23.4	23.0	11.9	11.2	8.1	7.0	6.3	4.8	5.3	3.4	4.7	2.3	4.3	1.5	4.1	0.7	4.0		
15	23.8	23.5	12.1	11.4	8.3	7.2	6.4	4.9	5.4	3.5	4.8	2.4	4.4	1.5	4.2	0.7	4.1		
20	24.5	24.1	12.5	11.7	8.5	7.4	6.6	5.1	5.6	3.6	4.9	2.5	4.5	1.5	4.3	0.7	4.3		
25	25.4	25.0	12.9	12.1	8.8	7.6	6.9	5.3	5.8	3.7	5.1	2.5	4.7	1.6	4.5	0.8	4.4		
30	26.6	26.2	13.5	12.7	9.2	8.0	7.2	5.5	6.0	3.9	5.3	2.7	4.9	1.7	4.7	0.8	4.6		
35	28.1	27.7	14.3	13.4	9.8	8.5	7.6	5.8	6.4	4.1	5.6	2.8	5.2	1.8	5.0	0.9	4.9		
40	30.1	29.6	15.3	14.3	10.4	9.0	8.1	6.2	6.8	4.4	6.0	3.0	5.6	1.9	5.3	0.9	5.2		
45	32.6	32.1	16.5	15.5	11.3	9.8	8.8	6.7	7.4	4.7	6.5	3.2	6.0	2.1	5.7	1.0	5.7		
50	35.8	35.3	18.2	17.1	12.4	10.8	9.7	7.4	8.1	5.2	7.2	3.6	6.6	2.3	6.3	1.1	6.2		
55	40.2	39.6	20.4	19.2	13.9	12.1	10.8	8.3	9.1	5.8	8.0	4.0	7.4	2.5	7.1	1.2	7.0		
60	46.1	45.4	23.4	22.0	16.0	13.9	12.4	9.5	10.4	6.7	9.2	4.6	8.5	2.9	8.1	1.4	8.0		
65	54.5	53.7	27.7	26.0	18.9	16.4	14.7	11.3	12.3	7.9	10.9	5.5	10.1	3.4	9.6	1.7	9.5		
70	67.3	66.3	34.2	32.1	23.4	20.3	18.2	13.9	15.3	9.8	13.5	6.8	12.4	4.3	11.9	2.1	11.7	0.0	

Explanation and Use of the Table.

This is a table of double entry, the argument at the top being the azimuth, or bearing from the meridian, for each tenth degree; that at the side, the latitude for each fifth degree as far as 70°.

The value of $-d\theta$ for $d\alpha = 1'$, is arranged in the column headed α ; the values of $-d\theta$ for $d\phi = 1'$, is arranged in that headed ϕ .

Example I.

In latitude 34° 55' sights for time were taken when the sun bore by compass 74° 20' E.; there being no variation, the estimated error in altitude was 1' 30" that in latitude 0' 0".

For $\phi = 35^\circ$ $\eta = 75^\circ$ in column α $d\theta = 5.4$ } taken at sight.
 " " " " ϕ " = 1.3 }

then, $5.1 \times 1.5 = 7.6$
 $1.3 \times 10 = 13.$

Sum - 20.6 greatest probable error in the time.

Difference - 5.4 least probable error in the time.

Example II.

At a place on shore, in latitude $50^{\circ} 14' N.$ the sun's true altitude was found to be $29^{\circ} 53'$, the declination being $9^{\circ} 56' N.$, the hour angle was found to be 3h 20m 44s. It is required to find the effect on θ of an error of $10''$, in the altitude, latitude, and declination.

$$\text{Sine } \eta = \frac{\text{Sine } \theta \cdot \text{Cos. } \delta}{\text{Cos. } \alpha}$$

$\theta = 50^{\circ} 11'$	Sine	9.88542
$\delta = 9^{\circ} 56'$	Cos.	9.99344
$\alpha = 29^{\circ} 43'$	C. Cos.	0.06196

$$\eta = 60^{\circ} 46' \quad \text{Sine} \quad \underline{\underline{9.94082}}$$

$$\text{Sine } \psi = \frac{\text{Sine } \theta \cdot \text{Cos. } \phi}{\text{Cos. } \alpha}$$

$\theta = 50^{\circ} 11'$	Sine	9.88542
$\phi = 50^{\circ} 14'$	Cos.	0.80595
$\alpha = 29^{\circ} 43'$	C. Cos.	0.06196

$$\psi = 34^{\circ} 31' \quad \text{Sine} \quad \underline{\underline{9.75333}}$$

$d \alpha = 10''$	Log. 1.	$d \phi = 10''$	Log. 1.	$d \delta = 10''$	Log. 1.
ϕ	„ Cos. 9.8059	ϕ	„ Cos. 9.8059	$\delta = 9^{\circ} 56'$	Cos. 9.9934
η	„ Sine 9.9408	η	„ Tan. 0.2521	$\psi = 34.31$	Tan. 9.8374
To reduce to time	8.8239		8.8239		8.8239
C. log. 15.	<u>0.37</u>	<u>0.76</u>	<u>0.76</u>	<u>0.45</u>	<u>0.45</u>
	— 9.5706	— 9.8819	— 9.8819	— 9.6547	— 9.6547

If these partial errors all operated in the same manner, the greatest probable error in the hour-angle would amount to $0.37 + 0.76 + 0.45 = 1.58$.

III. *The Battle of Tchesmé, from the journal of a British Officer in the Russian service.*

TCHESME', and not Navarino, splendid and complete as was the victory of the allied squadrons, was the real grave of the Ottoman navy.

In the year 1770, the Russian government, with a view of assisting the Greeks to throw off the Turkish yoke, sent a squadron of nine sail of the line and several frigates, with a large body of troops, to the Mediterranean, under the command of her favourite Count Orloff, who was assisted by the valuable professional experience of several distinguished British officers.

On Saturday, the ever-memorable 7th of July, 1770, information was obtained from a Greck felucca, that the Turkish squadron

was at anchor off Scio. At three in the morning Admiral Elphinstone's ship tacked, and led into the passage between the east side of Scio and the Natolian coast. Soon after, Count Orloff made a signal for a general chase. At eight the squadron of Admiral Elphinstone lay to, till the remaining divisions came up, and then the whole fleet sailed in company for the town of Scio, and about an hour after brought up within two leagues of the fort which commands the harbour. Here we had a full view of the Turkish fleet as it lay at anchor, a little above the north entrance of Tchesmé bay, opposite the town of Scio. Their force consisted of the following ships:—

	Guns.		Guns.
Capitana Ali Bey	. 100	Mustapha	74
Capitana Pacha . .	96	3 ships of	60
Catrona Auckarei .	84	2 heavy frigates,	
Real Mustapha . .	84	6 galleys, and some zebecs and	
Mulensi Achmet . .	84	neutral vessels, amounting in all	
Zefir	84	to upwards of 100 sail.	
Achmet	74		

The Captain Pacha's ship was about half a mile from the shore to windward of the rest, and near a very small flat island, on which we supposed they had thrown up some batteries to annoy us, but they had neglected even this advantage; and so unskillfully was their line formed, that only five of their largest ships could bring their broadsides to bear upon us at one time; thus losing all advantage of their immense superiority of force.

At nine o'clock Admiral Elphinstone repaired on board of Count Orloff's ship, to propose a plan of attack, but to his great surprise he found it already determined that it should be in line-of-battle, with the starboard tacks on board; that Admiral Spiritdoff was to have the honour of leading the van; that the Count in Commodore Greig's division would follow in the centre, while Admiral Elphinstone, with his squadron, should bring up the rear. This mode of attack did not appear to Admiral Elphinstone to promise all the success he could wish, and he therefore proposed another. The enemy being embayed on a lee-shore, he proposed leading in his own ship, to let go his anchor, with a spring on his cable, abreast the Captain Pacha, and that his other ships should anchor with springs on their cables, on the bow and quarter of the Turkish Admiral's second, and so to attack the rest of the Turkish fleet in the same advantageous manner. By this arrangement, our nine line-of-battle ships would have been engaged with only five or six of the enemy, and the rest of their numerous fleet have been rendered useless, as they could not attempt to quit their position without the greatest danger of running on shore.

However well conceived and advantageous as was this plan of the Admiral, Count Orloff resolved not to alter his own. Admiral

Elphinstone was only asked if he would undertake to lead on both tacks ; which he declined, stating, that, had his own plan been adopted, he should have thought himself bound in honour to be the foremost to carry it into execution, but as he thought the plan of attack of Count Orloff too uncertain to risk his reputation upon, he excused himself, unless expressly ordered so to do. At eleven, each Captain was on board his ship, and the signal was made for prayers, to supplicate the Almighty to crown our efforts with victory.

Every preparation for battle having been made, Count Orloff at noon threw out the red flag, as a signal for attack, upon which the whole fleet, ranged in order of battle, moved towards the enemy. Admiral Spiritdoff led the van, and bore down on the headmost ship of the enemy, the Capitana Ali Bey, of 100 guns. Besides the fire of this ship, the Admiral received that of four others, by which one hundred and fifty of his men were killed or wounded. The conduct of the Russians was admirable, reserving their own fire till within musket range, they poured in their well-directed broadsides with murderous effect. The compliment was fiercely returned, till, most of his rigging being shot away, he endeavoured to stand out of the line to repair damages, but was prevented by a shot that carried away his starboard mainbrace ; another cut in two the larboard main-topsail-sheet, so that the ship no longer answered her helm, and, being to windward, she fell with her broadside on board the Turk.

The Turks leaped in crowds upon her decks with headlong fury, but the steady gallantry of the Russians repulsed them, and, boarding in their turn, they struck the colours. On this occasion a troop of cuirassiers of the Imperial Guard, who, on their embarking at Kronstadt had excited the jests of our Jack tars, were of considerable service, and greatly distinguished themselves. The Turks, led on by the Captain Pacha, who displayed prodigies of valour, returned to the attack. The conflict between these two ships engaged the attention of both fleets ; grappled together, they fought hand to hand for fifteen minutes, when a column of flame and smoke burst from the Turkish Admiral's starboard quarter-gallery : the fire increased every moment, and with irresistible fury communicated to the rigging, masts, &c. of Admiral Spiritdoff's ship ;—the crews of both ships, exposed to the same calamity, forgot their animosity, suspended firing, and were only intent how to escape the impending destruction. Many, urged on by hope, leaped into the sea, while others quietly awaited their fate. The Turk's mainmast, all in flames, fell on board the Russian Admiral's ship, which blew up in the same moment, and all on board perished, with the exception of Admiral Spiritdoff, and ninety-five others, chiefly officers, who had fortunately quitted the ship in good time. The gallant and unfortunate Captain

Pacha was one of the last to quit his ship, and, though wounded, succeeded in reaching the shore by swimming.

The Turkish ship was now in one general flame, and being to windward, some of their fleet were endangered by her. The whole Turkish fleet was overcome with panic, and, to avoid the same fate, they adopted the fatal measure of cutting their cables, and running into the bay of Tchesmé.

This bay is about one mile broad, and two in length; the town is small, and stands almost at the bottom of it, thirty-five miles only from Smyrna. Here they hoped to remain secure at least for some days, but Admiral Elphinstone, eager to follow them, now proposed two fire-ships, and to lead them in himself the same night, while the Turks were still under the most desponding impressions; but General Hannibal (a negro) observed, that, as master of the train, it was his office. On this account, the fire-ships were not ready till the night following, which delay might have rendered the projected attack unavailable, had the Turks, in their dangerous situation, have come out, and engaged us the next morning, as they ought to have done, or at least have thrown up a formidable system of batteries, to prevent our getting in.

On Saturday, July the 7th, it was finally resolved, that at midnight, if the wind permitted, the *Netromena*, the *Ratisloff*, and the *Europa*, should first enter the bay. On a signal given, three old Greek vessels, fitted up as fire-ships, were to follow them. So crowded together were the Turkish fleet, that some of the small vessels were obliged to be hauled on shore, behind the large ships, not having sufficient room.

The honour of conducting this daring attack was given to our countryman, the present Admiral Greig, of the Russian navy, who hoisted his broad pendant on board the *Ratisloff*, and led into the bay in the most gallant style, under a heavy fire from the enemy's ships and batteries. They soon brought their broadsides to bear on the largest of the enemy's ships, and their shot and shells quickly carried destruction among them. The signal was now made for the fire-ships to stand in, which they succeeded in doing about one o'clock, without being perceived for some time by the enemy. The first and largest of them was commanded by Captain Dugdale, the second by Captain Mackinsey, and the third by a Russian officer. As the fire-ships were advancing towards the enemy, a shell from one of the Commodore's ships fell into the bunt of the fore-top-gallant-sail of one of the weathermost of the enemy's, which, being made of cotton, was instantly in a blaze, and nearly in the same moment the whole ship was enveloped in flame. Captain Dugdale's ship, owing to the men mistaking his orders, exploded without doing any execution, but Captain Mackinsey's ship was more successful; she was fired sufficiently near to increase the conflagration, which soon raged

with irresistible fury. No language can describe the sublime picture of horror and distress now presented by the Turkish fleet, of upwards of one hundred sail, in one general flame. While the flames were spreading destruction on all sides with the utmost rapidity, and ship after ship blowing up with their whole crews on board, the Russians kept up so incessant a fire of shot, shells, and small arms, that not one of the many thousands of their weeping friends on land, who witnessed their distress, dared venture to their relief.

Of all their numerous fleet, but one ship of 60 guns and a few galleys, were brought out of the bay—so complete our victory, so total their defeat. This splendid victory was achieved with comparatively a trifling loss on the part of the Russians; for, deducting the crew of Admiral Spiritdoff's ship, seven hundred men, their loss did not exceed thirty—while that of the Turks must have been more than ten thousand men.

III.—*Fragments of Voyages and Travels.* By Captain BASIL HALL, R.N., F.R.S. *First Series.* 3 vols. Cadell, Edinburgh.

(Continued from p. 138.)

It was observed in our first notice of these very interesting volumes, that the object of their author is one that has been much neglected, and we are so far confirmed in this opinion, that we have it in contemplation to second Captain Hall in his good work, at some future period of our labours, with a series of letters, containing advice to young persons about to enter the Royal Navy. While volumes of Voyages, Sketches, Novels, and Pamphlets on Improvements connected with naval affairs, have issued in abundance from the press, it is rather surprising that so important a subject as this should not have been taken up before. It is not unlikely that the difficult nature of such an undertaking, arising from the contrariety of opinions which are entertained on the various branches to be considered, may have deterred some from attempting it, but Captain Hall has fearlessly and successfully broken the spell, by relating in a familiar manner many scenes through which he has passed, to which he has added some good wholesome advice, which cannot fail to prove useful to his young readers at some stage of their professional life.

The early predilections of our author are all unique, even from his birth, for he tells us, that he came into the world in the midst of a gale of wind, and whether we see him busily employed in constructing his vessel for the *perilous voyage* across the pond, or indulging his youthful fancy with the technicalities of Shakespeare's *Tempest*, or contemplating the effects of a storm on some unfortunate vessel within a short distance of his father's mansion, the same spirit predominates, and fully bears him out, when he

says,—‘ Long before I shipped a pair of trowsers, I felt that a salt-water destiny was to be mine.’ After relating the particulars of his entree into the Royal Navy, with the very natural doubts, as to his future success, that arose when departing from home, and when left by his father on board the *Leander*, besides various interesting anecdotes, we come to the following remarks on the advantages which officers of the navy have, of making observations in foreign countries, advantages with which, Captain Hall seems to have been early acquainted. The *Leander* made a passage to Halifax, and the novelty of his situation drew from the young officer the resolution of seeing as much of the world as he could in the course of his career, and this too at the expense of his Majesty. Indeed, the restless and feverish anxiety with which he has pursued every object of interest, or that was likely to afford him information, is one of the most remarkable features of his character, and has enabled him to vary his professional narrative with those interesting scenes, than which nothing could be better calculated to win the attention of that class to which he addresses himself.

“ I have mentioned this,” says Captain Hall, “ merely because I think it furnishes a sort of encouragement to naval officers, of all ranks and ages, who, unless they be very stupid, or very unfortunate, or both, may, in the course of their lives, probably have nearly as ample means of observation in foreign parts, as if they had been born to fortunes, and spent them in the sole occupation of travelling. It is surely a pleasant affair to be carried about from place to place free of cost; and perhaps there is also some advantage in our being thus tossed about without any free choice of our own. There is often bitter disappointment, it is true, in being hurried away before our remarks are half made, with our curiosity only half satisfied, to be plunged into new scenes, piping hot from those we have left. But by this means the attention is kept briskly alive; and the powers of observation, being forced to act on the instant, are certainly rendered more acute. From so much, and such varied practice, also, the mind becomes more decided and clear, as well as more prompt, in its conclusions. And in consequence of this accumulation of knowledge, every new country visited appears to be more fertile than the last in objects of interest; till at length the field of view seems so thickly crowded, that the naval traveller, instead of having to search for materials, is generally overpowered by their abundance, and scarcely knows which to lay his hand upon, in order to describe the effect produced.

“ It is the curious property of well-directed inquiry into any branch of natural knowledge, that the thirst for such investigations generally goes on increasing with the indulgence; and, what is equally or more to the purpose, the motives to perseverance are proportionably augmented. I believe there are few exceptions to this rule; and I think it may be observed, that, in the Navy, precisely as an officer rises in the service, so his means of travelling to good purpose are improved likewise. As he advances in rank, his introductions to society become more easy and extensive, and his facilities for seeing strange things are multiplied at every step, till at length, when he arrives at the command of a ship, he finds himself in one of the most agreeable situations, perhaps, that the nature of things admits of, for viewing the world to advantage.

"It must be recollected, too, that the chief interest of most countries, and especially of new countries, lies on their sea-coasts, where the first towns are naturally erected. In those cases where this rule does not hold good, naval officers often contrive to visit the interior: and wherever they go, they are sure of a hearty welcome, and a ready access to all that is worthy of investigation. Their best passport, in fact, is their uniform—their best letters of introduction, the columns of the Navy list; and if in any case they fail to profit by the opportunities thus placed within their reach, the fault lies with the dull nature of the particular parties themselves, and not with their glorious profession. In all probability, the very same persons who, as officers, can turn their naval life to no account in the way of travelling, would have done no better in any other situation in life."—p. 93—96.

Like many other midshipmen who have gone before and after him, our author naturally expected that a display of judgment accompanying the ready performance of his duty, would certainly draw forth words of approbation from his commanding officers. He had yet to learn, that commendation is a scarce commodity on board a 'man of war.' But such is the case, although, to censure bad behaviour, and not to applaud good, seems extraordinary. The real secret consists in impressing every one on board with the idea, that, let him strive his utmost, he never can do more than his duty. Therefore, to praise a man for doing that which is only his duty, is obviously unnecessary, but to let him know when he is not doing it, is quite admissible, and altogether another affair. Mostly, however, instead of praise, reward follows good behaviour, in the shape of promotion, while it is pretty generally acknowledged by those who understand his character, that to praise a seaman would spoil him. To a young officer, with far different feelings, who, if he be well inclined, naturally strives to cultivate the good opinion of his superiors, a word of commendation is attended with salutary effects. In the performance of severe and harassing duties, it acts as a stimulant to exertion more or less powerful in proportion to its scarcity. Captain Hall draws an admirable contrast on 'diversities in discipline,' from those every-day scenes of men-of-war in former times, but we must leave such grave questions to those for whom they are intended, and follow the midshipman in his boyish pranks.

It was in the course of a cruise in time of war, when the young gentlemen of the *Leander's* cock-pit had known the full delights of 'salt junk,' also technically called 'salt horse,' that a feast was afforded them by the real kindness of an American captain, who happened to be a particular friend of our author. It consisted of a famous fat goose, a huge leg of pork, and a bag of potatoes.

"Such a present," says Captain Hall, "at any other time and place, would have been ludicrous; but at Bermuda, where we had been starving and growling for many months without a fresh meal—it was, to us hungry, salt-fed boys, the 'summum bonum' of human happiness.

“Next day, after breakfast, the barge was sent with one of the lieutenants for the Admiral, who came on board at eleven o'clock. But while his excellency was entering the ship on one side, I quitted my appointed station on the other, and, without leave, slipped out of one of the main-deck ports into the pilot-boat, to secure some conch-shells and corals I had bespoken, and wished to carry from Bermuda to my friends at Halifax. Having made my purchases, in the utmost haste and trepidation I was retreating again to my post, when, as my ill stars would have it, the first lieutenant looked over the gangway. He saw at a glance what I was about; and, calling me up, sent me as a punishment to the mast-head for being off deck when the Admiral was coming on board. As I had succeeded in getting hold of my shells, however, and some lumps of coral, I made myself as comfortable as possible in my elevated position; and, upon the whole, rather enjoyed it as a piece of fun.

“We then hove up the anchor, and as we made sail through the passage, I could not only distinguish, from the mast-head, the beautifully coloured reefs under water, but trace with perfect ease all the different channels between them, through which we had to thread our winding, and apparently dangerous, course. As the ship passed, the fort saluted the flag with twelve guns, which were returned with a like number: after which, we shaped our course for Norfolk, in Virginia.

“So far all was well. I sat enjoying the view, in one of the finest days that ever was seen. But it almost makes me hungry now, at this distance of me, to tell what followed.

“From the main-top-mast cross-trees, on which I was perched for my misdeeds, I had the cruel mortification of seeing my own beautiful roast goose pass along the main-deck, on its way to the cock-pit. As the scamp of a servant boy who carried the dish came abreast of the gangway, I saw him cock his eye aloft to discover how I relished the prospect. No hawk, or eagle, or vulture, ever gazed from the sky more wistfully upon its prey beneath, than I did upon the banquet I was never doomed to taste. What was still more provoking, each of my mess-mates, as he ran down the quarter-deck ladder, on being summoned to dinner, looked up at me and grinned. One malicious dog provoked me a good deal by patting his fat paunch—as much as to say, ‘What a glorious feast we are to have! Should not you like a bit?’—p. 214—216.

But the foregoing is an excellent illustration of the truth, that ‘it is the time and manner of doing a kindness that constitutes its chief merit.’

Captain Hall soon became a lieutenant of the *Endymion*, and had roamed about the Atlantic ocean, from shore to shore, when, in the month of November, 1810, this ship sallied forth from the harbour of Cork in quest of an enemy's vessel, reported to have been seen on the coast. This vessel, which turned out to be a little French brig, was observed from the frigate in the evening of the same day, but a calm prevented her being approached. A breeze, however, enabled the *Endymion* to near her chase in the course of the night, and the shot from a bow-gun was a sufficient hint for her to escape if she could. The brig made sail in an instant, and after her went the frigate. The chase continued till morning, and the brig, heedless of the shot from the fore-castle

guns of the *Endymion*, preserved her distance till it again fell calm, a joyful event for those on board, as the former, by means of her sweeps, or large oars, soon got nearly out of sight of the frigate. The disappointment on board the *Endymion*, occasioned by this, is well described by Captain Hall; and it was not a little increased by the crew of the brig being seen repairing damages aloft, ready for the next breeze, to preserve the advantage she had obtained. In the course of the following afternoon, a welcome breeze came up, and the ship soon began 'to speak,' to the great joy of all on board, and to the discomfiture of the brig. As the frigate brought the wind with her, she neared the brig fast, till night again came on, which produced the utmost anxiety to keep sight of her, while both vessels were sailing at the rate of nine knots per hour. In the course of the middle watch, the *Endymion* was so near to the brig, that an opportunity was taken of giving her a broadside. Captain Hall here says,

"Not a mortal on board the frigate expected ever to see the poor brig again. What, then, was our surprise, when the smoke blew swiftly past, to see the intrepid little cocky, gliding away more merrily than before. As far as good discipline would allow, there was a general murmur of applause at the Frenchman's gallantry. In the next instant, however, this sound was converted into hearty laughter over the frigate's decks, when, in answer to our thundering broadside, a single small gun, a six-pounder, was fired from the brig's stern, as if in contempt of his formidable antagonist's prowess.

"Instead of gaining by our manœuvre, we had lost a good deal;—and in two ways. In the first place, by yawing out of course, we enabled the privateer to gain several hundred yards upon us; and secondly, his funny little shot, which had excited so much mirth, passed through the lee foretopsail yard-arm, about six feet inside the boom iron. Had it struck on the windward side, where the yard was cracking and straining at a most furious rate, the greater part of the sails on the fore-mast might have been taken in quicker than we could have wished—for we were now going at the rate of eleven and a half, with the wind on the quarter.

"Just as we made out where his first shot had struck us, another cut through the weather main-top-gallant sheet; and so he went on, firing away briskly, till most of our lofty sails were fluttering with the holes made in them. His own sails, I need scarcely add, were by this time so completely torn up by our shot, that we could see the sky through them all; but still he refused to heave-to—and, by constantly firing his single stern-chaser, was evidently resolved to lose no possible chance of escape. Had one or two of his shot struck either of our top-masts, I really believe he might have got off. It therefore became absolutely necessary that we should either demolish or capture him without further loss of time. The choice we left to himself, as will be seen. But such a spirited cruiser as this, was an enemy worth subduing at any cost; for there was no calculating the mischief a privateer so admirably commanded might have wrought in a convoy. There was a degree of discretion, also, about this expert privateer's-man, which was very remarkable, and deserving of such favour at our hands as we had to spare. He took care to direct his stern-chaser so high, that there was little chance of his shot striking any of our people. Indeed, he evidently aimed solely at crippling the masts—knowing right well, that it would answer none of his ends to kill or wound

any number of his enemy's crew, while it might irritate their captain to shew him less mercy at the last moment, which, as will be seen, was fast approaching.

"The breeze had now freshened nearly to a gale of wind, and when the log was hove, out of curiosity, just after the broadside I have described, we were going nearly twelve knots (or between thirteen and fourteen miles an hour,) foaming and splashing along. The distance between us and the brig was now rapidly decreasing, for most of his sails were in shreds, and we determined to bring him, as we said, to his senses at last. The guns were reloaded, and orders given to depress them as much as possible—that is, to point their muzzles downwards—but not a shot was to be fired till the frigate came actually alongside of the chase. Such was the poor privateer's sentence of death—severe indeed, but quite necessary, for he appeared resolved never to yield.

"On we flew, right down upon our prey, like the enormous rock-bird of the Arabian Nights. We had ceased firing our bow-chasers, that the smoke might not stand between us and the lesson we meant to read to our resolute pupil, so that there was 'silence deep as death' along our decks—and doubtless on his; for he likewise had intermitted his firing, and seemed prepared to meet his fate, and go to the bottom like a man. It was possible, also, we thought, that he might only be watching, even in his last extremity, to take advantage of any negligence on our part, which should allow him to haul suddenly across our bows, and, by getting on a wind, have a chance of escaping. This chance, it is true, was very small; for not one of his sails was in a condition to stand such a breeze as was now blowing, unless when running nearly before it. But we had seen enough, during the two days we had been together, to apprehend that his activity was at least a match for ours; and as he had already shewn that he did not care a fig for shot, he might bend new sails as fast as we could."

The brig, finding she could not get away, at last surrenders—

"The manner in which this was done by the captain of the privateer was as spirited and characteristic as any part of his previous conduct. The night was very dark; but the ships were so near to one another, that we could distinguish the tall figure of a man mount the weather main-rigging of the brig, where he stood erect, with a lantern in his hand, held out at right angles from his body. Had this light not been seen, or its purpose not understood, or had it been delayed for twenty seconds longer, the frigate must, almost in spite of herself, have gone right over him, and the salvo of a double-shotted broadside would have done the last and fitting honours over the Frenchman's grave.

"Even as it was, it cost us some trouble to avoid running him down; for, although the helm was put over immediately, our lee quarter, as the ship flew up in the wind, almost grazed his weather gangway. In passing, we ordered him to bring-to likewise. This he did as soon as we gave him room; though we were still close enough to see the effect of such a manœuvre at such a moment. Every stitch of sail he had set was blown, in one moment, clean out of the bolt-ropes. His halyards, tacks, and sheets had been all racked aloft, so that every thing not made of canvass, remained in its place;—the yards at the mast-heads, and the booms rigged out—while the empty leech and foot-ropes hung down in festoons, where, but a minute before, the tattered sails had been spread.

"We fared, comparatively speaking, not much better; for although, the instant the course was altered, the order was given to let fly the topsail-halyards, and every other necessary rope; and although the downhaul-tackles,

clewlines, and buntlines, were all ready manned, in expectation of this evolution, we succeeded with great difficulty in saving the fore or main-topsails; but the top-gallant-sails were blown to pieces. All the flying kites went off in a crack, whisking far away to leeward, like dried forest-leaves in autumn."

The next thing was to take possession of the prize, no easy task in such weather; therefore, as it was not to be done then, on they jogged 'most lovingly together,' the brig repairing damages, and the frigate looking out sharp, that she should not make off. The poor brig, cut up as she had been, soon after this bore up in a furious squall of wind, and, to lose sight of her, produced the utmost consternation on board the *Endymion*, which is thus amusingly told:—

" 'Where is she?—Who was looking out?—Where did you see her last?'—and a hundred similar questions, reproaches, scolds, and the whole of the ugly family of oaths, were poured out in abundance; some on the privateer, whose adroitness had thus overreached our vigilance; some upon those who, by their neglect, had given him the opportunity; and many imprecations were uttered merely to express the depth of anger and disappointment at this stupid loss of a good thing, which had cost so much trouble to catch. All this passed over in the first burst—sail was made at once—the topsails, close reefed, were sheeted home like lightning—and off we dashed into the thick of the squall, in search of our lost treasure. At each mast-head, and at every yard-arm, there was planted a look-out man, while the fore-castle hammock-netting was filled with volunteer spy-glasses. For about a quarter of an hour a dead silence reigned over the whole ship, during which anxious interval every eye was strained to the utmost; for no one knew exactly where to look. There was, indeed, no certainty of our not actually running past the privateer, and it would not have surprised us much, when the squall cleared up, had we seen him a mile or two to windward, far beyond our reach. These fears were put an end to by the sharp-eyed captain of the fore-top, who had perched himself on the jib-boom end, calling out with a voice of the greatest glee—

" 'There he goes! there he goes! right ahead! under his topsails and foresail!'

" And, sure enough, there we saw him, springing along from wave to wave, with his masts bending forwards like reeds, under the pressure of sail enough to have laid him on his beam-ends, had he broached to. In such tempestuous weather, a small vessel has no chance whatever with a frigate; indeed, we could observe, that when the little brig fell between two high seas, her foresail flapped to the mast, fairly becalmed by the wave behind her.

" In a very few minutes we were again alongside, and, doubtless, the Frenchman thought we were at last going to execute summary vengeance upon him for his treachery, as we called it. Nothing daunted, however, by the style in which we bore down upon him, the gallant commander of this pretty little eggshell of a vessel placed himself on the weather-quarter, and with a speaking-trumpet in his hand, indicated, by gesticulations, a wish to be heard. This could not well be refused; and we steered as close as possible without bringing the two vessels in contact, or risking the entanglement of the yards.

" 'I have been compelled to bear up,' he called out in French, 'otherwise the brig must have gone to the bottom. The sea broke over us in such a way that I have been obliged, as you may perceive, to throw all my guns, boats, and spars overboard. We have now several feet water in the hold, in consequence of your shot, which you may likewise observe have nearly destroyed

our upper works. If, therefore, you oblige me to heave-to, I cannot keep the vessel afloat one hour in such weather.'

" 'Will you make no farther attempt to escape?' asked the captain of the *Endymion*.

" 'As yet I have made none,' he replied firmly; 'I struck to you already—I am your prize—and, feeling as a man of honour, I do not consider myself at liberty to escape, even if I had the power—I bore up when the squall came on, as a matter of necessity. If you will allow me to run before the wind, along with you, till the weather moderates, you may take possession of the brig when you please—if not, I must go to the bottom.'

"Such was the substance of a conversation, very difficult to keep up across the tempest, which was now whistling at a great rate. To have brought the ships again to the wind, after what had been said, would have been to imitate the celebrated '*Noyades*,' of Nantes; for the privateer must have been swamped instantly. Although we distrusted our companion, therefore, most grievously, we sailed along most lovingly together, as if we had been the best possible friends, for about sixty or seventy miles.

"At eight o'clock in the evening it began to moderate, and by midnight we succeeded in getting a boat on board of the prize, after a run of between three and four hundred miles. Such is the scale of nautical sport! And where, I now beg to ask, is the fox hunting, or the piracy, or any thing else, more exciting than this noble game?

"The brig proved to be the *Milan* privateer, from St. Malo, of 14 guns, and 80 men, many of whom were unfortunately wounded by our shot, and several were killed.

"The captain's name was *Lepelletier*—I have pleasure in recording it—*M. Pierre Lepelletier*, of St. Malo; and wherever he goes, I will venture to say he can meet no braver or more resolute man than himself.

"Long before he came on board, he had well earned the respect of his captors, high and low; and his manners and information, after we became personally acquainted with him, raised him still more in general estimation.

"One day, when I was walking with him under the half deck, I overheard two of the sail-makers conversing about the chase, the prize, and the prisoners—the only topics which occupied our thoughts for a week afterwards. These men were repairing one of the sails which had been shot through and split during the chase. One of them laid down his palm and needle, and, looking very significantly to our side of the deck, exclaimed,

" 'I say, Bill, is it not a pity, that the French captain walking there, is not an Englishman?'

There is much valuable instruction in these little volumes, and we earnestly recommend those parents, who may have a son destined for the sea, to lose no time in placing them in his hands.

M. DOUVILLE'S RESEARCHES IN AFRICA.

(Continued from page 203.)

We left *M. Douville* in the province of *Golungo Alto*, which he considers the most fertile of the kingdom of *Angola*. As in other provinces through which he had passed, the natives cultivate maize, beans, and cassado-root, besides which, oranges, citrons, pine-apples, bananas, and other tropical fruits, are plentiful. He describes the country as watered by numerous rivulets, and diversified

by mountains, which do not rise to a considerable height. Small lakes are abundant, the waters of which are more elevated, and of a higher temperature, than the rivers. The country in general is well wooded, and very different from that of the coast. Mount Muria, the summit of which is considerably above the mountains, not only of this but of the neighbouring provinces, is the point from whence various chains diverge in different directions. It is 14,611 feet above the level of the surrounding country, which M. Douville considers about 1279 feet above the level of the sea. The view of the forests is every where magnificent. Some of them are so thick, that they appear to be an entire mass of verdure and flowers; and the profound silence which reigns among them is interrupted only here and there by the noise of rivulets flowing over their rocky beds. The natives are timid and tractable in their disposition, and follow the employment of agriculture with great attention. Those that are free generally improve their condition in this manner; and polygamy, which is the custom of the country, contributes towards it, as the women are all obliged to work. The manufacture of earthenware, and cotton cloth of every description, in which the natives employ themselves, are sufficient proofs that they possess the means of adding to their own happiness. Independently of the negroes, who are under the government of the Sobas, there are a great number who are rich, and who dress in the European style.

From Galungo Alto, M. Douville proceeded northward into the little military province of Dembos. He gives the derivation of its name as signifying the general of an army, and is the title of each governor of a district, under whom there are several Sobas. Among the various superstitions of these people, M. Douville relates the following:

“The Dembos believe that the 1st of May is chosen by their deities to hold communication with mortals. On that day, with all their priests, they repair to the tombs of their ancestors in the forests, where they consult the divinities. Each Dembo offers a prayer to the soul of that one whom he has succeeded, and supplicates him to reveal his future destiny.”

When a Dembo sends for one of his subjects as a prisoner, he is taken, and secured by a large wooden fork, fitted closely to his neck; his hands are confined in a piece of wood made for the purpose, divided into two compartments, and in this manner he is led before the Dembo. Leaving these people, M. Douville continues to the southward, to the provinces of Ambacca and Pungo Andongo, from whence he crosses the Couenza river, in latitude $9^{\circ} 45'$ South, and longitude $18^{\circ} 5'$ East. The following extract will inform our readers of the nature of the country through which he passed:

“On leaving Ambacca, I proceeded to the southward, to the province of Pungo Andongo, and the agreeable sight of the environs of Ambacca was soon succeeded by the same sterile country which I had passed through in leaving Galungo Alto. The traveller suddenly quits a well-peopled country for a

dreary solitude, which fills the mind with melancholy. Not a hut is to be seen, and the roaring of wild animals, which we heard from time to time, convinced us that the lion reigned in these deserts. On the second day after our departure, we could see nothing that indicated the existence of man. The forest through which we were travelling presented nature in her wildest form. The cries of the owl, and the barking of the jackall, interrupted from time to time the mournful silence which prevailed, and warned us to be prepared for the attack of an enemy, of which the latter announced the approach.

"During the two long days which we passed in the forest, we found no water, not even a rivulet at which we might have quenched our thirst. The guides had assured me that we should find plenty, and on the faith of their experience I had not provided against such a want.

"The negroes, distressed by thirst, and labouring under their heavy burdens, stopped every moment, and disorder soon prevailed throughout my whole party; every one deserted their station, and left the road in search of water. I remained with a few negroes, and it was not until near midnight of the second day after our departure, that I found a little muddy pool, in which there were scarcely two glasses of water; but so glad were we to find it, that each wanted to be the first to drink it.

"A league further on, we discovered a small stream, and encamped on its bank. After each had satisfied his thirst, a large fire was quickly made, by the side of which my party stretched themselves, to wait the return of morning. The night was cold, and the humidity of the atmosphere so great, that in less than an hour afterwards my clothes were wet through. The thermometer was at 18°, and I found that the greatest humidity of the atmosphere was at three in the morning."

M. Douville was well received by the regent of the province of Pungo Andongo, and while at Loando having heard of an extraordinary group of huge rocks, for which this place is celebrated, he took the opportunity of seeing them, and gives us the following account of them:

"They form an enclosure, of which the interior circumference is nearly half a league in extent, and consist of eight principal mounts, composed of immense blocks of granite, the sides of which are so perpendicular, that it is quite impossible to gain their summit. The height of these rocks is about 400 feet; the space which is enclosed by them cannot be entered but through five very narrow passages, which wind in a serpentine direction among them.

"Every part of this remarkable place bore evident marks that the rocks were the remains of a mountain, which had been removed by some extraordinary convulsion of nature, and the fragments of volcanic substances which lay about, proved that a volcano had originally existed here."

M. Douville then gives some further particulars relating to it, which we must leave for the attention of the geologist, and proceed with him on his journey. He shortly crosses the Couenza, but does not give us any particulars respecting its size or importance, which may probably be attributed to his being ill with fever about the time.* Of the province of Haco, on the southern bank of this river, M. Douville says,

"The towns are enclosed by large stakes, from 12 to 15 feet in height, driven

* This river, which is not so large as the Congo, takes its rise in Mount Hele, in about 13° S. lat. and long. 23° 40' E in the Mumbos country.

into the ground, and strengthened by arches, supported by strong transverse pieces. The houses of the Sobas, and those of their wives and daughters, the storehouses of the town, and the powder magazine, are built in the middle of the enclosure, and surrounded also by a range of stakes in the same way as the outer one. These towns are always built near a forest, and generally on the bank of a river, over which is a bridge, to enable the natives to escape from the attack of an enemy.

“ At the ceremonies on the feast days, the Soba (of Haco) wears a peruke of three rows of curls. The hair of it is skilfully dressed, pieces of coral being suspended from each curl. This potentate in general wears nothing on his head, and is also carelessly dressed. The morning is passed among his nobles round a large fire in the middle of his house. The wife, who shares his bed, is seated behind him, and he never fails giving her the calabash to drink from, whenever it is presented to him. Towards the middle of the day, he proceeds to visit the merchants living round his house, from the motive of being regaled by them, according to custom, with some glasses of tafia.* He then returns home and dines, after which he retires to sleep. His siesta is followed by dancing and other diversions, at which he assists until he is tired, and thus his days are passed without alloy.

“ His subjects pay tribute to him as a matter of course. They present him with a fourth part of the produce of their hunting excursions, from which the Soba makes presents to those persons who he wishes to distinguish, and, above all, to the merchants who give him plenty of tafia. He reserves a small part of it for his family, and sells the remainder. Game is so abundant, that sufficient is killed every week to supply fresh provisions. This chief has also the right of receiving a part of the plunder which his subjects obtain from the neighbouring countries, and any one who is found to have broken this law is punished with slavery.”

After a few days' stay at Haco, M. Douville continued his journey towards the south, not, however, before he had experienced another attack of fever; and his wife, who had accompanied him, had become so ill from the effects of fever, produced by a *coup de soleil*, that left no hopes of her recovery. In his progress to the south, he observes an improvement in the face of the country. Vegetation becomes again luxuriant, and the forests assume an appearance, as he says, “ worthy of admiration.” Here, however, near the village of Quicusu, it was necessary for him to stop. The condition of Madame Douville was such, that she could proceed no further. She was, in fact, dying, and on the 10th of July she breathed her last. The proceedings of the natives on this occasion will give the reader so complete an insight to their manners and customs, that we cannot help quoting the traveller's own account of them; and, as we may incur the risk of recalling painful recollections in the mind of that gentleman, we shall trust to him for forgiveness.

“ From noon, the Soba knew that my wife was near her end, and consequently he came, with all his people, to my tent. At the moment she died, shouts of joy proceeded from his whole party, and they evinced, by all manner of grotesque actions, the pleasure they anticipated from the feasting which such an event must produce.

“ The Soba, who had waited with a lively impatience for her death, arose, and, approaching the couch on which the corpse lay, saluted it, by clapping his hands. This was no sooner done, than he turned towards me, and

* A strong liquor.

demanded a barrel of tafia, and another of gunpowder, that the funeral festival might commence. It may be imagined I complied with his request with an ill grace, and bade him retire.

"The Soba obeyed, accompanied by his people, and I was left alone. Absorbed with grief, I had scarcely discovered my situation, when the chief Macota announced himself, with the demand of three hundred *pannos*, or two hundred and twenty ells of cloth, for the departure of the deceased.

"The relatives of strangers who die among these people, pay to their Soba a fine for the crime committed by their relations dying in their territory. This fine consists of three slaves. The parents are seized if they are at hand, and if they are absent their chief is informed of the event, who immediately causes them to be apprehended, that the law may be fulfilled.

"I was soon made acquainted with this law, and, without refusing to conform to it, I replied to the Macota, that I could say nothing about it until the deceased, for which the fine was required, should be deposited in her grave. I requested of him to go and make preparations for this last duty, and I gave directions to my attendants, that I might not be again disturbed.

"I passed the day in sorrow, by the corpse of her by whom I had been fearlessly accompanied into these barbarous regions, who would have been happy in sharing my misfortunes to the end of my journey, and who had forfeited her life to her affection for me, in the flower of her age.

"About eight in the evening all the natives of the place, decked out with garlands, and crowned with small branches of trees, surrounded my camp. Some commenced a dance, others rent the air with their shouts, as usual on these occasions, while others again chanted their melancholy death-song; and each acquitted himself of the duty assigned to him. The Soba, and his nobles, attended at the door of my tent, which was closed: they were dressed in blue cloth, and each carried a staff in his hand. At my request, after about two hours, they retired to their chief's abode.

"I laid myself down to rest, but endeavoured in vain to sleep, although I had passed eight days without enjoying that happiness.

"On the following morning I distributed three hundred cartridges to the negroes, who were already prepared to assist in the funeral. The repeated discharge of musquetry announced the time to be approaching when it should take place, and shortly an immense crowd of natives covered the extensive space before the village. The mourners commenced their duty; the corpse was placed in the palanquin which my wife had used, the wives and the daughters of the Soba, covered with garlands, and crowned with branches of trees, hastened to surround it. The Soba took his station by my side, and accompanied the procession to the place of interment, while the musicians performed a march, and poured forth their chant for the deceased, and a great crowd of natives followed us dancing. All of these people were provided with a long slender reed, and enveloped in garlands. Four of the nobles carried the deities of the village, surrounded by priests, who, while they passed on, conjured them not to visit the people with the anger which they had displayed towards the stranger. They preceded the palanquin which contained the corpse, attended by their wives, and the daughters of the Soba and his chiefs. I followed with the Soba, who was attired in blue. His guard marched behind us, and next to them the mourners, followed by the people, who uttered the most hideous cries at each couplet of the death-song.

"The discharge of musquetry, which had continued from the time when I distributed the powder, ceased when we arrived at the grave; and the Soba delivered the following oration in the Bunda language:—

"My people, *Muta Calumbo** smiles upon us, *Quibuco** protects us. You

* Deities.

are destined for a happy life in the other world, since the white people have come to die among you. She whose memory we honour to-day is now your patroness, and you will serve her when you die. Give her a farewell."

"The cry of *bogueou*, by which this is expressed in the Bunda language, signifies literally, 'Adieu, our friend! Soon, soon, shall we meet again: live in peace, and protect us!' Repeated by every one, this cry resounded to a distance. Long will it be remembered; long will it be talked of; often will the parent relate to his child the event which has thus rendered their nation illustrious. They possess the remains of a white person. Ages will pass by, but this day will never be forgotten among the natives, and will be to them a new epoch."

The ceremony was completed, and the ornaments of Madame Douville were deposited with her remains, much to the regret of the Soba, who wished to possess them. A dance was performed round her grave! and a cross was erected, to mark its situation. The negroes look on a cross as the deity of the deceased, and this symbol is considered as sacred. In fact, when an image, representing one of their deities, is placed over the grave of a native, nothing can induce the negro to meddle with it, as he is impressed with a firm belief, that, if he molests it, he will draw down on him the anger of the deity, and a speedy death. The Soba, as a mark of honour, ornamented the grave of Madame Douville, a custom which, among them, is only due to their chiefs.

From the province of Haco, M. Douville continued to the south, through Zamba and Bailundo to Benguela, on the coast, not, however, without some considerable annoyance from the extortions of the people among whom he passed. To obtain his goods, was the chief object; he was declared to be a sorcerer by the Soba of Zamba, and owed his safety to threats, which were founded on the friendship of the Sobas in the states through which he had passed. At Benguela, having obtained fresh carriers, he set out for Bihé, the southernmost part of the country that he visited. His track lay principally up the course of the river Catumbela, which falls into the sea a little to the northward of Benguela. In proportion as he advanced into the country, the character of the natives was found to be more warlike; and it appears that the people of Bihé amuse themselves, six months every year, in fighting with the adjoining nations, not running away after making a show, but keeping the field to the last extremity. Even the female part of the community possess more than ordinary courage, and quickly proceed, from high words among each other, to fisticuffs. The slave trade is carried on in full career at Bihé, which is the principal source from whence Benguela is supplied with slaves. We must give M. Douville's description of the manner in which the purchase of a slave is made, the sex being of no importance.

"The seller offers only one at a time, unless a mother, with her infants of a very early age, be for sale. He arrives at the *pombo* (probably market place) accompanied by his friend, or mediator. One of these two persons offers a

slave without extolling any good qualities, unless the one offered be a young damsel, in which case a particular point is made of it, in order to obtain a higher price. The purchaser commences his part by giving the seller and his friend a tolerably good dram of tafia, which is considered as an indispensable duty on his part, and sometimes the business is half a day in settling. When the price is agreed on, and the goods inspected, which are to be given for the slave, the purchaser closes the bargain with a bottle of tafia of better quality than the first, which is emptied in a moment. The purchaser then avails himself of the half-stupified condition of the two persons of whom he is buying the slave, produced by the effects of his tafia, and manages to exchange the merchandise he had promised for that of an inferior quality; and if the price be to be paid in rum, he reduces the quantity about one half, and replaces it with water.

"While the treaty of purchasing is going forward, the purchaser is allowed to examine the health of the slave which is offered to him, but the bargain is not completed, and the slave remains in possession of his first master, until the goods have been delivered as agreed on. Even after this, the purchaser has not the right of loosing the cord by which the hands of the slaves are tied; and if he does so, he forfeits his goods along with the slave, who again becomes the property of the original owner. The operation of loosening the hands of the slave after being sold is the part of the vender only, and this deed closes the contract. The slave is then conducted to the house of the purchaser. The number of slaves sold annually at Bihé is about six thousand."

This immense number is marched by groups to Benguela, and there shipped for the Brazils. M. Douville tells us, that he met several of them on the road to Bihé, but that Loando sends away even more.

Bihé is the capital of the province of that name, and, before the conquest of Angola by the Portuguese, belonged to the king of *Humbe Jénéné*, who resided considerably further in the country to the south-east. It would be supposed that when the Portuguese first made their appearance in the country, the whole of the natives would have concentrated their strength, to drive away the common enemy. The king of Humbe took the field in support of the king of Angola, and called on his subjects of Bihé to accompany him. But these refused, alleging that they had not been ill-treated by the Portuguese, and could not therefore take arms against them; the consequence of which was, that the whole country suffered from the effects of a civil war, as well as the inroads of the foreigners.

In his route from Bihé to the northward, M. Douville passed over a mountainous country, where he found the natives not so well disposed towards him as hitherto. These people, who apparently have imbibed a spirit of boldness according well with the wild tracts they inhabit, attacked the traveller and his party, but were compelled to retire by the reception with which they met. At Canhinga, a large town further to the northward, near the banks of the Couenza, M. Douville assures us that human sacrifices are offered to their deities, on the occasion of going to war, which they never do without consulting that particular deity who, they imagine, presides over and directs such affairs. The oracle is delivered

from the lips of one of their own priests, a race of men who it may be supposed possess great influence over the superstitious natives. At the risk of being thought tedious, we cannot refrain from giving the following extract from the work before us :

“ When a man dies, his principal wife remains in the house, and at the end of every hour chants the death-song. When the principal wife of a man dies, he remains seated near the corpse, without uttering a word. At midnight, some animal is sacrificed to the spirits; and the warm blood is brought in a calabash, and placed by the side of the deceased. The spirits of the ancestors of the deceased are then implored to be favourable to her; and when the blood becomes cold, it is cooked, and given to her nearest relative. This person eats it, petitioning his deities at the same time, that it may pass into his own, and ensure him happiness all the rest of his life.

“ Dancing then commences round the house. All the relations of the deceased eat and drink to her eternal happiness. From time to time they call her by her name, and pray of her to remember those who she has left on earth; to intercede for them, and to prepare for them in the next world commodious houses, pretty gardens, and agreeable companions, and, above all, to let their dwellings be situated on the shady banks of limpid rivers.

“ On the following day the corpse is placed on a new mat in the middle of the house; the deities are arranged around it, some provisions are placed on a little stool by its side, and it is requested to eat, the spirits of the ancestors being at the same time called on to witness, that as the deceased person never wanted food when alive, so her body had abundance after she died. If the corpse be that of a man, all his wives, excepting the first or the principal, seat themselves at the door of the house during this part of the ceremony, and from time to time chant the death-song.

“ At midnight of the second day, a second victim is sacrificed, and the provisions which had been offered to the corpse are burnt. The blood of the animal is then offered to the deities surrounding the corpse; the flesh of it is roasted, and, with the blood, is partaken of by all who may be present at the ceremony. The remainder of the blood is left to congeal, and become dried by the sun of the following morning, and at noon of that day it is placed before the deities, which are removed from the corpse. At some time the body is placed at the door of the house. The odour which is exhaled from it is such, that it is impossible to remain near the house; but a fire is then made in the middle of the dwelling, and sweet-smelling herbs are burnt, in order that the relation of the deceased, who remains there, may not be incommoded by it.

“ When night comes on, it is supposed that the spirit has entirely left the body, and that it is preparing to go to the next world. Dancing is again commenced, the shouting is incessant, and on the following morning the corpse is wrapped in a piece of blue cloth, Indian corn being placed in the hands. The legs are then bent behind, the arms are folded across the breast, the deities are placed by its side, and after all the hair has been cut off, which is rolled up with great care in the leaf of a tree, and given to the nearest relative, the blue cloth is fastened tightly round it, and it is placed in a mat attached to a pole, by which it is carried away to be buried. This is done much in the same manner as before described; instead of tears and lamentations, shouts of joy are incessant; and the slow deliberate pace to which we are accustomed is substituted by dancing and revelry. Such are the customs on these occasions among the people of the independent nations of a country about 450 miles to the east of Loando, whose whole proceedings are indeed a tissue of the grossest superstitions.”

M. Douville proceeds from Canhungi along the bank of the

Couenza towards Loando, and in his way visits the volcano of Moulundu Zambi, or Mount of Spirits, near its left bank. The natives imagine that the mouth of this volcano is the entrance to the next world, and relate various marvellous stories concerning it. The position of this volcano was not known until M. Douville ascertained it, although a Portuguese, by the name of Lopez, who was in that country in 1578, alludes to it. M. Douville did not reach the summit of it, but ascertained its height to be about 10,870 feet, and concluded, from the appearance of the scorïæ about it, that a considerable time had elapsed since it had been in action. Our limits oblige us to defer M. Douville's second journey for another number, and we shall therefore leave him for the present at Loando making the necessary preparations.

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE, AND ART.

THE NEW REQUISITE TABLES.

Report of the Committee, to whom it was referred, to consider the Letter, addressed by the Right Honourable the Lords Commissioners of the Admiralty to the Council of the Astronomical Society, relative to the collection and formation of a new set of Requisite Tables.

ON examining the last edition of the *Requisite Tables*, published by Dr. Maskelyne in 1802, together with the *Appendix* thereto, the Committee find that several of the Tables, there given, are not now requisite for the purposes originally intended: a circumstance which has arisen either from other modes of solution having been introduced into modern treatises on Navigation, or from the recent improvements in the *Nautical Almanac*, where they are given more in detail; whilst others, not being sufficiently extensive, require to be enlarged and improved, in order to suit the present wants of the seamen. And although the Rev. William Lax published also, in 1821, a work of similar import and title, yet, notwithstanding the ability and care with which his Tables are constructed, the Committee are of opinion, that nearly the same remarks may be applied to this edition also. Added to which, the Committee are further of opinion, that there are several other Tables, not inserted in either of those works, which ought now to form part of a collection of Tables, of the kind submitted for their consideration.

But, without adverting more particularly to such Tables in the above-mentioned works, as might now be conveniently suppressed, or to those which might advantageously be altered or enlarged, the Committee think it more advisable to proceed at once to point out such Tables as, in the present advanced state of Nautical Astronomy, ought, in their opinion, to form the collection proposed. These are as follow: viz.

1. A Table of Refraction, to the nearest second, founded on M. Bessel's computations, adapted to a mean height of the barometer in English inches (≈ 30), and a mean height of Fahrenheit's thermometer (≈ 50): the altitudes to be the same as in the table of refraction inserted in the more recent volumes of the *Nautical Almanac*. And that subsidiary tables, or columns, be annexed, for the corrections to be applied for alterations in the barometer and thermometer.

2. The *true* Dip of the Sea Horizon, to the nearest second, for every foot of altitude from 1 to 100, and for every ten feet from 100 to 300 : with a collateral column shewing the effect of terrestrial refraction, as usually taken, whereby the *apparent* dip may be obtained.

3. The Moon's Parallax in altitude, to the nearest second, for every 10' of altitude, and for every minute of horizontal parallax : together with the proportional parts, at the side, for every minute of altitude, and every second of horizontal parallax.

4. The Augmentation of the Moon's horizontal Semidiameter, to the tenth of a second, for every 10" of her semidiameter, and for every requisite degree of altitude.

5. The Contraction of the Semidiameter of the Sun and of the Moon, caused by refraction, to the nearest second, for every 5° of inclination, and for every requisite degree of altitude.

6. A Table of Natural Versed Sines, to 6 places of decimals, for every 15" from 0° to 180°, with the time scale annexed.

7. A Table of the Logarithms of Numbers, to 6 places of decimals, from 0 to 100000, with the time scale annexed.

8. A Table of the Logarithms of Sines, Co-sines, Tangents, Co-tangents, Secants, Co-secants, and Versed Sines, to 6 places of decimals, for every 15" of the quadrant; together with a preliminary Table of the Logarithms of the Sines and Tangents, for every second for the first 3°: and the time scale applied to the arcs.

9. A Table of Proportional Logarithms for an interval of 3 hours to 5 places of decimals, for every second: and for an interval of 24 hours for every minute.

10. A Logarithmic Table for the Equation of Equal Altitudes, for noon and midnight, to 4 places of decimals; similar to Mr. Baily's Table XVI.

11. A Table of the Hour Angle and Altitude of a heavenly body, each to the nearest minute, when on the prime vertical, or when the vertical is a tangent to the circle of declination, for every degree of declination from 0° to 30°, and for every degree of latitude from 0° to 60°.

12. A Table of Semi-diurnal Arcs, to the nearest minute of time, for every degree of declination from 0° to 30°, and for every degree of latitude from 0° to 60°: refraction not being included.

13. A Table of Amplitudes, to the nearest minute, for every degree of declination from 0° to 30°, and every degree of latitude from 0° to 60°.

14. A Traverse Table, to 2 places of decimals, to every 15 minutes of a degree from 0° to 90°, and to 240 miles at least.

15. A Table for the Reduction to the Meridian, to one place of decimals, for every second of time from 0^m to 36^m. With a Supplementary Table for the second part of the Reduction for every 10 seconds of time from 5^m to 36^m.

16. A Table of Second Differences, to the hundredth of a second, for the intervals requisite in the use of the *Nautical Almanac*: together with a Table of Third Differences, where necessary.

17. A Table of Meridional Parts, to two places of decimals, for every minute of the quadrant, computed on the assumption that the compression of the earth is $\frac{1}{365}$.

18. Workman's Table for correcting the mean middle latitude.

19. A Table of the length of a degree of Longitude, and also of Latitude, to 5 places of decimals, for every degree of the quadrant, computed on the assumption that the compression of the earth is $\frac{1}{300}$, and that a degree of longitude on the equator is equal to unity. Also the same values expressed in feet, on the assumption that the length of a degree of longitude on the equator is equal to 69.15 miles, or 365110 feet.

20. A Table for converting Degrees, Minutes, and Seconds of the Circle, into corresponding expressions of Time, and *vice versá*.

21. A Table for reducing the mean time of the Moon's passage over the meridian of Greenwich, to the mean time of its passage over any other meridian.

22. A Table of Corrections for converting *intervals* of Mean Solar Time into corresponding *intervals* of Sidereal Time.

23. A Table of Equivalents for converting *intervals* of Sidereal Time into corresponding *intervals* of Mean Solar Time.

24. A Geographical Table (arranged according to the line of coast) of the most important places interesting to seamen (specifying the precise point as minutely as possible), founded on the best authorities, with distinguishing marks for those places whose positions have been more accurately ascertained; containing their longitudes (both in degrees and in time) and latitudes, with the authority for the same, together with their altitude above the sea, and the variation of the compass at the place at a given epoch, if known, as well as the establishment of High Water at such places as are situated near the sea, and the rise at spring tides.

Such are the Tables which the Committee conceive will be found most generally useful to the practical navigator; and although several new Tables are proposed to be introduced, and others considerably enlarged, yet they are of opinion that the work will not prove much more bulky or expensive than some of the publications of a similar import now in use. The Tables are, for the most part, such as already exist, and as are available for the purposes of this publication, without the infringement of any private right: the rest may be computed at a trifling expense.

The Committee recommend that, in all cases, the formulæ and data on which the Tables are founded, be either fully detailed in a copious explanation, or that a reference be given to works of acknowledged reputation and of easy access, where the same may be found; in order that any person, desirous of examining the same, may be enabled to verify the computations, and to satisfy himself as to their accuracy. They likewise recommend that the use and application of each Table to every problem requisite in Nautical Astronomy be explained in a clear and familiar manner, accompanied by Rules and Examples, for the benefit of those who are little conversant with the subject.

Should the proposed collection of Tables be considered too large for one volume, the Committee recommend that Nos. 7 and 8 (comprising the logarithms of the Natural Numbers, and of the Sines, Co-sines, &c.) be separated from the rest, and formed into a distinct volume by themselves, to be called Part II., and to be sold separately, if required; in which case, they recommend that those logarithms be extended to 7 places of decimals.

Hitherto the Committee have considered only such Tables as are in frequent use on board a ship, without regard to those which are occasionally required by the more active and experienced officer, when he is employed on any scientific expedition, or in maritime surveying; and without allusion to such Tables

and Formulæ as he may also require in the reduction of his observations. Tables of this kind might perhaps be more properly formed into another part (to be called Part II. or Part III., as the case may be), or they might be classed under another head, and published totally distinct from the others. For, as a smaller number of copies would be required, the Committee recommend that they should be printed, and sold separately from the first Part.

The Committee propose also to annex to this Part a small collection of Tables, for the more easy and economical reduction of newly-observed stars,—a subject which has very much increased of late years, and which still bids fair to accumulate on the hands of the computer. It is well known that, in reducing the great mass of observations made by Mr. Groombridge and Sir Thomas Brisbane, very considerable labour and expense have been incurred; and as further observations may be expected, from time to time, from Paramatta and the Cape of Good Hope, as well as in this country, it is highly desirable that an economical and expeditious mode of reduction should be introduced; for, without reduction, no observations are of much utility or avail.

Tables of the kind here alluded to, and which the Committee will proceed to state in detail, exist, for the most part, in manuscript, in the hands of private individuals, who would readily complete and prepare them for publication: so that Government would be at no further expense than the first outlay of money for printing; which, the Committee are of opinion, will be repaid, either by the sale of the work, or by the saving of expense through the facilities afforded in the reduction of the observations above alluded to. But the mere temporary outlay of paper and printing in a case of this kind (where there is no charge for computation) is so trifling, that the Committee are confident they need make no further appeal to a Government which has adopted the same plan on several former occasions, and which is at all times disposed to promote every object of useful science. The Tables are as follow: viz.

a. A more enlarged Table of Refraction than the one alluded to in the preceding part of this Report, logarithmic as well as in natural numbers; with subsidiary Tables for all the corrections depending on alterations in the Barometer and Thermometer.

b. A logarithmic Table, to 6 places of decimals, to facilitate the computation of the Longitude by means of Moon-culminating Stars: similar to Mr. Riddle's Table XXXIII.

c. A logarithmic Table to 5 places of decimals, for determining Altitudes by means of the Barometer: similar to Mr. Baily's Table XXXVI., but extended to every degree of the sum of the two thermometers.

d. A Table of logarithmic Sines and Co-sines, to 4 places of decimals, for every minute of time from 0 to 24 hours.

e. A Table of logarithmic Sines and Co-sines, Tangents and Secants (the tangents and secants to be divided by 15), to the same number of places in the decimals, for every 10 minutes of space, from 0° to 90° .

f. A Table to facilitate the computation of the amount of precession, for long periods, for stars situated within 10 degrees of the pole.

g. A Table of logarithmic Sines, Co-sines, Tangents and Co-tangents, for every hundredth of a degree, to 5 places of decimals.

h. A Table of Natural Sines, Co-sines, Tangents and Co-tangents, for every minute of the quadrant, to 5 places of decimals.

- i. A collection of useful Formulæ and Constants.
- k. A Table of comparative Weights, Measures, and Moneys, of different countries.
- l. The Angle of the Vertical, to the tenth of a second, and the Logarithm of the Radius of the Earth, to 7 places of decimals, for every degree of latitude; computed on the 3 assumptions that the compression of the earth is = $\frac{1}{297}$ $\frac{1}{298}$ $\frac{1}{299}$.
- m. A Table of the equivalent values of Reaumur's and the Centigrade Thermometers, as compared with Fahrenheit's.
- n. A Table of Chords, to 4 places of decimals, for every two minutes, from 0° to 90°.
- o. Tables for determining the time of High Water at the port of London, on any given day.

As most of the Tables here proposed are of *permanent* utility, and as it is consequently of great importance, not only to correct any errors that may from time to time be discovered, but also to guard against those which would probably occur in any reprint of the work, at any future time, the Committee suggest the propriety of ascertaining the advantages attending the printing of the tabular part in stereotype.

* FRANCIS BAILY, *Chair man*.

April 11, 1832.

NAMES OF THE COMMITTEE.

Professor AIRY.	Capt. JAMES HORSBURGH.
C. BABBAGE, Esq.	Rev. Dr. INMAN.
*F. BAILY, Esq.	*Capt. P. KING, R.N.
*Capt. F. BEAUFORT, R.N.	*Lieut. P. LECOUNT, R.N.
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Lieut.-Gen. Sir T. M. BRISBANE,	T. MACLEAR, Esq.
K.C.B.	Capt. W. F. W. OWEN, R.N.
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Professor HAMILTON.	*Lieut. W. S. STRATFORD, R.N.
GEORGE HARVEY, Esq.	*Dr. TIARKS.
*T. HENDERSON, Esq.	*J. WROTTESELY, Esq.
Sir J. F. W. HERSCHEL, K.G.H.	

N.B. Those Members, to whom an asterisk is affixed, formed the Sub-Committee.

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

For the various appointments that have taken place, in consequence of the recent important measures connected with the Navy, we must refer our readers to our *Miscellany*.

We have the satisfaction of enriching our work with a monthly list of newly-built merchant vessels, extracted from Lloyd's Register-book of Shipping, up to the latest returns. Having been favoured with these lists from the commencement of the present year, we hope to continue them regularly.

Those of our readers who may be unacquainted with the new establishment for the exhibition of works of practical science in Adelaide-street, No. 7, will find the means of employing a leisure moment there with advantage. Mr. Perkins' steam-gun, the late discovery of obtaining the electric spark from the magnet, the models of steam-boats in operation, Mr. Holdsworth's revolving rudder, Lieut. Rogers' anchor, besides a great many other models, and a collection of splendid geological specimens, are well worth the attention of scientific men,

and more particularly of Naval Officers. Among others is the model of Mr. Canning's simple life-raft, which should be known to every sea-going person, and which we shall endeavour to describe in a future number.

A new steam-boat, named the *Quorra*, has been built at Liverpool, and is on the point of proceeding with Mr. R. Lander up the celebrated river of that name, which he has lately discovered. The voyage is one of a trading description, and conducted at the entire expense of a body of merchants in Liverpool. There is little doubt of its being attended with many very useful results, not only in a commercial, but in a scientific point of view, in which latter the observations of Lieut. W. Allen, who proceeds in her, at the desire of the Admiralty, will be highly interesting. In a commercial light, we consider it as fraught with great advantages to the merchants, and that it will open a trade between this country and the whole of western Africa. It is expected that some of the persons of this expedition will penetrate to Timbuctoo.

NAVAL INTELLIGENCE.

(From the Naval Papers.)

THE ROYAL NAVY IN COMMISSION.

*. S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

ACTÆON, 26—Hon. F. W. Grey, 28th May, at Gibraltar.
ÆTNA, S. V. 6—Com. E. Belcher, March, at Tenerife.
AFRICAN, St. V. 1—Lt. J. Harvey, 7th June, Falmouth.
ALBAN, St. V.—Lieut. H. Walker, (a) April, at Constantinople.
ALBERT, 18—Com. J. C. Fitzgerald, Pacific.
ALFRED, 50—Capt. R. Maunsell, 20th May, sailed from Malta.
ALLIGATOR, 28—Capt. G. E. Lambert, 16th Feb. arrived Cape Good Hope; 22d Feb. sailed for India.
ALGERINE, 10—Com. Hon. J. F. F. De Roos, 30th April, at C. Frio.
ARACHNE, 18—Com. W. G. Agar, 10th May, at Port Royal, from Chagres.

ARIADNE, 28—Capt. C. Phillips, 14th April, at Port Royal.
ASIA, 84—Capt. P. Richards. Flag of Adml. Parker, Tagus.
ASTREA, 8—Capt. W. King, Falmouth.
BADGER, 10—Com. G. F. Stowe, 28th Jan. at Mauritius.
BARHAM, 50—Capt. H. Pigot, 29th April, at Constantinople.
BEACON, (late *METEOR*),—Com. R. Copeland, 3d May, commissioned at Portsmouth.
BEAGLE, 10—Com. R. Fitz-Roy, 30th April, at Rio Janeiro.
BELVIDERA, 42—Capt. Hon. R. S. Dundas, Malta, from Nauplia. 16th May sailed for Constantinople.
BLANCHE, 46—Capt. A. Farquhar, K. H. C. B. 10th May, at Port Royal, Jamaica.

- BLOSSOM**, S. V. 16—Com. R. Owen, April, at Nassau.
BRISK, 3—Lieut. J. Thompson, Gold coast.
BRITANNIA, 120—Capt. F. Rainier, Tagus.
BRITON, 46—Capt. J. D. Markland, C. B. Tagus. 3d June left Portsmouth.
CALEDONIA, 120—Capt. J. Hillyar, Tagus. 27th May left Plymouth.
CASTOR, 36—Capt. Sir R. Grant, Kt. Chatham.
CHALLENGER, 28—Capt. C. H. Freemantle, 30th Nov. Sincapore, from Madras.
CHAMPION, 18—Com. Williams, 8th June arrived at Plymouth.
CHARVEDIS, 3—Lieut. R. B. Crawford, Gold coast.
CHILDERS, 18—Com. R. Deans, 8th June, at Oporto.
CLIO, 18—Com. J. J. Onslow, Nov. Callao.
COLUMBIA, St. V. 2—Lt. R. Ede, 3d June sailed for Mediterranean.
COLUMBINE, 18—Com. O. Love, May, at Porto Rico, from Antigua.
COMET, 18—Com. A. A. Sandilands, 4th Feb. at Sincapore.
COMET, St. V.—Woolwich.
CONFIANCE, St. V. 2—Lieut. H. F. Belson, Woolwich.
CONFLICT, 12—Lieut. G. Smithers, 10th March, Lat. 7° S. Long. 16° W. from Ascension.
CONWAY, 28—Capt. Eden, 10th June sailed from Plymouth for Jamaica.
CORDELIA, 10—Com. C. Hotham, 29th April, at Corfu.
CRACKER, 1—Lieut. J. J. Morgan, Portsmouth.
CROCODILE, 28—Capt. J. W. Montagu, 26th Dec. left Madras for Trincomalee.
CRUIZER, 18—Com. J. Parker, China seas.
CURAÇOA, 26—Capt. D. Dunn, 30th March sailed from Cape of Good Hope.
CURLEW, 10—Com. H. D. Trotter, 27th Mar. in Simon's Bay.
DEE, St. V.—Com. R. Oliver, Woolwich.
DISPATCH, 18—Com. G. Daniell, Plymouth.
DONEGAL, 74—Capt. J. Dick, 15th June, arrived in the Downs.
DRUID, 46—Capt. G. W. Hamilton, C. B. April, in River Plata.
DRYAD, 42—Capt. J. Hayes, C. B. 9th May left Sierra Leone for Gambia.
DUBLIN, 50—Capt. Rt. Hon. Lord J. Towns- end, 22d Jan. left Rio for Pacific.
ECHO, St. V.—Lieut. Otway, 15th June sailed for Mediterranean.
FAIRY, S. V. 10—Com. W. Hewett, surveying North Sea.
FAVOURITE, 19—Com. J. Harrison, April, at Ascension.
FIREBRAND, St. V.—Lieut. T. Baldock, Fal- mouth.
FIREFLY, 2—Lieut. J. M'Donnell, 19th March sailed from Havana for Nassau.
FLAMER, St. V.—Lieut. R. Bastard, Woolwich.
FLY, 10—Com. P. M'Quhae, 10th May, at Port Royal.
GANNET, 18—Com. M. H. Sweney, 4th May sailed from Port Royal, Jamaica.
HARRIER, 18—Com. H. S. Vassal, 2 April arrived at Madeira; 3d, sailed for India.
HERMES, St. V.—Lieut. R. Bastard, 29th May sailed from Plymouth.
HYACINTH, 18—Com. W. Oldrey, May, Cuba.
IMOGENE, 18—Capt. P. Blackwood, East Indies.
INVESTIGATOR, 16—Mr. G. Thomas, Sheer- ness.
ISIS, 50—Capt. J. Polkinghorne, 28th Mar. sailed from Ascension for Cape.
JASEUR, 18—Com. P. Harding, 25th April arrived at Mauritius.
KANGAROO, 3—Lieut. J. Hookey, Bahamas.
LEVERET, 10—Lieut. W. F. Lapidge, 23d May sailed, Tagus.
LIGHTNING, 18—Com. T. Dickinson, April, at Rio.
LIGHTNING, St. V.—Woolwich.
MADAGASCAR, 46—Capt. E. Lyons, 29th April, coast of Syria.
MAGICIENNE, 14—Capt. J. H. Plumridge, Feb. arrived at Bengal.
MAGNIFICENT, 4—Lt. J. Paget, Port Royal.
MAIDSTONE, 42—Capt. C. M. Schomburg, 25th April, at Bahia.
MASTIFF, 6, S. V.—Lieut. J. Graves, Ports- mouth.
MELVILLE, 74—Capt. H. Hart, 5th April sailed from Cape for East Indies. Flag- ship. V.-Adm. Sir J. Gore, K.C.B.
MESSENGER, St. V.—Lieut. B. Aplin, Wool- wich.
METEOR, St. V.—Lieut. Symons, Woolwich.
MINX, 3—Lieut. J. Simpson, Port Royal.
NAUTILUS, 10—Com. Rt. Hon. Lord G. Pau- lett, Feb. 21st, at Oporto from Cork.
NIMBLE, 5—Lieut. J. M. Potbury, coast of Cuba.
NYMROD, 20—Lord E. Russell, Plymouth.
NORTH STAR—Capt. Hon. G. W. Trefusis, May, at Bermuda.
OCEAN, 80—Capt. S. Chambers. Flag ship, Sheerness, V.-Adm. Sir J. P. Beresford, Bt. K.C.B.
ONYX, 10—Lieut. A. B. Howe, Cork.
ORESTES, 18—Com. W. N. Glasscock, Ports- mouth.
PALLAS, 42—Capt. W. Walpole, 24th April arrived at Barbadoes from Antigua.
PEARL, 20—Com. R. Gordon, 10th May, Port Royal, Jamaica.
PELICAN, 18—Com. J. Gape, 22d April, at Patras.
PELORUS, 18—Com. R. Meredith, 31st Jan. arrived at S. Leone, and sailed for Accra.
PHILOMEL, 10—Com. W. Smith, 15th April, at Gibraltar.
PICKLE, 5—Lieut. E. Stopford, 12th May ar- rived at Barbadoes.
PIKE, 12—Lt. A. Brooking, Cork station.
PINCHER, 5—Lt. W. S. Tulloh, Bahamas.
PLUMPER, 12—Lieut. T. Cresser, 18th Jan. River Gambia.
PLUTO, St. V.—Lieut. G. Buchanan, Bight of Benin.
PROCRIS, 10—Com. J. T. Talbot, 22d May ar- rived at Gibraltar.
PYLADES, 18—Com. E. Blankley, 24th April, at Pernambuco.
RACHORSE, 18—Com. C. H. Williams, 2d April, left Barbadoes; 20th April, arrived at Halifax, from Bermuda.
RAINBOW, 28—Capt. Sir J. Franklin, Knt. 2d April, Corfu.
RALEIGH, 18—Com. A. M. Hawkins, 22d May arrived at Malta from Nauplia.
RAPID, 10—Com. C. H. Swinburne, 29th April at Nap. di Romania.
RATTLESNAKE, 28—Capt. C. Graham, Pacific.
RAVEN, S. V. 4—Lieut. W. Arlett, Africa.
RECRUIT, 10—Lt. T. Hodges, 25th May arrived at Halifax; 28th sailed for Ber- muda.
REVENGE, 78—Capt. D. H. Mackay, Tagus.

- ROMNEY**, *Troop Ship*, 27th May sailed from Plymouth.
- ROSE**, 18—Com. E. W. Pilkington, May, at Vera Cruz.
- ROYALIST**, 10—Lieut. R. N. Williams, Oporto.
- ST. VINCENT**, 120—Capt. H. F. Senhouse, April, at Malta. Flagship Vice-Admiral Sir H. Hotham, K.C.B. &c.
- SAMARANG**—28, Capt. C. H. Paget, 2d May arrived at Pernambuco.
- SAN JOSEF**, 110—Capt. R. Curry, Plymouth, Flag-ship Admiral Sir M. Dixon, K.C.B.
- SAPPHIRE**, 28—Capt. Hon. W. Wellesley, 10th May, Port Royal.
- SCYLLA**, 18—Com. Hon. G. Grey, 28th May, at Malta.
- SERINGAPATAM**, 46—Capt. Hon. W. Waldegrave, Pacific.
- SKIPJACK**, 5—Lieut. W. Shortland, Bahamas.
- SNAKE**, 16—Com. W. Robertson, Woolwich.
- SOUTHAMPTON**, 52—Capt. J. M. Laws, 20th Jan. at Singapore. Flag of Rear-Admiral Sir E. Owen, K.C.B.
- SPARROWHAWK**, 18—Com. Currie, act. 10th May, at Port Royal.
- SPEEDWELL**, 5—Lt. W. Warren, Havana.
- STAG**, 46—Capt. Sir T. Trowbridge, Tagus.
- SULPHUR**, 8—Com. W. T. Dance, King George Sound, Australia.
- SWAN**, 10—Lieut. J. E. Lane, North Sea.
- SYLVIA**, 1—Lieut. T. Spark, North Sea.
- TALavera**, 74—Capt. S. Brown, Downs.
- TALBOT**, 28—Capt. R. Dickinson, C. B. 28th Jan. at Mauritius.
- TRINCULO**, 18—Com. R. Booth, Cork.
- TWEED**, 28—Com. A. Bertram, 12th May, at Jamaica.
- TYNE**, 28—Capt. C. Hope, 18th June arrived at Portsmouth.
- UNDAUNTED**, 46—Capt. E. Harvey, 27th Mar. in Simon's Bay.
- VERNON**, 50—Capt. Sir F. Collier, Knt. Woolwich.
- VICTOR**, 18—Com. R. Russell, 18th March, arrived at Bermuda.
- VICTORY**, 104—Capt. H. Parker. Flag-ship Admiral Sir T. Foley, G. C. B. Portsmouth.
- VIPER**, 6—Lieut. H. James, 27th May sailed for Lisbon.
- VOLAGE**, 28—Capt. Right Hon. Lord Colchester, Pacific.
- WARSPITE**, 76—Capt. C. Talbot. Flag-ship Adm. Sir T. Baker, K.C.B., April, at Rio.
- WINCHESTER**, 52—Capt. Rt. Hon. Lord W. Paget, 12th May, at Port Royal. Flag-ship Vice-Adm. Sir E. G. Colpoys.
- WOLF**, 18—Com. W. Hamley, 21st Feb. arrived at Ceylon.
- ZEBRA**, 18—Com. D. De Saumarez, 6th Dec. at Sydney.

A life-boat, on a new plan, has been built at Madras, by the master-attendant of that Dock-yard, for the purpose of communicating with vessels in spite of the terrific surf which prevails there. It has been found to answer remarkably well, and is entirely free from all danger.

Henry Labouchere, Esq., has been appointed one of His Majesty's Commissioners for executing the office of High Admiral of the United Kingdom of Great Britain and Ireland.

The Management and Superintendence of the Civil Departments of the Navy have been committed to the following officers:—Capt. Wm. Symonds, Surveyor; J. T. Briggs, Esq., Accountant-General; the Hon. R. Dundas, Storekeeper-General; J. Meek, Esq., Esq., Comptroller for Victualling; and Sir Wm. Burnett, Physician.

His Majesty's packet Zephyr, Lieut. Church, being found defective, was paid off at Plymouth, on Tuesday, and the *Thais* is recommissioned in her stead.

H.M.S. Conway, 28, Captain Henry Eden, having embarked Earl Mulgrave and suite at Plymouth, sailed from that port for Jamaica on the 10th of June.

Regular communications between France and Algiers are on the point of being established. The *Scipion*, a steam-packet of 80-horse power, was to have commenced running from Marseilles on the 19th of May.

His Majesty's ship *Vernon*, 50, Capt. Sir F. Collier, C.B., is fitting with all possible dispatch.

His Majesty's sloop *Snake*, Commander Robertson, built on Captain Symonds's plan, is fitting in the basin at Woolwich. She has completed her complement of men. This vessel, with the *Vernon*, will join the experimental squadron, under the command of Sir Pulteney Malcolm.

Arrangements have been made to place the Dock-yards, as one of the measures arising out of the abolition of the Navy Board, under other control. The office of Commissioner is to be annulled, but, instead of substituting for it the appointment of a Superintendent, in the person of a Captain of one of the Royal yachts, as has been in other cases observed, the duties are to be under the regulation of the respective Commanders-in-Chief.

His Majesty's steam-vessel *Lightning*, sailed, on the 4th of June, from

Woolwich for Rotterdam, with the beautiful model-frigate, the *Royal Louisa*, in tow, which was launched a few weeks since, intended as a present from His Majesty to the King of Prussia. Lords Frederick and Adolphus Fitzclarence, with young Prince George of Cambridge, embarked in the *Lightning*. She sailed a few days before, but was obliged to put back when within ten leagues of Rotterdam, on account of bad weather.

Two of Morton's railway slips, for hauling vessels up with their masts standing, are ordered to be fitted in Woolwich Dock-yard.

The *Grasshopper*, 18, is sold out of the service, and delivered up to the purchaser, Mr. Ward, of Radcliffe, near London. Several more of the small vessels are about to be sold, viz.:—*Ontario*, 18, *Podargus*, 14, *Sheerwater*, 10, and *Rosario*, 10, being unfit for any further service.

Captain Symonds entered upon his duties, as Surveyor of the Navy, on the 1st of June.

The establishment of Deptford Dock-yard has been finally broken up, and placed under the superintendence of Commissioner Sir John Hill, Knight, of the Victualling-yard. A portion of the former is now being added to the latter yard, which will enclose the masts, pond, and boat-house, within the walls of the Victualling Establishment.

On the 24th of May, the following officers, non-commissioned officers, and privates, of the Royal Marines, and Royal Marine Artillery companies, embarked on board *H.M.S. Talavera* and *Britannia*, under the immediate directions of Major-General Sir James Cockburn, Inspector-General of the Royal Marines, viz.:—Royal Marines, Capt. Clements, Lieuts. Griffin and E. Rea, and 200 rank and file; Royal Marine Artillery Companies, Brevet-Major T. L. Lawrence, First-Lieuts. F. Spry and J. B. Castieau, Second Lieuts. J. Fraser and T. Holloway, and 90 rank and file.

The following Midshipmen have been found duly qualified in navigation, on examination at the Royal Naval College, viz.:—Mr. J. S. W. Grandy, of *H.M.S. Victory*; Mr. D. B. Davies, late of *H.M.S. Calcutta*; Mr. A. Wilson, of

H.M.S. Donegal; Mr. H. W. Daniel, late of *H.M.S. Satellite*; Mr. G. J. Burslem, of the same ship; Mr. J. Palmer, of *H.M.S. Talavera*; and Mr. F. S. Stenton, of *H.M.S. Castor*.

Sir R. Seppings, F.R.S., late Surveyor of the Navy; G. Smith, Esq., Secretary to the Navy Board; and Commissioner Middleton—have retired on superannuation, the latter with the rank of Rear-Admiral.

John Gaze, Esq., has succeeded Mr. Brown, as Master-Attendant.

Twenty-seven Marines have been embarked on board the *Excellent*, in lieu of the Marine Artillery sent on secret service.

Mr. Brown, Master-Attendant of Sheerness Dock-yard, has retired on superannuation, after an honourable and faithful servitude of considerably over half a century.

A remarkable and distressing instance of cholera at sea, has occurred since our last, on board the ship *Brutus*, which sailed from Liverpool on the 18th of May, with 330 emigrants, for Quebec, the whole number of people on board amounting to three hundred and forty. About ten days afterwards, the disease made its appearance, an event which might have been expected in so crowded a ship. The number of deaths increased rapidly up to the 3d of May, when the vessel put back, and reached Liverpool on the 13th. The cases which had then occurred amounted to 117; eighty-three of which had terminated fatally. A correspondent in the *Times* has designated this as a disgrace to the character of British shipping, and observes very justly, that had the rules been observed, as in other ships, respecting cleanliness, and the proper number of persons only been taken on board, that it would not have happened: an opinion in which we cordially agree.

We observe, that another ship, the *Lord Wellington*, has put back to Milford, having sailed from Waterford with emigrants, some of whom have died from the cholera; and we have no doubt, that it may be attributed to the same cause.

The *Cockatrice* brigantine was lately launched at Pembroke.

The *Meteor* steam-vessel, Lieutenant Symonds, arrived on 23d May, from the

Mediterranean: she sailed from Malta the 3d June, Gibraltar the 14th, and Cadiz on the 15th inst.—The Rt. Hon. Sir F. Adam, late Governor of the Ionian Islands, recently appointed to the command of the forces in India, came home passenger.

The magnificent steam-vessel *Salamander*, 4, which has just been launched at Sheerness, has been coppered, and has taken her four masts in. She remains in the basin. She is 92 feet in length, and 32 feet in breadth, and measures 807 tons.

The experimental or evolutionary squadron is ordered to rendezvous in the Downs, and Vice-Adm. Sir Pulteney Malcolm takes the command, in the *Donegal*. It is supposed that the squadron will be sent to manœuvre in the North Sea. In consequence of the absence of the *Britannia* and *Caledonia*, the squadron will now consist only of the following:—H. M. S. *Donegal*, 74, Capt. Dick; *Talavera*, 74, Capt. Brown; *Vernon*, 50, Capt. Sir F. Collier; *Castor*, 38, Capt. Sir Richard Grant; and *Snake*, 16, Capt. Robertson. The latter is a new sloop, built on Capt. Symonds' plan.

The *Illustrious* and *Marlborough*, of 74 guns each, are to be cut down to 52-gun frigates.

The Thetis.—Sir C. Robinson, in the Court of Admiralty, in concurrence with an application from the King's Advocate to that effect, directed that the

dollars saved from the wreck of the *Thetis* should be paid to the owners, proprietors, or consignees. Some of the stores saved from her have arrived at Portsmouth, in the *Britomart* transport.

The squadron off the Tagus now consists of the *Britannia*, 120; *Caledonia*, 120; *Asia*, 84; *Revenge*, 78; *Stag*, 46; *Leveret*, 10; and *Viper*, of 6 guns.

The *Java*, 52, and *Vindictive razée*, 50, the latter with the fortified bow, constructed by Mr. Blake, are in a state of forwardness, and will soon be taken out of dock, at Portsmouth.

Rear-Admiral White is appointed Superintendent at Portsmouth Dockyard, and will reside in the house now occupied by Mr. Aylen, who will remove into that vacated by Mr. Gaze, late one of the Master-Attendants at this port.

The *Castor* went out of dock, at Chatham, on Thursday, the 31st May. She is a warlike-looking vessel, and possesses better quarters than any ship of her class in the service. She mounts 32-pounder long guns on her main deck, and carronades of a similar calibre on the quarter-deck and fore-castle. The following are the dimensions:—

DIMENSIONS OF H. M. S. *CASTOR*, OF 36 GUNS.

Length on lower deck	159ft. 0in.
Breadth	42 6
Depth of hold	13 6
Burthen in tons	1283.

LIST OF THE ROYAL YACHT CLUB, FOR 1832.

HIS MAJESTY, THE KING
H. R. H. THE DUKE OF GLOUCESTER, } Patrons.
THE EARL OF YARBOROUGH, Commodore.
THE EARL OF BELFAST, Vice-Commodore.

Captain Arden Adderley, R. N. cutter *Julia*, 42 tons
The Marquess of Anglesey, cutter *Pearl*, 113 tons
The Viscount Ashbroke
George Ackers, Esq. cutter *Arrow*, 84 tons
The Earl of Belfast, cutter *Louisa*, 164 tons, and ship *Emily*, 33 tons
The Earl of Belmore
Captain P. Browne, R. N.
Thos. Fairfax Best, Esq. cutter *Georgiana*, 36 tons
Charles Bowdler, Esq. cutter *Merlin*, 82 tons
Edward H. Byrne, Esq.
Charles Brett, Esq. schooner *Gem*, 125 tons
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The Duke of Buccleugh, cutter *Flower of Yarrow*, 129 tons
John Smith Barry, Esq. cutter *Morning Star*, 64 tons
Sir Wm. Curtis, Bart. schooner *Emma*, 132 t.
S. Challen, Esq.
The Earl of Coventry, cutter *Ariel*, 71 tons
Andrew Corbet, Esq. cutter *Hebe*, 63 tons
John Campbell, Esq. cutter *Dream*, 66 tons
H. C. Campbell, Esq. cutter *Union*, 48 tons
The Earl of Chesterfield, cutter *Secret*, 170 t.
Lord Clonbrock, cutter *Scorpion*, 110 tons
Rev. J. G. Challen, cutter *Giulia*, 42 tons
Sir W. Cosway, Baronet
G. C. Call, Esq. yawl *Hind*, 21 tons

- Geo. Courtney, Esq. cutter *Dolph*, 48 tons
 John Christie, Esq. cutter *Zephyr*, 36 tons
 Captain A. L. Corry, R.N.
 Lord Durham, cutter *Caroline*, 50 tons
 F. Cuthbert
 The Marquess of Donnegal, cutter *Zoe*, 33 tons
 Richard Day, Esq. cutter *Gulnare*, 38 tons
 William Delafield, cutter *Heron*, 66 tons
 A. W. J. Deane
 The Earl of Errill
 G. A. Eullerton, cutter *Zephyr*, 55 tons
 P. Hesketh Fleetwood, cutter *Lancaster Rose*,
 34 tons
 Lord Grantham, cutter *Nautilus*, 103 tons
 John L. Gower
 Jos. Gulston, Esq. cutter *Nelson*, 93 tons
 Lord F. L. Gower
 The Rev. Dennis George, cutter *Vampyre*,
 49 tons
 The Hon. Capt. Greville, R.N. cutter *Dauntless*,
 81 tons
 Captain J. Gulston Garland, R.N.
 J. Gruethhead, Esq. cutter *Zadora*, 27 tons
 Capt. Thos. Garth, R.N. cutter *Eliza*, 34 tons
 Thos. Gibson, Esq. cutter *Therese*, 121 tons
 Philip Gell, Esq. schooner *Arrow*, 81 tons
 Thomas Gregg, Esq. cutter *Iris*, 75 tons
 Algernon Greville, Esq. cutter *Phantom*, 56 t.
 Sir James Robt. Graham, Bart. the Admiralty
 yacht
 Thomas Halifax, Esq.
 Rear-Admiral Sir Graham Eden Hamond,
 Baronet, C.B.
 The Hon. W. Hare
 Thos. Harman, Esq. cutter *Wombwell*, 33 tons
 Captain W. A. Heringham, R.N. cutter *Will
 o' Wisp*, 35 tons
 G. V. Heneage, Esq. cutter *Harriet*, 60 tons
 Wm. Hornby, Esq. cutter *Forest Fly*, 31 tons
 The Earl of Hechester, cutter *Petrel*, 85 tons
 Major-Gen. Johnstone, cutter *Mary*, 53 tons
 Lord Viscount Kirkwall
 Robt. Kingscote, Esq. cutter *Nettle*, 57 tons
 Capt. J. Kean, R.N. cutter *Turk*, 44 tons
 John Kennedy, Esq. cutter *Phantom Witch*, 44 t.
 J. Lindgren, Esq.
 The Earl of Listowell, cutter *Ann*, 42 tons
 Jas. Lyon, Esq. cutter *Blue-ey'd Maid*, 50 tons
 William Light, Esq. cutter *Gulnare*, 43 tons
 William Latham, Esq. cutter *Druid*, 45 tons
 Sir George Leeds, Baronet
 James Maxse, Esq. cutter *Mirande*, 164 tons
 Lord Viscount Melville
 Lieut.-General Kenneth M'Kenzie, yawl *Highland
 Lass*, 25 tons
 Vice-Admiral Sir T. B. Martin, K.C.B. the
 Navy Board yacht
 John Mills, Esq.
 Wm. Markham, Esq. schooner *Mary*, Cowes,
 75 tons
 John Digby Murray, Esq. lugger *Peri*, Cowes,
 60 tons
 James Meiklam, Esq. cutter *Fanny*, 75 tons
 C. G. Morgan, Esq. cutter *Harriet*, 96 tons
 R. W. Newman, Esq. cutter *Sylph*, 52 tons
 Duke of Norfolk, cutter *Arundel*, 188 tons,
 and cutter *Swallow*, 124 tons
 Lord Newborough, cutter *Sapphire*, 70 tons
 Sir Thos. Ormsby, Bart. cutter *Witch*, 63 tons
 Right Hon. Sir Arthur Paget, cutter *Nymph*,
 31 tons
 S. P. Peach, Esq. cutter *Ellen*, 46 tons
 Sir Richard Perlestone, Bart. schooner *Ju-
 verna*, 64 tons
 H. Perkins, Esq.
 J. P. Powell, Esq. schooner *Briton*, 92 tons
 The Rev. F. Pare
 John Hey Puget, Esq. cutter *Osprey*, 45 tons
 The Duke of Portland, ketch *Crown*, 158 tons,
 and brig *Pantaloon*,* 306 tons
 Charles Pratt, Esq. cutter *Psyche*, Cowes, 60 t.
 John S. Pakington, Esq. cutter *Liberty*, 42 t.
 Sir Hyde Parker, Bart. cutter *Rob Roy*, 52 t.
 John Storey Penleaze, Esq. ketch *Wyvern*,
 83 tons
 Sir Henry Rivers, Bart. cutter *Earl St. Vin-
 cent*, 41 tons
 J. Reynolds, Esq.
 Aldborough Richardson, Esq. cutter *Zebra*,
 51 tons
 Clement Ruding, Esq. cutter *Isabella*, 40 tons
 Rich. Shee Raikes, Esq. cutter *Dove*, 55 tons
 Horatio Ross, Esq. schooner *Peg-o'-Ramsey*,
 79 tons
 Rev. A. Suckling, cutter *Ruby*, 50 tons
 Lord John Scott, cutter *Ada*, 40 tons, and
 cutter *Lufra*, 80 tons
 Thos. Ashton Smith, Esq. cutter *Menai*, 175 t.
 J. L. Symonds, Esq. cutter *Emerald*, 58 tons
 Colonel Shedden, yawl *Frisk*, 25 tons
 James Smith, Esq. cutter *Amethyst*, 21 tons
 W. H. Sanders, Esq. cutter *Altisadora*, 28 tons
 Colonel Seale, Lord of the Isles, 45 tons
 James Scott, Esq. cutter *Bereaford*, 26 tons
 P. Davis, Sherston, Esq.
 Sir Jas. Stewart, Bart. schooner *Sappho*, 66 t.
 J. Saunderson, Esq. cutter *Nenha*, 49 tons
 Marquess Thomond, schooner *Rostellan*, 60 t.
 Sir Geo. Thomas, Bart. lugger *Leonora*, 20 tons
 C. R. M. Talbot, Esq. schooner *Galatea*, 189 t.
 Henry Thorold, Esq. brig *Coquette*, 150 tons
 John S. Tollmache, Esq. cutter *Matilda*, 44 t.
 Lord Vernon, brig *Harlequin*, 292 tons
 Major-General Sir Richard Hussey Vivian
 Sir Francis Vincent, Bart. schooner *Red
 Rover*, 80 tons
 Joseph Weld, Esq. cutter *Alarm*, 193 tons,
 and cutter *Lulworth*, 127 tons
 Owen Williams, Esq. cutter *Gazelle*, 87 tons
 T. P. Williams, Esq. schooner *Hussar*, 120 t.
 Hon. N. White, cutter *Ondine*, 57 tons
 Captain G. Wyndham, R.N. schooner *Jan-
 nette*, 110 tons
 Charles Ward, Esq. cutter *Guerilla*, 35 tons
 George Wyke, Esq. schooner *Poetess*, Anti-
 gua, 30 tons
 Sir Thos. M. Wilson, Bart. cutter *Syren*, 45 t.
 Fred. West, Esq. cutter *Owen Glyndwr*, 113 t.
 J. Woolmore, Esq. the *Trinity* yacht, 141 tons
 Sir Willoughby de Broke, cutter *Antelope*,
 90 tons.
 Sir Godfrey Webster, Baronet
 Earl of Yarborough, ship *Falcon*, Cowes,
 351 tons

* The *Pantaloon* was built at Froom, by Capt. Symonds, R.N. for the Duke of Portland, and launched in June, 1831. In August, was purchased by the Admiralty. She is the fastest vessel of her size in the Navy, and a most beautiful model.

MOVEMENTS OF TRANSPORTS.

ARAB—Lieut. Harris, 8th June, sailed from Cork for Ceylon.
 AMPHITRITE—Lieut. Cooley, 21st June, arrived at Portsmouth.
 BRITOMART—17th June, arrived at Portsmouth from Rio.
 DILIGENCE—Plymouth.
 HOPE—Lieut. Ryder, 19th June, sailed from Portsmouth.
 INDUSTRY—Woolwich.
 LORD WELLINGTON—17th June, sailed from Portsmouth for Dublin.
 LEONIDAS—Lieut. Woolridge, 13th June, sailed for Quebec.
 ORESTES—Lieut. Garret, 15th May, sailed for Quebec.

ROSLIN CASTLE—Lieut. Derriman, 31st May arrived at Portsmouth.
 SYLVIA—Lieut. Wesley, 8th June arrived at Portsmouth, 13 June sailed for Woolwich.
 STENTOR—Lieut. Barber, 23d May, arrived at Portsmouth.
 SUPPLY—Deptford.
 WILLIAM HARRIS—Lieut. Stevenson, 8th May, sailed for Halifax.

Discharged lately—Cygnet, Lieut. Lester; Recovery, Lieut. Brady; Neva, Lieut. Adamson; Marquis of Huntley, Lieut. Mayne; Parmelia, Lieut. Sanders; Maitland, Lieut. Davison.

EAST INDIA SHIPPING.

On the 15th of May, a Court of Directors was held at the East India House, when Captain Bryan Broughton, of the ship *Earl of Balcarras*, took leave of the Court previous to departing for China direct. The under-mentioned ships were taken up and timed, viz.:—*Boxbournebury* and *Barrooa*, for China and Quebec; *Moffatt*, for China and Halifax; to be afloat on the 17th of May, and sail from Gravesend at the expiration of fifteen days from the date of their coming afloat.

A Court of Directors was held on Wednesday, the 23d of May, at the East India House, when the ship *Bolton*, taken up for one voyage to and from Bengal, was appointed to be afloat on the 24th of May, and to sail to Gravesend on the 5th of June.

On the 24th of May, the despatches for China, by the ship *Earl of Balcarras*, Captain

Bryan Broughton, were closed at the East India House, and delivered to the purser of that ship.

On the 30th of May, a Court of Directors was held at the East India House, when the ships *Langton* and *Recovery*, taken up for one voyage to and from Bengal, were timed; to be afloat on the 1st of June, and to sail from Gravesend, the former on the 14th, and the latter on the 21st of the same month.

On the 12th of June, a Court of Directors was held at the East India House, when the undermentioned ships, taken up for a voyage to and from Bengal, were timed, viz.:—*Cesar*, to be afloat on the 18th instant, and to sail from Gravesend the 7th of July; *Ann* and *Amelia*, *Lord Amherst*, *Georgiana*, and *Benccolen*, to be afloat the 14th, and to sail from Gravesend on the 3d of August.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR THE PRESENT YEAR.

<i>Built in January.</i>							
VESSELS.	RIG.	TONS.	WHERE BUILT	VESSELS.	RIG.	TONS.	WHERE BUILT
Barbadian	Barque	245	Liverpool.	Stirlingshire	Brig	218	Maryport.
Eclipse	Schooner	135	Whitehaven.	Tweedside	Smack	83	Berwick.
Falcon	Brig	223	Workington.	Wharfe	Snow	183	Hull.
Henry	Schooner	112	Bristol.	William	Brig	299	Dumbarton.
Jane Prowse	Barque	298	Chester.	<i>Built in March.</i>			
Lord Sandon	Brig	218	Maryport.	Bransty	Brig	99	Whitehaven.
Laidmans	Barque	259	Chester.	Concord	Schooner	141	Plymouth.
Mary Ann	Schooner	55	Maryport.	Delaval	Snow	199	Seiby.
Oriassa	Barque	323	Dumbarton.	Emerald Isld	Schooner	111	Wick.
Perseverance	Barque	237	Whitehaven.	Fairy Queen	Schooner	59	Hastings.
Saltram	Schooner	128	Plymouth.	Garyone	Schooner	155	Stonehouse.
<i>Built in February.</i>				Harmony	Snow	231	Yarmouth.
VESSELS.	RIG.	TONS.	WHERE BUILT	Hindustan	Ship	500	River Thames.
Adelaide	Schooner	98	Yarmouth.	Isabella	Schooner	123	Leith.
Alice Brooks	Barque	212	Liverpool.	Mary Ann	Schooner	98	Plymouth.
Barbadoes	Brig	219	Cork.	Mary Worrall	Barque	237	Liverpool.
Hebe	Brig	126	Yarmouth.	Patriot King	Barque	338	Whitehaven.
Imogen	Ship	330	Liverpool.	Reform	Schooner	40	Aberrystwyth
Lord Althorp	Snow	253	Sunderland.	Royal Wm.	Snow	293	Gainsbro'.
Robertson	Ship	333	Greenock.	Sarah	Sloop	56	Hull.
Shaunton	Brig	163	Yarmouth.	Triumph	Schooner	132	Cork.
				Wm Rushton	Brig	182	Liverpool.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 215.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN.	PARTICULARS.
193 Alert	Nixon	Liverpool	S. Petersbg.	Scaw	9 May	6744 Crew drown'd
194 Anna Maria	Crombie	London	Quebec	Indian Bay	29 May	6753 Struck an ice berg. Crew sav.
195 Asia	Reed	Newcastle	Lubec	Warnemunde	12 May	6744 Crew sav. Expect to save her.
196 Betsey and Sophia	Fotheringham	London		Desolation I.	Feb.	6752 Mate and 14 crew saved.
197 Celia	Christie	N. S. Wales	London	Off Ushant	18 May	6745 On sunk rock.
198 Concord	England	London	Thisted	Memel	10 May	6744 Strd. Cw. sav.
199 Conveyance	Ewing	Londerry	Sutherland	Off Brora	16 May	6746
200 Dartmouth		Dartmouth		Nash Sand	3 June	6750
201 Douglas	Trail	Havre	Baltic	Near Thisted	May	6744 Strd. Cw. sav.
202 D. of Kent	Thompson	Mauritius	S. Fishery	Providence I.	10 Sept.	6744 Crew saved.
203 Ellen	Hayes	Kingston	Wexford	Coast Wales	18 June	6753 Full of water.
204 Enterprize	Symonnet	Liverpool	Carthage	Off Carliga.	April	6753 Crew saved.
205 Harbinger	Hardie	Leith	Miramichi	Miramichi	17 May	6753 On bar. dtful
206 Harmony	Cunningham	Jamaica	S. Petersbg.	Gothland	7 May	6746
207 Hector	Harrison	Quebec	Bristol	C. Lk. Ot. Shls	4 May	6753 Crew 2 drwd.
208 Harrison and Tomb	Harrison	Quebec	Maryport	Magdalen Is.	6 Dec.	6753 Mate drown'd.
209 Johanna	Laurentzen	Newcastle	Randers	Near Randers	18 May	6746 All lost.
210 Jonas	Hall	Swansea	London	Bristol Chan.	3 June	6748 Foundered.
211 La. Hamilton				Aldabra	11 Dec.	6747 Whal. Cw. sv.
212 Louisa*	Hume	Greenock	S. Johns NB	Off Barington	4 April	6753
213 Mar. Pollock	Drysdale	Miramichi	P. Glasgow	Magdalen Is.	6 Dec.	6753 3 cw. drown'd.
214 M. Lawder		Gambia	S. Leone	Entr. Gambia	16 April	6744 Cw. & prs. sav.
215 Milton	Elder	Newcastle	Chaleur	Scatarie	15 May	6753 All saved.
216 Milton		Ymth. N. S.	S. Andw NB	Banker's Is.	3 April	6748
217 Sloop. Name unknown.				Nash Sand	3 June	6749
218 Sophia		Carmarthen.		Milford	19 May	6744 Crew saved.
219 Surquall		Demerara	Cork	Off Eastport	1 April	6745 Off Cork.
220 Sylph		Oporto	St. John's	Doubtful		6752 Not heard of since 29 Dec.
221 Th. Baker	Baker	Sunderland	S. Petersbg.	Gothland	6 May	6746
222 Trial Packet	Willis	Irvine		Dancon	13 June	6752 By fire.
223 Triton	Cock	Schien	London	Off Yarmth.	4 June	6748
224 Woodhall	Burlington	Newcastle	S. Petersbg.	Near Thisted	May	6744 Strd. Cw. 2 sv.

* This ship will be found in our list of vessels detained by accidents of last month, page 215. She was sold while aground for £53; and part of the cargo saved has already produced £559 to the purchasers.

VESSELS DETAINED BY ACCIDENTS, &C.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Amy		S. And. N. B.	Trinity	Danzic Cove	2 April	6749
Bristol	Forster	Bristol	N. York	Philadelphia	30 Apr.	6748 Run foul of.
Brutus	Nelson	Liverpool	Quebec	Liverpool	13 June	6751 By Sickness. See p. 261.
Catharine Maria	Molan	Leghorn	Amsterdam	Algeiras	11 May	6745 Been aground
Cholmley	Robinson	Shi. lds	S. Petersbg.	Shields	31 May	6748 Been aground
Condor	Athol	Jamaica	London	Port Royal	14 May	6753 In distress.
Ellen	Service	London	S. Leone	Dartmouth	31 May	6748 Wrigd. Cw. drd
Erampus	Lyme	Bangor	Boston	Benumaris	23 May	6745 Run foul of.
Hoppet	Forsen	Wass	Havre	Ramagete	15 June	6752 Been aground
Jane & Thomas	Young	Tarbert	Liverpool	Glasgow	14 June	6752 Been aground
Leavitt	Winney	Gibraltar	Baltimore	Gibraltar	11 May	6745 Been aground
Lord Wellington	Curtin	Waterford	America	Milford	18 June	6753 Loss 6 pasagra
Piet Heia	Turnbull	Rotterdam	Surinam	Scilly	21 May	6745 Run foul of.
Pleiades	Lowell	Matanzas		Cowes	23 May	6745 Run foul of.
Reward	Thompson	Newcastle	Baltic	Borohoffn	7 May	6745 Aground.
Romanoff	Thompson	London	Miramichi	Pictou	16 May	6753 Been aground
Scandinavia	Wickton	Tornvechia	Guernsey	Carthage	26 Apr.	6746 Damaged.
Stirlingshire	Sullivan	Liverpool	Havana	Havana	17 May	6752 On Ginger Kay
Tods	Black	Glasgow	Stettin	Stornaway	6 June	6751 Leaky.
Wilhelmine	Falck	Laurvig		Newport	19 May	6744 Been aground

Calcutta, Jan. 5. — The *Tournesol* was destroyed by fire about 600 leagues east of the Mauritius, in lat. 32. S. The wreck of the vessel has been seen by the *Wellington*, arrived at Madras; and

the *Lotus*, arrived here from Greenock, picked up a mast and a bag of burnt corks, belonging to the unfortunate ship. There is no news whatever of the crew.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
Abercrombie	Robinson	London	Pombay	2 N 29 W	18 April	6745
Abercrombie	Robinson		China	1 S 11 W	20 April	6747
Alfred		Rye	New York	47 N 19 W	14 June	6753
Amelia		London	Pr. Ed. Id.	45 N 40 W	15 April	6749
Arcthusa		London		47 N 17 W	25 April	6747
Argus		Jersey	Halifax	45 N 35 W	1 May	6745
Asia	Bathie	London	Madras	36 S 20 E	11 April	6753
Atalanta		Clyde	Demerara	18 N 43 W	20 April	6744
Auspicious		Plymouth	Miramichi	40 N 45 W	8 May	6747
Bainbridge		Liverpool	New York	41 N 36 W	26 May	6751
Bispham		Liverpool	Naples	40 N 9 W	19 June	6751
Bourbon		Sunderland	Halifax	43 N 31 W	15 May	6746
Boyne		London	Bombay	4 N 21 W	23 May	6753
Branks Moor			Quebec	44 N 56 W	23 May	6753
Buoyant	Ponsonby	Waterford	Tampico	44 N 21 W	6 June	6752
Cambridge		Bristol	New York	39 N 60 W	4 April	6749
Catherine		London	Bengal	12 S 32 W	10 April	6749
Cheviot			Haifax	40 N 45 W	8 May	6747
Coldstream		China	Quebec	13 N 35 W	1 May	6751
Cottingham	Short	London	Quebec	Green Bank	25 April	6753
Diana	Ferguson	Newland.	Fabia	7 N 24 W	10 May	6753
Ellergile		Hull	N. Bruns.	38 N 58 W	16 April	6749
Emulous		London	Montreal	43 N 33 W	30 April	6744
England		Liverpool		43 N 40 W	22 April	6749
England	Bligh		Charleston	5 N 23 W	28 April	6747
Endora		St. Vincent	London	42 N 38 W	10 May	6746
Evans		Portsmouth	Montreal	41 N 40 W	10 April	6749
Ganges	Ardlie	London	Bengal	19 S 30 W	19 Mar.	6753
George Canning		Liverpool		41 N 16 W	22 May	
Georgiana		Mauritius	London	34 S 41 E	8 Mar.	6744
Griffin	Flater	Hayre	Rio Janeiro	4 N 22 W	30 April	6749
H.M.S. Harrier	Crisvassal	Plymouth	India	1° N 22 W	20 April	
Hermitage		Liverpool	Portland	42 N 49 W	19 April	6749
Hero		Bideford	Miramichi	43 N 54 W	19 May	6751
Independance		Belfast	St. John N. B	41 N 52 W	28 April	6749
Janthe		Sunderland	Quebec	45 N 44 W	28 April	6745
John		Ostend	Havana	34 N 51 W	30 April	6747
John Stamp		Lou. Derry.	Philadelph.	38 N 50 W	25 May	6752
John Wells		Liverpool		49 N 22 W	3 May	6744
Jos. Hume		Clyde	New York	39 N 64 W	20 April	6744
Katherine, Stew-						
art Forbes	Anderson	London	N. S. Wales	21 N 24 W	16 April	6752
Liddell	Cooper	Newcastle	Miramichi	39 N 54 W	18 May	6750
Lord Althorp		Sunderland		47 N 26 W	29 April	6744
Mc. Queen	Lindsay	London	China	5 S 25 E	10 Mar.	6753
Margaret		Mauritius		33 S 31 E	8 April	6753
Margery		Newcastle	Quebec	43 N 54 W	19 May	6751
Mary		Dublin	St. John N. B	42 N 62 W	3 June	6753
Mary		Liverpool	New York	40 N 51 W	25 April	6744
Mary		London		43 N 46 W	20 April	6749
Melantho		Bordeaux	Halifax	44 N 43 W	29 May	6752
Nector		Liverpool	Havana	22 N 37 W	7 April	6749
New Holland		Plymouth	Pernambuc	5 N 19 W	28 April	6749
Norna		Lambro'	Manilla	3 N 18 W	19 April	6747
Norval	Friend	London	V. D. Land	2 N 22 W	6 April	6745
Peace		Rio Janeiro	Antwerp	39 N 33 W	3 June	6753
Peppell		Liverpool	Calabar	9 N 16 W	2 May	6752
Perseverance	Mail	London	Peru	2 N 21 W	22 April	6749
Planet		Liverpool	Trieste	40 N 9 W	9 June	6751
Protector		Liverpool	Savana	25 N 55 W	9 May	6751
Quebec Packet		Liverpool	Trinidad	23 N 25 W	20 April	6747
Recovery	Coun	Cowes	St. John N. B	43 N 40 W	26 May	6752
Reliance	Timius	London	China	2 N 20 W	18 April	6749
Richardson		Waterford	Quebec	49 N 22 W	16 April	6749
Richard & Ann		Newcastle	Richbucto	46 N 30 W	1 May	6744
Richmond		Liverpool	Savana	34 N 30 W	28 April	6749
R. Bailey		London	Trieste	38 N 1 E	18 May	6750
Robert Peel		Bristol	New York	52 N 24 W	22 April	6749
Romulus		London	Jamaica	22 N 31 W	21 April	6747
Rosalind		London	Quebec	42 N 52 W	22 May	6752
Rothscar		Leith	Miramichi	44 N 48 W	26 Apr.	6745
Sir H. Douglas		Liverpool	Bombay	Equator	28 Mar.	6745
Stephen		Newcastle	Pictou	42 N 45 W	22 May	6750
Sylvan		Yarmouth		43 N 46 W	20 April	6749
Tarbolton		Newry	Quebec	44 N 48 W	22 May	6751
Themis		Exeter	Miramichi	47 N 21 W	8 April	6749
Triumph	Green	Hull	Bombay	3 S 80 E	13 Feb.	6747
Two Friends		Amsterdm.	Havana	32 N 52 W	29 April	6747
Vesta	Taylor	Hull	Charleston	34 N 47 W	18 April	6749
William		Liverpool		9 N 16 W	2 May	6752

Damaged.

Out 11 days.

Lost t.g. masts

ROYAL NAVAL SCHOOL.

Since our last, a few alterations have taken place in the Council of Administration, owing to some Officers not being able to attend, and the following is a corrected statement of it:—

PATRON.—His most gracious Majesty.

VICE-PATRONS.—His Royal Highness the Duke of Cumberland; His Royal Highness the Duke of Sussex; His Royal Highness the Duke of Cambridge; His Royal Highness the Duke of Gloucester; His Grace the Archbishop of Canterbury; the Right Hon. the Lord Chancellor; the Right Hon. Sir James Robert Graham, Bart. F.R.S. first Lord of the Admiralty; the Right Hon. Lord Gambier, G.C.B. Admiral of the Fleet; the Right Hon. Viscount Exmouth, G.C.B. Vice-Admiral of the United Kingdom; Sir Thomas Foley, G.C.B. Rear-Admiral of the United Kingdom; the Right Hon. Lord De Saumarez, G.C.B. General of His Majesty's Royal Marines.

COUNCIL.

PRESIDENT.—Vice-Admiral Sir Edward Codrington, G.C.B.

VICE-PRESIDENTS.—Vice-Admiral Robert Lambert; Rear-Admiral Sir Jahleel Brenton, Bart. K.C.B.; Captain the Right Hon. Lord Selsey; Major-General Sir James Cockburn, Bart. K.C.H. Inspector-General Royal Marines.

DIRECTORS.—Vice-Admiral the Right Hon. Sir G. Cockburn, G.C.B.; Vice-Admiral the Hon. Sir H. Blackwood, Bart. K.C.B.; Rear-Admiral the Right Hon. Lord Mark R. Kerr; Rear-Admiral the Hon. Sir T. B. Capel, K.C.B.; Captain Sir George Seymour; Captain Thomas Huskisson; Captain Thomas Dick; Captain the Right Hon. Viscount Ingestrie; Captain R. L. Baynes; Captain Jenkin Jones; Commander J. B. Smith; Commander Alexander M'Konochie; Commander Montagu Montagu; Commander George Evans; Lieut. John William Bailey; Lieut. William Gardiner; Lieut. Berkeley Westropp; Lieut. George Davies; Colonel J. B. Savage, R. M.; Lieut. Daniel Robinson, R. M.; Sir Richard Dobson; Dr. Charles Mitchell; Purser John Brenton; Purser John A. Lethbridge.

HONORARY DIRECTORS.—The Right Hon. Lord Prudhoe, *Life Governor*; the Right Hon. Earl Manvers; the Right Hon. Lord Yarborough; the Right Hon. Lord Willoughby de Broke; Admiral the Right Hon. Viscount Exmouth, G.C.B.; Admiral the Right Hon. Lord De Saumarez, G.C.B.; Captain the Right Hon. Lord Selsey; M. P. Lucas, Esq. Alderman; Thomas Bridges, Esq.

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AUDITORS.—Captain E. P. Brenton; Sir F. M. Ommanney; Charles Clementson, Esq.

BANKERS.—Messrs. Hoare & Co. Fleet-street; Messrs. Drummond & Co. Charing-Cross.

SECRETARY.—Lieut. Charles Brand, R. N.

The following donations, besides numerous and liberal annual subscriptions, have also been received since our last, viz:—

Vice-Admiral Sir Edw. Codrington, G.C.B.	£100
Captain George Rennie, R.N.	25 0
John Capel, Esq. M.P.	25 0
Mr. Alderman Winchester	25 0
Mr. Alderman Farebrother	25 0
John Miller, Esq.	25 0
The Company of Lightermen and Watermen	25 0
The Centenary Club	10 10
W. T. Copeland, Esq. M.P.	10 10
N. M. Rothschild, Esq.	10 10

For the information of those who may feel an interest in the permanent establishment of an institution, which is calculated to produce the most beneficial results, in a truly national point of view, we give the following list of gentlemen, who have very kindly offered to receive subscriptions:—

Portsmouth—by Messrs. Grant & Co. Bankers. Devonport—by Thomas Woodman, Esq. Admiralty Office.

Deal—by Commander Williams.

Weymouth—by Captain C. F. Payne.

Falmouth—by Commander F. L. Wynn.

Bath—by Captain Thomas Browne.

Brighton—by Lieutenant R. Saxby, R. M.

Liverpool—by Robert Tronson, Esq. R. N.

Leith—by Lieutenant J. R. Forrest, R. N.

Trowbridge, Wilts—by Lieut. Thomas Linthorne, R. N.

Wells, Somersetshire—by Robert Davies, Esq. Town Clerk.

Gloucester and Cheltenham—by Lieut. J. G. Francillon, R. N.

Shetland—by Lieut. W. H. Brand, R. N.

Dublin—by William Thompson, Esq. R. N. Royal Charlotte Yacht.

For the Coast Guard—by Thomas Willey, Esq. R. N. Custom House.

In London—by all the Navy Agents; the Bankers of the Institution, Messrs. Hoare, Fleet-street, and Messrs. Drummond, Charing Cross; and also by the Secretary, Lieut. Charles Brand, 7, Jermyn-street, Regent-street.

A special general meeting is to take place in London on the 30th instant, for the purpose of authorizing the Council to determine a site whereon to build the school, and also to take such further steps as may be deemed necessary for opening it as early as possible.

We hope next month to be able to give our readers the result of this important meeting; on which depends the success of the institution, and in which, we have little doubt, the wishes of its best friends will soon be realized.

Whales.—The thriving little town of Stormaway, in the island of Lewis, was lately enlivened by a scene of the most striking and animated description. An immense shoal of whales was, early in the morning, chased to the mouth of the harbour by two fishing boats, which had met them in the offing. The circumstance was immediately descried from the shore, and a host of boats, amounting to 30 or 40, and armed with every species of weapons, set off to join the others in pursuit, and engage in combat with these giants of the deep. The chase soon became one of bustle and anxiety on the part both of man and fish. The boats arranged themselves in the form of a crescent, in the fold of which the whales were collected, and where they had to encounter incessant showers of stones, splashing of oars, with frequent gashes from a harpoon or spear, while the din created by the shouts of the boats' crews and the multitude on shore, was such as might well have stunned the bottle-nosed foe, and have at one stupified them into surrender. On more than one occasion, however, the floating phalanx was broken, and it required the greatest activity and tact ere the breach could be repaired and possession of the fugitives regained. The shore was neared by degrees, the boats advancing and retreating by turns, till at length they succeeded in driving the captive monsters on a beach opposite to the town, and within a few yards of it. The gambols of the whales were now highly diverting, and, except when a fish became unmanageable and enraged while the harpoon was fixed, or the noose of a rope pulled tight round its tail, they were not at all dangerous to be approached. In the course of a few hours the capture was complete, the shore was strewed with their dead carcasses, while the sea presented a bloody and troubled aspect, giving evident proofs that it was with no small effort they were subdued and made the property of man. For fear of contagion, the whole fish, amounting to 98, some of them very large, were immediately towed to a spot distant

from the town, where they were on Thursday sold by public roup, the proceeds to be divided among the captors. An annual visit is generally paid by the whales to the Lewis coast, and, besides being profitable when caught, they generally furnish a source of considerable amusement. On the present occasion, the whole inhabitants of the place, male and female, repaired to the beach, opposite to the scene of slaughter, where they evidently were delighted spectators, and occasionally gave assistance. It is to be regretted that a young man, a sailor, received a stroke from the tail of one of the largest fish, and but little hopes are entertained of his recovery. —*Inverness Courier.*

On the 29th of May, the master of an American ship, receiving passengers at Plymouth for New York, was compelled, by Mr. Alderman Hughes, to refund half the passage money of a boy who had run away from his parents. The lad was traced and discovered, and the master of the vessel was summoned by the parents to the Mansion-house. The following decision of the Alderman may be useful to some of our readers:—"We think that due caution has not been used by you in taking money for such an object from such a boy. We think him too young to contract debts and obligations, and consequently it is too much for him to undertake anything so serious as a voyage to a foreign country. You ought to have exercised more caution; and in justice to the public, and also to protect parents from similar anxieties, I must request you will pay half the money back, and I shall make an order to that effect." The amount of passage money was £6.

The following may prove a useful hint to masters of merchant ships. Mr. F. Mitchell, the master of the ship *Forager*, from Jamaica, was charged at the Thames Police Office, last month, with committing a violent assault on John Mason, on the high seas. The complainant had given offence to Mr. Mitchell, and on coming down from aloft received several severe blows from him. It was alleged in mitigation, that the man was no seaman, and was fre-

quently guilty of very lubberly conduct. This, however, was of no avail; and did not justify the master in treating any man so brutally as was proved in the evidence. The case was likely to come before the Admiralty Sessions, but the master prevented it by giving Mason the sum of £3, and paying the expenses of the action. The man might have been a bad character, but the master took the worst means of reclaiming him.

Curious Discovery.—Information has reached Sydney, of the existence of a young man named Matthews, who was captured about three years ago, by the natives of an island called the Malanta, near the New Hebrides, in the South Seas. It may be recollected that about the time mentioned, the Alfred, whaler, was off the island, fishing; and in a dispute between the natives and the crew, the captain and several of the hands were murdered, and a mate (the person now discovered) was carried off a prisoner, and never since heard of. The manner in which this unfortunate young man has at last made himself known was by cutting his name, the particulars of his capture, and his present situation (which he represents as miserable) on a piece of bamboo, and then giving it to the natives to trade with. Not understanding the characters, and supposing the bamboo to be an original piece of tattoo workmanship, they bartered it away amongst other things to one of our colonial whaling captains (Capt. Harwood, of the Hashmy), who retains it in his possession. We are informed that a humane attempt will be made to purchase this unhappy fellow from the savages. Since the above was written, the schooner *New Zealander*, has arrived in Sydney, from Malanta, and other places, and brings more particulars of the fate of Matthews. Capt. Hedges has in his possession a letter, and a carved cocoa-nut, which were brought on board the *New Zealander* by a native, from their prisoner, the subject of this narrative. The following is a literal copy of the letter:—“Sir, be kind to the natives, as my life is in their hands. I am alive, after a long illness from the wounds I received. Write to me the particulars, if a ship killed any of the natives on the other

side of the island. They say our ship killed three men. They keep me close, and will not let me come near the ship. Make him a present of something showy; his name is Bolowwa. If you will send me a shirt and a pair of trowsers, I will be much obliged to you; I am in a state of nature. A ship may get a good supply on this island by making friends with them. Give the men something to eat, as it is great friendship with them. Write to me the particulars what ships are cruising off this island. I live on the north side of the island. Be careful of the natives—they are forming a plan to take a ship. Do not come on shore without fire-arms. They are cannibals. If I can once get a note from you, I can form a plan to get away. I am your humble servant, JOHN MATTHEWS.”—*Liverpool Chron.*

Steam-boat Accidents in America.—The *Wheeling Times* of May 2d, says: “The *Dolphin*, on her passage from Louisville to Pittsburg, with all her cargo, was destroyed by fire, on Friday, the 28th of April. The fire commenced in the ladies’ cabin, and burst out with such violence, that before she could be run on shore, all her upper works were on fire. There were but few passengers, and no lives were lost.”

The *Cincinnati* (American Paper) states, that the steam-boat *Talisman* took fire on the night of the 22d of April, while lying at the landing-place, and was entirely destroyed. The crew and passengers narrowly escaped with their lives. One of the passengers broke his leg, and a lady, named Pollock, jumped overboard.

The *Boston Daily Advertiser* states, that the *King Philip* steamer, with 90 passengers, from Newport for Providence, was set on fire by the deck on which the boiler stood giving way, and the fire falling into the hold. The Benjamin Franklin being in sight, gave immediate assistance, and the fire was got under without loss of life. On the 23d of April, on the *Mississippi*, near Negroville, the steam-boat *Paul Clifford* was run into by the steamer *Opelousas*, and her upper works carried away. Fortunately, no person on board either boat was materially injured.—*Belfast Chronicle*, 6th June.

M. ARAGO, ON COMETS.

(Continued from page 165.)

HERE the moon will serve as a point of comparison.

The moon causes the tides of the ocean: mathematically speaking, the comet of 1811, ought to have produced analogous tides, but, as no one observed any such tides, we must admit that they did not amount to an appreciable quantity. But the height of a tide is proportioned to the attractive power. We know that the lunar tides are very great, and that the cometary tides (if any) are insensible; hence, it is clear that the cometary action on the earth bears no proportion to that of the moon; and as to any calorific effects of the great comet of 1811, the most delicate instruments have not shewn their existence. Can, then, the wine-growers expect any results from the comet of 1832?

On the physical construction of Comets—that is, their Nebulosity, Nucleus, and Tail.

I have before spoken of the nebulosity, or hair, of the nucleus, and of the tail of a comet. I will now detail all that telescopes have enabled us to discover of their parts.

Many comets have no visible tail, many have been seen without any visible nucleus; but in no case have comets been seen without that nebulosity or foggyness, which the ancients called their hair.

On the Nebulosity.—Amongst the comets having no visible nucleus, and which appeared to be mere globular masses of vapours, slightly condensed towards the centre, I will name only the comets of 1795, 1797, of 1798, and the little comet of 1804, whose nebulosity was about two thousand leagues in diameter. Seneca tells us that stars may be seen through comets, and Herschel saw a star of the sixth magnitude through the midst of a comet without a nucleus, in 1795; and Struve, on the 28th of November, 1828, saw clearly a star of the eleventh

magnitude, through the central part of the "comet of the short period."

When there is a nucleus in the centre of a comet, it seldom happens that the nebulosity extends to this nucleus, with a gradually increasing intensity. On the contrary, the parts of the nebulosity nearest the nucleus are feebly illuminated, and appear to be very diaphanous and rare. At some distance from the centre their light increases suddenly, so as to present a luminous ring round the centre. Sometimes two or three of these concentric rings have been seen, separated by dark lines from each other; but we can easily suppose that this apparent ring is, in fact, a spherical envelope, embracing the centre of the comet. In the comet of 1811, the luminous envelope was not less than ten thousand leagues thick, and its interior surface was twelve thousand leagues from the centre of the nucleus.

When the comet has a tail, the luminous ring is closed, or complete only on the side next the sun, and forms only a semicircle. The two ends or horns of this semicircle, are the points of departure from which emanates the tail.

Of the Nucleus.—Comets often have nuclei resembling planets both in shape and brilliancy. In general they are only small, but not always so. The following is a table of the diameters of the nuclei of several comets:—

Comet of .	1798,	11 leagues.
—	. 1799,	154 ditto.
—	of Dec. 1805,	12 ditto. ;
—	. 1807,	222 ditto.
2d Comet of	1811,	1,089 ditto.

Some astronomers contend that cometary nuclei, even those which by their brightness most resemble planets, are completely diaphanous—that comets, in short, are a mere assemblage of vapours. They found this opinion on observations which I do not think conclusive. The question is important: its solution will decide, to a certain

degree, the part we may attribute to comets in the revolutions of the physical world.

All comets in their courses traverse successively different constellations. The region in which they move is much nearer to us than the fixed stars; therefore, whenever the nucleus of a comet passes between us and a fixed star, we are better able to judge of its composition than in any other position; unfortunately, these exact conjunctions are very unfrequent, but here are some examples:—

The 23d of October, 1774, Montaigne saw at Limoges a star of the 6th magnitude through the nucleus of a little comet. This would prove beyond doubt that the comet of 1774 had no solid or opaque part, if the star had been seen through the middle of the nucleus; but Montaigne does not say that this was the case; and, in truth, the want of power in his telescope did not enable him to be thus explicit.

On the 1st of April, 1796, Olbers saw a star of the 6th or 7th magnitude, which lost none of its light, although it was covered by a comet; but he tells us that the star was a little to the north of the centre of the nebulosity, and if the nucleus disappeared for a short time, it was only because of the stronger light of the fixed star. Other cases, which produced no real occultation, might be cited, and to which the same doubts would apply.

On the other hand, if I were to assert that there does exist a solid and opaque body in the centre of the luminous nuclei of comets, the annals of astronomy would furnish me with some plausible arguments in support of that opinion. I might cite Messier, who, when he perceived for the first time the little comet of 1774, discovered but one star near the nucleus, but, some hours after, a second star was seen near the first, and we can hardly help thinking with Messier that this second star might have been at first hidden behind the opaque or solid part of the comet. I might add, that the comet of “the short period” on the 28th No-

vember, 1828, as observed by M. Wartmann at Geneva, completely eclipsed a star of the 8th magnitude; and here I will remark, that a positive fact has always an infinite advantage over a negative one, and that the actual eclipse of a star by a comet conveys a proof of a fact, whereas the non-observation of such eclipse proves only that it perhaps did not take place from the probable case that the solid or opaque nucleus did not pass exactly over the star. However, as I am not a partisan of any system, I will confess that M. Wartmann used too feeble a telescope; and farther, that the observation of Messier would have been more satisfactory if the eclipsed star had been seen before its immersion; but the truth is, we have not data on which to found a general principle as to the physical constitution of very small comets. Some comets have no apparent nucleus, but are equally bright in all parts, and these are no more than aggregations of gaseous matter; a farther degree of concentration may cause in the centre of the nebulosity a nucleus remarkable for its brightness, but which being still liquid, would be diaphanous, and at a more advanced period this liquid, having cooled, will be enveloped in a solid crust, and from that moment the nucleus will no longer be transparent. Then, indeed, the eclipse of a star by a comet would be as real as those occultations of stars which so frequently occur in regard to the moon and the planets.

Nothing, then, proves that no comets exist of this third sort,—that is, with solid nuclei; on the contrary, the great brilliancy of some of them fully justify a belief in the solidity of their nuclei. But those who wish to establish some general canon, for the nature and composition of all comets, have only to study, as I have done, the archives of astronomy for the last 40 years, to be convinced of the impossibility of finding it.

Without citing all the wonderful stories which have been told of comets, whose light equalled that of the sun, and eclipsed that of the moon, I will

here give some facts which are incontestable.

Forty-three years before the Christian æra appeared "a hairy star," which was seen with the naked eye in the day time. This was the comet which the Romans believed had received the soul of Cæsar, who was assassinated just before its appearance.

In the year 1402 were two remarkable comets. The first was so brilliant that the light of the sun, at the end of March, did not hinder people's seeing at midday both its nucleus and its tail, which last, to use the language of the day, was full "two fathoms" long. The second comet appeared in the month of June, and was visible long before the setting of the sun.

Cardan tells us how every body's curiosity was roused at Milan, by the appearance of a star in 1552, which was visible in open daylight. The fine comet of 1577 was discovered on the 13th of November, by Tycho Brahe, before sunset; but I hasten to a more modern comet, of which we have in an especial treatise detailed observations.

The 1st of February the comet of 1744 was, according to Chezeaux, more resplendent than Sirius, which is the brightest fixed star of the heavens. On the 18th of February this comet equalled in brightness the planet Jupiter; some days after it nearly equalled Venus in splendour. In the beginning of March this comet was near the sun, and on the 1st many persons saw it at midday without glasses.

To sum up. We may conclude, from what we have seen, that there are comets without nuclei, comets whose nuclei are perhaps diaphanous, and comets more brilliant than planets, whose nuclei are probably solid and opaque.

Of the Tail.—The long luminous train by which comets are often accompanied has been called at all times "the tail." Pierre Apian ascertained that the comet of 1531 carried its tail in every part of its course, so as to have it always in a prolongation of the line which joined the sun and the nucleus; but this principle has been adopted too

generally. It is true that for the most part the tail is placed behind the comet, so as to stream out in a direction opposed to the sun; but the line which joins those two luminaries hardly ever corresponds with the axis of the tail. Sometimes the want of coincidence of these two lines is very great; indeed, in some cases, the tail stands out at right angles from the line of conjunction. In fact, it has been ascertained that the tail has constantly an inclination towards the region which the comet has left, as if, in its motion through a gaseous medium, the matter of which the tail was formed had been more powerfully acted upon, or resisted, than was experienced by the nucleus.

The tails become much larger, that is, wider, as they lengthen out from the comet. In the middle of them is seen a dark band which divides them into two distinct and often equal parts. Ancient observers considered this band as the shadow of the body of the comet. This explanation cannot be applied to the tails which point towards the sun; perhaps we shall suit our hypothesis to general appearances if we suppose the tail to be a hollow cone, which from well-known physical causes might be supposed to present to us two exterior lines of light, separated by a space comparatively dark.

It is not uncommon to see in comets several separate tails. The comet of 1744, on the 7th and 8th of March, had as many as six, each about 4 degrees wide, and 80 degrees to 40 degrees long. Their edges were tolerably light, the lines down their axes gave but a feeble light, and the space between these tails was as dark as the rest of the heavens.

The tails of comets sometimes embrace immense spaces.

The following are some of the measurements:—

Tail of comet of 1811, length 23 degrees.
Ditto ditto 1689, ditto 68 degrees.
and bent like a Turkish sabre, as the contemporaries say.

Tail of comet of 1680, length 90 degrees.
Ditto ditto 1769, ditto 97 degrees.

Thus these comets of 1680 and 1769

could reach the horizon and set, while part of their tails were still on the zenith.

I will give here some measurements of comets' tails in leagues (each league being about $2\frac{1}{2}$ English miles.)

Tail of the comet of 1680, more than 41,000,000 of leagues.

Tail of the comet of 1769, more than 16,000,000 of leagues.

The several tails of the comet of 1744, 3,000,000 of leagues.

I ought here, perhaps, to dilate on the nature of cometary light, on the causes which produce comets' tails, which modify their shapes, &c. ; but I will freely confess, that in the present state of science, I could offer on these subjects only gratuitous hypotheses and unsupported theories.

It is true, cometary science has made great progress within the last century and a half, but the physical composition of these bodies is still wrapped in great obscurity.

Are comets luminous themselves? or, like plants, do they only reflect the sun's rays?

This, indeed, is a main question not yet answered; but as soon as a comet shall appear, showing to us an evident phase, all doubts will cease. The phases said to have been seen by Cassini and Dunn are not substantiated; and in regard to the crescent said to be seen by M. Cacciatore in the comet of 1819 at Palermo, I will only say that the line of the horns, instead of being, as it would have been in a real phase, perpendicular to the line joining the sun and the comet, was, on the contrary, parallel to it. On the other hand, the want of phases in the nucleus of a comet surrounded by a thick atmosphere, which might distribute light all over the nucleus, brings us to no certain conclusion; but recent physical discoveries promise us great results, for it has been ascertained that reflected light, when impinging on the eye at certain angles, has some peculiar properties which distinguish it from direct (or primitive) light. In fact, some traces of these properties have been detected by astronomers at Paris in the

comet of 1819, but, after all, nothing certain has been arrived at; and, in fact, were a body ascertained to be itself luminous, it does not on that account lose the power of still reflecting the light of other bodies.

To be continued.]

The Lobster.—Amongst the numerous examples given by Dr. Paley, of the wonderful manner in which nature contrives to overcome difficulties, which would at first appear insurmountable, there is perhaps none more striking than the mode in which the lobster is released from his case when the increasing size of his body requires more room. In most animals the skin grows with their growth. In some animals, instead of a soft skin, there is a shell, which admits, by its form, of gradual enlargement. Thus the shell of the tortoise, which consists of several pieces, is gradually enlarged at the joinings of those pieces which are called "sutures." Shells with two sides, like those of the muscle, grow bigger by addition at the edge. Spiral shells, as those of the snail, receive this addition at their mouth. The simplicity of their form admits of this: but the lobster's shell being applied to the limbs of his body, as well as to the body itself, does not admit of either of the modes of enlargement which is observed in other shells. It is so hard that it cannot expand or stretch, and it is so complicated in its form that it does not admit of being enlarged by adding to its edge? How, then, was the growth of the lobster to be provided for? We have seen that room could not be made for him in his old shell: was he then to be annually fitted with a new one? If so, another difficulty arises: how was he to get out of his present confinement? How was he to open his hard coat, or draw his legs out of his boots, which are become too tight for him? The works of the Deity are known by expedients, and the provisions of his power extend to the most desperate cases. The case of the lobster is thus provided for: At certain seasons his shell grows soft. The animal swells his body; the seams open, and the claws burst at the joints. When the shell is thus become loose upon the body, the animal makes a second effort, and by a trembling motion, a sort of

apasm, casts off his case. In this state of nakedness the poor defenceless fish retires to a hole in the rocks. The released body makes a sudden growth. In about eight and forty hours a fresh concretion of humour takes place all

over the surface of his body; it quickly hardens; and thus a new shell is formed, fitted in every part to the increased size of the body and limbs of the animal. This change takes place every year.—*Hull Paper*, 3rd June, 1832.

PROMOTIONS AND APPOINTMENTS.

From the Naval Papers.

PROMOTIONS.—Lieut. Hon. G. Kinnaird.
APPOINTMENTS.—Captain Bullen, C. B. Superintendent of Chatham Dock-yard, is appointed Captain Superintendent of His Majesty's Dock-yard at Milford.—Capt. Sir J. A. Gordon, K. C. B. Commissioner of the Victualling Establishment, at Plymouth, is appointed Captain Superintendent of Chatham Dock-yard, *vice* Bullen.—Capt. H. Garrett, Commissioner of the Royal Clarence Victualling-yard and the Royal Hospital at Haslar, is appointed "Captain Superintendent" of the same.—Capt. C. B. H. Ross, C. B. Resident Commissioner of Plymouth Dock-yard, is appointed Captain Superintendent of that Dock-yard and the Victualling Department.—James Meek, Esq. one of the Commissioners of Victualling, is appointed Comptroller in the same Department under the Admiralty.—Commissioner Briggs is to be Rear-Admiral Superintendent at Malta.

ÆOLUS—Mr. White, *Carpenter*.
AFRICAN, St. V.—D. C. Alison, *Ass. Surg.*
AMAZON—G. Robinson, *Boatswain*.
BRITANNIA—D. Deas, *Ass. Surg.*
CASTOR—L. T. Cunningham, *Ass. Surg.*
CRACKER—J. Morgan, *Lieut. Com.*; E. Williams, *2d Master*; W. C. Lamb, *Ass. Surg.*; C. Dealy, *Clerk*; T. A. B. Spratt, *Mid.*; I. S. Davison, *Mid.*
DARTMOUTH—Mr. Sharpe, *Boatswain*.
DEE, St. V.—R. Oliver, (*b*) *Com.*; J. Tucker, *Master*; A. Neill, *Surg.*
DESIRE, *Hoop. Ship*—D. Wright, *Surg.*; W. B. Marshall, *Ass. Surg.*
DISPATCH—G. Daniell, *Com.*; W. Jennis, *Master*; J. E. Key, *Purs.*; D. Wilkes, *Ass. Surg.*
DONEGAL—R. Morgan, *Flag Lieut.*; F. W. Paul, *Mast. Ass.*; J. W. Drummond, *Mid.*; J. M'Dougal, *Mid.*

DUBLIN—T. Jeffreys, *2d Master*.
EXCELLENT—W. R. Payne, *Mate*; J. Fleeming, R. S. Hewlett, and A. Bental, *Mid.*; C. Stark, *Sch. Master*.
ETHALION—Mr. Peake, *Carpenter*.
FAVORITE—T. R. Sullivan, *Lieut.*; R. Stevenson, *Ass. Surg.*
HORATIO—Mr. Hancock, *Boatswain*.
LIGHTNING—T. J. Forbes, *Lieut.*
MASTIFF—D. Mitchell, *Ass. Surg.*; Mr. Laws, *Clerk*.
NIMROD—G. Ramsay, *Lieut.*
ORESTES—K. Corbett, *Lieut.*
PROMETHEUS—J. Taylor, *Gunner*.
SAN JOSEPH—R. Handyside, *Ass. Surg.*
SAPPHIRE—J. S. Pritchard, *2d Master*.
SCYLLA—J. C. Bulman, *Purser*.
SPARTIATE—J. Maxwell, *Boatswain*.
SYLVIA—W. A. B. Lee, *Mid.*; W. Patison, *Ass. Surg.*
THUNDER, Bomb—Mr. Holden, *Boatsw.*
THUNDERER—Mr. Hall, *Boatswain*.
TRIBUNE—G. King, *Boatswain*.
VICTORY—T. Brennan, J. Munro, J. Crichton, and J. M. Valence, *Sup. Ass. Surgeons*.
WARSPITE—C. J. F. Newton, *Lieut.*
YORK, Convict Ship—J. M'Ternan, *Surg.*
PARMELIA, Convict Ship—R. Allen, *Surg.*
FANNY, Convict Ship—F. Logan, *Surg.*
COAST GUARD SERVICE.

Com. W. Usherwood, Com. R. S. Triscott, Com. — Jackson, Lieut. J. M. Pentland, Grimsby.

ROYAL MARINES.

CHATHAM DIV.—R. C. Steele, *Capt.*; H. Arnold, *2d Lieut.*; A. A. R. Woolridge, *Barr. Master*.

PORTSMOUTH DIV.—H. G. Morish, *1st Lieut.*; J. T. Brown, *Adj.*; R. L. Tinklar, *Quarter Master*.

ADMIRALTY ORDERS.

ADMIRALTY ORDERS, &c.

"Admiralty, 6th June, 1822. (Circular.)"

"All letters and public documents of whatsoever description, relating to the Naval service, heretofore addressed to the Commissioners of the Navy and Victualling, or to their Secretaries, whether from Officers of the Navy in or out of commission, or in any of the Civil or Marine departments of the Navy, are to be addressed, from and after the receipt of this Order, to the Secretary of the Admiralty.

"It is further directed, that all accounts relating to the receipt and expenditure of stores, provisions, and medicines; of demands for stores, provisions, and medicines; all accounts of cash, applications for imprests, or money, all periodical returns, and, generally, all papers and documents heretofore sent to

the Navy and Victualling Offices, shall have printed on the lower corner of the cover, one of the following words, as the case may be, "Surveyor," "Accountant," "Storekeeper," "Comptroller Victualling," "Physician."

"By order of their Lordships.
 "JOHN BARROW."

"To all whom it may concern."

No. 78.—"Orders by the Commissioners for executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, &c.

"ALLOWANCE OF POWDER FOR EXERCISE.

"Whereas, We have had under our consideration the scale of Powder and Shot allowed by art. 10, sec. 4, chap. 6, of the Naval Instructions, to be used on board His Majesty's ships for exercise; and also our circular Memorandum, No. 62, of the 22d July last,

on the same subject, We hereby desire and direct, that the allowance of Powder for exercise shall in future be issued according to the following scale, viz.

*Single shotted
for each Gun,*

In the first six months after being commissioned - - - - 12 rounds.
In the second six months after being commissioned - - - 9 ditto.
In every other six months - - 7 ditto.
The whole, or any part of this quantity, to be fired without shot, should the situation of the ship, or other circumstances, require it.

"The cartridges used in this exercise are never to be filled with more than the reduced charge of powder.

"In addition to the above allowance for exercise, all ships are to be allowed for each of their two lightest guns on the fore-castle, or for each of their two bow guns, where there is no fore-castle, the following quantities to be used for "*short practice*," that is, for exercising at a target hung from the fore-yard-arm or fore-rigging, viz.

1st and 2d rates—85 rounds.
3d rates—70 "
4th rates—60 "
5th rates—30 "
All other vessels—10 "

And for this practice the scaling allowance of powder only is to be used.

"During the first six months a ship is in commission, four rounds of blank-cartridges for each gun, in addition to the above quantities, filled with the allowance for scaling, may also be expended in exercise.

"The powder and shot allowed for exercise, are not to be fired away at one or two exercises, but the expenditure is to be divided during the six months into such proportions as may keep the men in constant practice, not exceeding two rounds and a half per week, unless by permission, in writing, of the senior Officer.

"Given under our hands this 1st day of June, 1832,

"S. J. BROOKE PEHELL,
"G. BARRINGTON."

"To all Commanders-in-chief, Captains, and Commanding Officers of His Majesty's ships and vessels.

"By command of their Lordships,
"JOHN BARROW."

"ALLOWANCE TO SCHOOLMASTERS.

"His Majesty has been graciously pleased, by his Order in Council of the 30th of last month, to direct, with a view to the encouragement of such persons as may be disposed to undertake the duty of Schoolmaster on board His Majesty's ships, that the sum of five pounds shall be deducted from the pay of each Midshipman, volunteer of the 1st class, or other quarter-deck petty officer, who may receive instruction from the Schoolmaster, to be paid to that officer in the same manner, and under the same regulations, as are at present observed in regard to Chaplains who perform the additional duty of Schoolmaster; We hereby desire and direct, that the proper notation thereof be made in the ship's books, to insure the deduction of the sum above-mentioned from the pay of the midshipmen,

volunteers of the 1st class, and other quarter-deck petty officers, who may receive instruction from the Schoolmaster, and the payment thereof to that officer by the Navy Board.

"Given under our hands the 6th day of June, 1832.

"S. J. BROOKE PEHELL,
"G. BARRINGTON."

"To all Captains, Commanders, and Commanding Officers of His Majesty's ships and vessels.

"By command of their Lordships,
"GEORGE ELLIOT."

"Admiralty, 12th June, 1832.

"MARINE SERVANTS TO OFFICERS.

"As some doubts appear to exist of the propriety of allowing private Marines to do the duty of Officers' servants on board His Majesty's ships, my Lords Commissioners of the Admiralty are pleased to direct that, in addition to the servants of the Officers of the Royal Marines, this indulgence may be carried to the extent, in each rate, of the following numbers, viz.:

1st Rates 5 Men.
2d Rates 4 "
3d and 4th Rates 3 "
5th Rates, and Sloops, commanded
by Commanders 2

provided the men do it with their own free will, and that they only attend on the Captain or Officers of the Ward or Gun-room, (according to the rate of the ship); but their so serving is not in any way to interfere with the necessary attendance at drill, inspection, or exercise of the great guns at quarters.

"By command of their Lordships,

"JOHN BARROW.

"To all Captains, Commanders, and Commanding Officers of His Majesty's Ships and Vessels."

"THE COMMANDER-IN-CHIEF, OR THE SENIOR CAPTAIN, OCCASIONALLY TO MUSTER THE CREWS OF HIS MAJESTY'S SHIPS.

"Whereas we have thought fit to discontinue the present mode of mustering the Crews of His Majesty's ships and vessels, by the Master Attendant or his Assistants, and to substitute another mode of mustering in lieu thereof; We do hereby direct, that, from the 1st of July next, on the home stations, and as soon as it may be practicable, on foreign stations, after the new muster-book shall be brought into use, the Commander-in-chief at the respective ports, or one of the senior Captains (the latter being accompanied either by his Purser or an experienced clerk) shall occasionally go on board His Majesty's ships and vessels (except such as may not be in harbour, and under the command of a Flag Officer present), and shall muster their crews; see that their muster-books are perfectly regular and complete; and that all entries and discharges on their pages are strictly correct: that, immediately after each muster, a statement, in the form prepared, shall be filled up (which statement and the ship's muster-table must always agree) of the actual numbers borne, mustered, and checked; and the said statement being previously entered in the abstract provided for it, to be kept by the Ad-

miral, or by any other Officer in command on the home stations, shall be transmitted by him, weekly, to our Secretary.

"A more particular muster and inspection also is to be made in every ship and vessel, as above directed, especially in those newly fitted out (and which shall, on no account, be omitted in the latter), a few days before they proceed to sea; and the muster-books, and all authorities for entries and discharges, are then to be very carefully examined; and the additional certificate on the statement above-mentioned is to be signed. Similar musters are to be made by all Commanders-in-chief, of the crews of His Majesty's ships and vessels under their orders, or by a senior Officer, in the absence of the Commander-in-chief, who shall transmit their statements to this Office, by every proper opportunity; the latter keeping a perfect abstract of all his musters; and the senior officer furnishing him, from time to time, with a complete abstract of the statements he may have forwarded, in the form provided for the purpose; and the attention of all Flag and senior Officers is directed to this important service, which they are hereby required to perform with the strictest care and correctness.

"Given under our hands this 13th day of June, 1832.

"T. M. HARDY,
G. BARRINGTON.

"To all Commanders-in-chief, Flag Officers, Captains, and Commanding Officers, of His Majesty's Ships and Vessels.

"By command of their Lordships,
"JOHN BARROW."

"MUSTER-BOOKS AND VICTUALLING-BOOKS TO BE TRANSMITTED QUARTERLY TO THE ADMIRALTY.

"The 'Muster-book' of His Majesty's ships and vessels being, in future, to be made up and transmitted quarterly, on the 31st of March, 30th June, 30th September, and 31st of December in each year, instead of every two months, as at present; and the said muster-book being also to combine the particulars of the 'Purser's Victualling-book,' which is in consequence to be abolished; it is hereby

directed, that the new form of the muster-book be brought into general use from the 1st of July next: but in cases where it may not be received by that day, it is to be brought into use on the 1st day of the quarter succeeding that in which it has been received.

"We further direct that the Purser's of His Majesty's ships and vessels do continue to make out their victualling-books according to the present form to the day on which the new form of muster-book is brought into use, and transmit them to this office for examination with the first quarterly muster-book: and the instructions prepared upon the above-mentioned new form for the muster-book are to be most carefully and correctly complied with.

"Given under our hands the 14th day of June, 1832.

"T. M. HARDY,
G. BARRINGTON.

"To all Captains, Commanders, Commanding Officers and Purser's of His Majesty's Ships and Vessels.

"By command of their Lordships,
"JOHN BARROW."

MEM.

A mistake having for some time existed in the official Navy List, by which Gunners, Boatswains, and Carpenters, are required to wear cocked hats, as uniform; an order has been issued, directing, by His Majesty's regulations of the 18th December, 1827, that they are to wear plain round hats, and that no other hats are allowed to be worn as uniform by them.

The Field Officers of Marines are directed by His Majesty's order, in future to wear waist sword-belts, (instead of body belts), and a brass scabbard to their swords.

The Lords Commissioners of the Admiralty have directed, in a recent order, that the collars of the coats of Masters, Surgeons, Purser's, and other warrant Officers, be cut in a diagonal manner, similar to the annexed sketch, instead of being cut at right angles.



FOREIGN MAILS.

FOR BOMBAY—Lady Nugent, Percival, from the West India Docks, 1st July.

Duke of Buccleugh, Henning, from the East India Dock, 3d July.

CALCUTTA—Cæsar, Thompson, from the East India Dock, 6th July.

MADRAS—Cæsar, Thompson, from the East India Dock, 6th July.

Births.

On Tuesday, the 15th of May, at the Royal Naval Hospital, Plymouth, the lady of Commissioner Sir J. A. Gordon, K.C.B. of a daughter.

On Sunday, the 13th of May, at Stone Pitts, Isle of Wight, the lady of Captain Brigstock, R.N. of a son.

On Tuesday, the 15th of May, at Cold Harbour, Gosport, the wife of Lieut. George A. Devereux, of a daughter.

At Stonehouse, on Monday, the 14th of May, the lady of Lieut. and Adjutant Brutton, Royal Marines, of a daughter.

At Cherry Bank, Perth, on the 9th of May, the lady of A. Fisher, Esq. Surgeon, R. M. of a daughter.

The lady of Lieut. Thomas, R. M. of His Majesty's Ship San Josef, of a son.

On the 24th of May, at Ardpatriek, Argyleshire, the lady of Capt. Colin Campbell (s), Royal Navy, of a son.

At Linfield, Limerick, the lady of Capt. H. O'Grady, R.N. of a son.

At Navy-row, Stoke, the lady of Mr. T. Archer, Purser, R.N. of a daughter.

On the 17th June, at Porchester, the lady of J. Cooke, Esq. Royal Marines, of a daughter.

On the 8th June, at Prinstead, near Emsworth, the lady of Lieut. H. Walker, Commander of His Majesty's steam-vessel Alban, of a son.

On Sunday, the 17th June, at Porchester, the lady of Jervis Cooke, Esq. Royal Marines, of a daughter.

On the 14th June, in Wales, the lady of Lieut. C. Caldecot, R. N. of a daughter, still born.

On Sunday, 17th June, in Devonshire-place, Kent-road, the lady of John Taaffe, Esq. late master shipwright of Bermuda, of a son and heir.

MARRIAGES.

On Sunday, the 13th of May, at Forton chapel, by the Rev. T. Phillips, Mr. Wm. Tarring, of His Majesty's Dock-yard, to Miss H. Barber, of Milford, Surrey.

On the 20th of May, at Chatham, John Huncorn, Esq., of His Majesty's Dock-yard at that place, to Mary Anne, widow of the late Admiral Sweny.

On the 29th of May at Walmer, by the Rev. Ralph Backhouse, Lieut. S. Ross Watts, R. N., to Mary Anne, youngest daughter of the late Rev. Charles Philpot, rector of Ripple, Kent.

At Fareham church, on Thursday the 31st of May, Lieut. Chapman, R. N., of Wickham, to Miss P. Chapman, of the former place.

Vincent Williams, Esq., Master, R. N., to Miss Elizabeth Stephens, of Stonehouse.

On Tuesday the 5th of June, at Plymouth, John Andrew Charles O'Connell Pascoe, Esq., R. N., of Home Park Buildings, Stoke, to Julia, second daughter of Lieut. Wm. Styles, R. N., of the same place.

On the 5th of June, at Marylebone church, Lieutenant Charles John Bosanquet, R. N., to Charlotte Eliza, youngest daughter of the late Jacob Bosanquet, Esq., of Boxbournebury, Herts.

On Tuesday, the 29th of May, at Ulverston, Mr. James Meech Garland, master mariner, of this port, to Miss Margaret Sheppard.

At Esher, Captain F. Chamier, R. N., to Elizabeth, daughter of the late John Soane, Esq.

On the 17th of May, at Lerwick, Shetland, Lieut. William Henry Brand, R. N., to Christina Cecilia, second daughter of James Greig, Esq., Procurator Fiscal of Shetland.

On the 21st June, at Newchurch, Isle of Wight, Lieut. Wm. Breedon, R. N. son of the late Rev. J. S. Breedon, D. D. of Pangbourne, Berks, to Waller, eldest daughter of the late John Kearney, Esq. of the county of Kilkenny, Ireland.

DEATHS.

On Monday, the 11th of June, at Exmouth, of a decline, Mr. James Jopp, Midshipman, R. N. eldest son of Mr. Jopp, of Exmouth.

Rear-Admiral S. Sutton, of Ditchingham Lodge, aged 72.

On Wednesday, the 6th of June, at Lincoln, of decline, Captain John Husband, Royal Marines.

On Wednesday morning, June the 13th, at the Royal Naval Hospital, Plymouth, John Hillman Hornbrook, aged 28, late Midshipman of H. M. S. Britannia, second son of Lieut. L. Hornbrook, of the Royal Marines.

* On the 7th of June, at Falmouth, aged 78, Mr. Appleton, R. N.

At Hartford, near Doncaster, Retired Commander John Platt, R. N. aged 69.

Lately, Lieut. Richard Cole, R. N.

Lately, Commander Joseph Coxwell, R. N. At West Itchenor, aged 39, Mr. Richard Caledon, Mariner.

Lately, in South America, Lieut. H. P. Delafons, of His Majesty's Sloop Lightning.

On Sunday, the 20th of May, at Brighton, deeply and deservedly regretted, Capt. George Burdett, R. N. of Longtown House, county of Kildare, and Glennagary, county of Dublin, and late in command of His Majesty's Ship Ganges.

Last week, in Providence-place, Devonport, Mr. Thomas Sampson, Gunner, R. N. aged 78.

On Monday, the 21st of May, at the residence of his son-in-law, — Sullivan, Esq. of His Majesty's Dock-yard, Portsmouth, John Webb, Esq. Purser, R. N. aged 85.

Lately, at Edinburgh, Captain F. Blair, R. N.

On the 30th of May, in Coleman-street, Lieut. Richard Cole, R. N.

At Launceston, after a very protracted and tedious illness, Peter Hugh Davies, Esq. one of the oldest Pursers in His Majesty's Navy, aged 75; he has left a widow and nine children to deplore his loss.

Lately, at Constantinople, George Wolfe, of Gosport, seaman of H. M. S. Actæon. His remains were interred at Teressa, attended by some of the Officers and seamen of the ship. The ship's company have since, out of respect to the deceased, erected a marble tomb, with a suitable inscription, to his memory.

On the 29th of May at Struel Lodge, Rosneath, Captain Alexander Campbell, R. N. younger, of Ormidale.

On Tuesday, the 29th of May, at Bath, aged 58, Peter Lely, Esq. late Captain in H. M. R. M. Forces.

Rear-Admiral Samuel Sutton, aged 72, of Ditchingham Lodge, Deputy Lieutenant and Magistrate for the counties of Norfolk and Suffolk.

In Richmond Walk, Devonport, after a short illness, Mr. J. Wyse, Superannuated Warrant Officer of His Majesty's Navy, aged 64, much respected.

At Gosport, at the residence of his father, (Com. T. L. Robins, (a) R. N.) on Sunday, 17th June, aged 30, Mr. J. W. Robins, late of H. M. S. Hyperion, highly respected by all who knew him, and most deeply regretted.

On the 6th June, Susan Ann, wife of R. H. Laurie, of Fleet-street. Mrs. Laurie was grand-daughter of the late Mr. Robertson, who had the honour of instructing his present Majesty in navigation.

On the 18th June, at Chatham, deeply regretted, D. B. Conway, Esq. Surgeon of the Ordinary at that port.

On the 7th June, at Falmouth, aged 78, Mr. Appleton, R. N.

THE
NAUTICAL MAGAZINE,

&c.

AUGUST, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

51. LIGHTS ON THE COAST OF FRANCE.

The following statement of the Lights on the French coast is extracted from the *Moniteur*, in which paper it is published annually, by order of the French government. The present statement is corrected to the 1st of April of the present year.

The height of each light is reckoned from the high-water level of the equinoctial spring-tide.

The distances at which they may be seen are given by approximation, according to the height of the lights, supposing the observer to be elevated 3, 10, 15, or 20 feet above the level of the sea, according as it may be a harbour light, one of the third, the second, or the first order. Some few lights, however, are excepted from this plan, as they are even too small to be distinguished from their own horizon, therefore the mean distance at which they may be clearly seen, and which is expressed against them, is the result of observation.

The points of the compass are reckoned from the true meridian of each place.

Dunkerque Lights.

1. On the tower of Heuguenard, near the head of the jetty, in the direction of the channel. A fixed light, 81 feet high. May be seen 15 miles distant.

2. On the West Jetty-head. A fixed harbour light, 23 feet high. May be seen 9 miles distant.

Calais Lights.

1. On the centre tower of the town. At 1250 feet from the Jetty-head, a little to the west of a line joining the two jetties. A revolving light, 124 feet high, eclipsed every minute and a half. May be seen 21 miles distant.

2. On Fort Rouge, to the west of the entrance of the port. A fixed light, 33 feet high. May be seen $4\frac{1}{2}$ miles distant.

Boulogne Light.

This light is established at the head of the western jetty, on an elevated stage, and is formed by two fixed lights, one above the other. May be seen distant 9 miles. Height of the upper light 39 feet; height of the lower light 29 feet.

Point D'Alpreck Light.

On the tower of the old Semaphore, distant one league S.S.W. from the entrance of Boulogne. A fixed light, 154 feet high. May be seen $10\frac{1}{2}$ miles distant. Height of the light 154 feet.

Lights in the Bay D'Etaples.

1. At LORNEL. On the north side of the mouth of the Canche. A harbour light, 33 feet high. May be seen 6 miles distant.

2. At LE TOUQUET. On the south side of the mouth of the Canche, 13 miles distant from the former. Two harbour lights, 53 feet high. May be seen $7\frac{1}{2}$ miles distant.

Cayeux Light.

At the entrance of the Bay of La Somme, on the south side. A fixed light, 29 feet high. May be seen 9 miles distant.

Le Tréport Light.

On the western jetty, at 167 feet from the head of it. A fixed light, 26 feet high. May be seen 9 miles distant.

Dieppe Light.

On the western jetty, at 492 feet from the head of it. A revolving light, 39 feet high. Whole interval of revolution, 72 seconds. Shows four times every 36 seconds. May be seen 9 miles distant.

L'Ailly Light.

On Cape L'Ailly, one league west of Dieppe. A revolving light, 305 feet high. Eclipsed every 80 seconds. May be seen 21 miles distant.

Light at St. Vallery-En-Caux.

On the western jetty, at 114 feet from its extremity. A fixed light, 29 feet high. May be seen 9 miles distant.

Fecamp Light.

On the north jetty, at the foot of the mountain La Vierge. A fixed light, 29 feet high. May be seen 9 miles distant.

La Hève Lights.

Situated on Cape La Hève, 206 feet apart from each other, bearing N. 20° E. and S. 20° W. Fixed lights, 446 feet high. May be seen 21 miles distant.

Havre Light.

Situated on the north jetty, 81 feet from its extremity. Harbour light, 23 feet high. May be seen 9 miles distant.

Honfleur Lights.

OUTER LIGHT. On the Hospital jetty, at the north-west extremity of the town. Harbour light, 33 feet high. May be seen 10½ miles distant.

INNER LIGHT. Up the river. On the north quay of the new basin. A harbour light, 29 feet high. May be seen 10 miles distant.

Quillebœuf Light.

On the quay, at the north extreme of Point Quillebœuf. A harbour light, 26 feet high. May be seen 9 miles distant.

Lights at the mouth of La Touques.

OUTER LIGHT. On the west side of the entrance. A fixed light, 20 feet high. May be seen 6 miles distant.

INNER LIGHT. Situated as the preceding. A harbour light, 33 feet high. May be seen 9 miles distant. The two lights on with each other show the direction of the channel.

Lights at the Mouth of the Orne.

OUTER LIGHT. On the downs, near the redoubt of Oyestreham. A harbour light, 39 feet high. May be seen 7½ miles distant.

INNER LIGHT. Situated on the church of Oyestreham. A harbour light, 92 feet high. May be seen 9 miles distant.

These lights are both on the west side of the mouth, distant 3609 feet apart, in a direction N. 24° E. and S. 24° W. When in one, they show the direction of the entrance of the channel.

Barfleur Lights.

On the left hand side of the entrance of the port. Two harbour lights, 33 feet high. May be seen 4½ miles distant. When on with each other, they show the direction of the passage for entering, and have been established since the 1st of March, 1831.

Light on Point Barfleur.

On Point Barfleur, or Gatteville, Eb N. of Cherbourg. A fixed light, 88 feet high. May be seen 13½ miles distant.

Lights in the Road of Cherbourg.

1. On Fort Royal, Isle Pelée, at the eastern entrance of the road. Two harbour lights, 46 feet apart, 85 feet high. May be seen 9 miles distant.

2. On Fort Querqueville, at the western entrance of the road. A harbour light, 39 feet high. May be seen 9 miles distant.

Lights at Granville.

1. On Cape Lihou. Rock of Granville, at 1509 feet W.N.W. from the port jetties. A fixed light, 154 feet high. May be seen 18 miles distant.

2. On the S.E. extreme of the New Mole, on the left of the entrance of the port. A harbour light, 26 feet high. May be seen 4½ miles distant. This light has been established since the 1st March, 1831.

Cape Frehel Light.

On Cape Frehel, department of the Cotes-du-Nord. A revolving light, eclipsed every two minutes and three quarters, 246 feet high. May be seen 21 miles distant.

ATLANTIC OCEAN.

Ushant Light.

On the north-east point of the island. A fixed light, 265 feet high. May be seen 21 miles distant. This light has been repaired since the 1st March, 1831.

St. Mathew Light.

On Point St. Mathew, at $7\frac{1}{2}$ miles west of the entrance of the Goulet-du-Brest. A revolving light, eclipsed every hundred seconds, 167 feet high. May be seen 18 miles distant.

Penmarkh Light.

On the church of St. Peter, in the hamlet of Kerity, department of Finisterre. A revolving provisional light, eclipsed every half minute, 43 feet high. May be seen 12 miles distant.

Isle Groix Light.

On Fort La Groix, at the east point of the island. A fixed provisional light, 154 feet high. May be seen $10\frac{1}{2}$ miles distant.

Lights at the Mouth of the Loire.

1. On the Four Rock, $3\frac{1}{2}$ miles west of Point Croix. A revolving light, eclipsed every minute, 56 feet high. May be seen $16\frac{1}{2}$ miles distant.

2. On the tower D'Aiguillon, situated on the north side of the entrance, 3 miles S. 55° W. of the church of St. Nazaire. A fixed light, 111 feet high. May be seen 15 miles distant.

3. On the tower De Commerce, situated on the north side of the entrance. A flashing light, at intervals of three minutes, 127 feet high. May be seen $16\frac{1}{2}$ miles distant. The tower De Commerce and the tower D'Aiguillon bear S. 51° W. and N. 51° E. of each other, distant 6398 feet.

4. On the N.W. point of Isle Pilier, distant $2\frac{1}{2}$ miles from the N.W. point of Isle Noirmoutier. A flashing light at intervals of four minutes, 105 feet high. May be seen $19\frac{1}{2}$ miles distant.

Lights on Isle D'Yeu.

1. On the bank of Petite Foule, distant 3511 feet from the N.W. point of the island. A fixed light, 164 high. May be seen 21 miles distant.

2. At Port Breton. The first on the extremity of the jetty to the right of the entrance of the port. Two harbour lights; one 23 feet high, may be seen 6 miles distant; the other, 51 feet high, may be seen 9 miles distant. When in one, they show the direction of the passage; they have been established since 1st March, 1831.

Lights of Port Les Sables D'Olonne.

1. On the quay of *La Chaume*, west side of the entrance of the port. A fixed light, 118 feet high. May be seen 12 miles distant.

2. On the head of the great jetty, east side of the entrance of the port. A harbour light, 23 feet high. May be seen 6 miles distant. These two lights in one, show the direction of the principal channel.

Lights of Pertuis Breton.

1. On the *Grouin du Cou*, distant 7 miles, N. 32° E. of the light *des Baleines*. A fixed light, 59 feet high. May be seen 9 miles distant.

2. On Point L'Aiguillon, distant 7 miles, N. 79° E. from Port St. Martin. A fixed light, 33 feet high. May be seen 18 miles distant. These two lights have been established since the 1st March, 1831.

Les Baleines Light on Isle Ré.

On the N.W. point of the island. A revolving light, eclipsed every three-quarters of a minute, 95 feet high. May be seen 18 miles distant.

St. Martin's Light on Isle Ré.

On the saliant angle of the *Barbette*, on the left side of the entrance of Port St. Martin. A harbour light, 39 feet high. May be seen 9 miles distant.

Rochelle Light.

At 46 feet east of the Tower de la Lanterne, on the left of the entrance of the port. A harbour light, 46 feet high. May be seen 12 miles distant.

Chassiron Light.

On the N.W. point of Isle Oleron. A fixed light, 101 feet high. May be seen 15 miles distant.

Light on Isle D'Air.

On the fort at the south point of the island. A harbour light, 56 feet high. May be seen 9 miles distant.

Lights at the Mouth of the Gironde.

1. On point La Coubre, north side of the mouth of the Gironde, and 7½ miles N. 28° W. from the tower of Cordouan. A fixed light, 36 feet high. May be seen 9 miles distant.

2. *Royan Light.* On point Corps de Garde, at 459 feet from the jetty-head. A harbour light, 36 feet high. May be seen 9 miles distant.

3. On the Cordouan Rock. A revolving light, eclipsed every minute, 207 feet high. May be seen 27 miles distant.

4. On a wooden tower, on Point Grave, distant 4½ miles, S. 81° E. from the tower of Cordouan. A fixed light, 59 feet high. May be seen 13½ miles distant.

Pauillac Light.

On the landing-place of the port, on the left bank of the Gironde. A harbour light, 20 feet high. May be seen 9 miles distant.

Biarritz Light.

On Point Biarritz, bearing N. 43° W. from the town. A fixed light, 114 feet high. May be seen 9 miles distant.

Socoa Light.

At the entrance of the Bay of St. Jean de Luz, on the western side. A harbour light, 98 feet high. May be seen 9 miles distant.

IN THE MEDITERRANEAN.

Light of Port Vendres.

On the Lighthouse Fort, right-hand entrance of the port. A harbour light, 107 feet high. May be seen 9 miles distant.

La Nouvelle Light.

On the head of the western jetty, left side of the entrance of the channel. A harbour light, 36 feet high. May be seen 9 miles distant.

Agde Light.

On the head of the eastern jetty, on the right hand side of the entrance of the channel. A harbour light, 29 feet high. May be seen 9 miles distant.

Cette Lights.

1. On Fort St. Louis, on the left-hand side of the entrance of the port. A fixed light, 42 feet high. May be seen 12 miles distant.

2. On the beacon, near Fort Richelieu. Two harbour lights, one above the other, 197 feet high. May be seen 9 miles distant. Established since the 1st March, 1831. At the distance of a mile and a half the two appear to be one. These lights on with that of the Fort St. Louis, show the direction of N.E. passage of the port.

Light of Aigues Mortes.

On the N.W. mole of the *Grace du Roi*, at 557 feet from its extremity. A flashing light every four minutes, 59 feet high. May be seen 15 miles distant.

Light of Camargue.

On the bank of the mouth of the Vieux Rhone, at 2 miles S.E. b S. from the old tower of St. Genest. A fixed provisional light, 49 feet high. May be seen 10½ miles distant.

Port of Bouc Lights.

1. On the mole head, on the left side of the entrance of the port. A harbour light, 26 feet high. May be seen 9 miles distant.

2. On the tower of the Fort of Bouc, on the right side of the entrance of the port. A harbour light, 98 feet high. May be seen 10½ miles distant.

Planier Light, Marseilles.

On the Planier rock, distant 8 miles S.W. from the entrance of the port of Marseilles. A revolving light, eclipsed every half minute, 131 feet high. May be seen 22½ miles distant.

La Ciotut Light.

On the fort, on the right side of the entrance of the port. A harbour light, 81 feet high. May be seen 10½ miles distant.

52. DOWNING BAY, *North Coast of Ireland.*

Extract of a letter from CAPTAIN MUDGE, R. N. :—

“ Sheep Haven Bay, on the north coast of Ireland, situated between Horn Head on the west, and Melmore on the east, has hitherto been considered by seamen as affording no kind of shelter whatever; and the consequence has been, that very few vessels go into that bay, if they can avoid it; and such as have been unfortunately driven there by stress of weather, have invariably gone on shore; instances of which occur nearly every year.

“ In the winter of 1831, a fine brig of 200 tons having anchored there one evening, to wait a tide, it suddenly commenced blowing from the N.E. The consequence was, that she was driven from her anchors, and stranded, and four of the crew drowned. Had the master been acquainted with Downing Anchorage, of which I send you the following short account, he might have saved his vessel.

“ Downing Bay lies nearly at the bottom of Sheep Haven Bay, on the east side, between two rocky points, at the termination of a long sandy beach. The northernmost of these points is called Downing, taking its name from the village situated on the south side of it, and the other is called Morslach. There is a clean sandy bay between them, and close under the former point is the anchorage, in from four to six fathoms water. The marks for it are to shut in Horn Head with Downing Point, when they will bear about N.W. by N. This anchorage will be about 150 fathoms from it on clean holding-ground, with security from all winds.

“ In running for this anchorage, the course from Horn Head will be about S.E. six miles. Great care should be taken to give a birth to two half-tide rocks, lying about a cable's length N.N.W. of Downing, which may be done by keeping the point of the Horn to the *westward* of the bluff of Horn Head, till the Glebe House, under the hill of Granna, be open to the south of Downing Point, when a vessel may haul up for the anchorage. When the sea breaks on these two rocks, which is generally the case, they may be approached as convenient. There are no other dangers to be avoided.

“ There is a considerable rebound, or under-tow, from the swell that occasionally rolls into Downing Bay, which causes a vessel to ride easily by her cable; and as the tides, of both flood and ebb, set round the bay towards the Horn, they assist also to check a vessel up to her anchor. On this account a second anchor should be dropped to the southward, to prevent the recoil from forcing a ship over her anchor, which it might do during the occasional cessation of wind, which takes place between the squalls from the N.W.

“ In proof of the excellence of this anchorage, I subjoin the following facts :—

“ The brig Solway, John Atcheson, master, arrived in Downing Bay, about the 15th of November, 1831, and remained at anchor six weeks, during the heavy gales of December from the S. S.W., W., and N.W.

“ The brig William Donaldson, M'Kenzie, master, arrived in Downing on the 5th of January, 1832, and remained nine days during heavy gales from the W. and N.W.

“ W. M.”

53. NAVIGATION OF THE BRISTOL CHANNEL.

" Notice to Mariners.

" Trinity-House, London, 2d July, 1832.

"The Corporation of the Trinity-House, London, having, in compliance with the request of the merchants, owners, and masters of vessels, and other persons, using or interested in the navigation of the Bristol Channel,—resolved to erect Light Houses upon the Nash Point, in the county of Glamorgan; and the requisite works for effecting the same being now in a state of great forwardness—Notice thereof is hereby given, and that the Lights in the said Light Houses will be exhibited on or about the 1st day of September next, and thenceforth continued every night, from sunset to sunrise, for the greater facility of navigation.

" Further particulars, together with the necessary sailing directions, will be published previously to the exhibition of the Lights.

" By order, " J. HERBERT, Secretary."

54. GEOGRAPHICAL COLLECTIONS.

Africa.

			Lat.	Long.
Bihé, Town.	- - -	Elev. 6650ft.	.. 13° 26' 0" S.	19° 42' E.
Cunhinga, Town	- - -	Elev. 3242	.. 9 50 10 S.	20 32 E.
Port Hunga	- - -	Elev. 3018	.. 9 42 30 S.	18 6 E.
Peak of Zambi	- - -	Elev. 11382	.. 9 35 20 S.	17 25 E.
Cambabe, Village	- - -	Elev. 2071	.. 9 18 0 S.	17 13 E.
Massangano	- - -	Elev. 1534	.. 9 24 0 S.	16 52 E.
Muxinca	- - -	Elev. 1048	.. 9 19 15 S.	15 56 E.
Mouth of the Logé	-		.. 7 12 20 S.	12 50 E.
Pemba, Town	- - -	Elev. 703	.. 6 37 30 S.	15 28 E.
Matamba, Town	- - -	Elev. 1324	.. 7 18 0 S.	20 19 E.
Cassanci, Vill.	- - -	Elev. 3939	.. 5 55 30 S.	23 31 E.
Baka, Vill.	- - -	Elev. 4412	.. 5 41 15 S.	25 31 E.
Cuzuila, Vill.	- - -	Elev. 4732	.. 4 3 15 S.	25 36 E.
Source of the Cuzuila	-	Elev. 5500	.. 4 19 0 S.	27 05 E.

Black Sea.

Cape Oros	- - -	- - -	- 41 7 0 N.	39 23 E.
Trebisonde,* Town	- - -	- - -	- 41 2 30 N.	39 38 E.
Tohorok, Town	- - -	- - -	- 41 39 0 N.	41 38 E.
Poti, (ancient <i>Phase</i>)	- - -	- - -	- 42 8 0 N.	41 48 E.
Redoute-Kalé (<i>Russian Fort</i>)	- - -	- - -	- 42 14 0 N.	44 34 E.
Soukhoun-Kalé (<i>Russian Fort</i>)	- - -	- - -	- 42 59 15 N.	40 59 E.
Pitsounda (ancient <i>Pythius</i>)	- - -	- - -	- 43 9 0 N.	40 21 E.
Pehiate	- - -	- - -	- 44 23 0 N.	35 59 E.
Soujouk-Kalé†	- - -	- - -	- 44 39 0 N.	35 26 E.
Anapa-islet	- - -	- - -	- 44 45 0 N.	
..... Town	- - -	- - -	- 44 55 0 N.	37 17 E.
Cape Khersonése (Crimea)	- - -	- - -	- 44 33 15 N.	33 23 E.

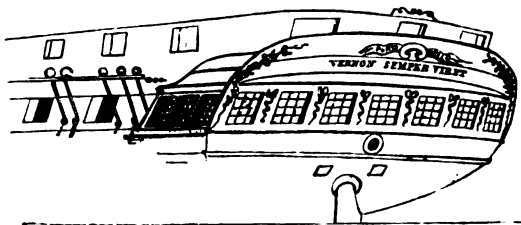
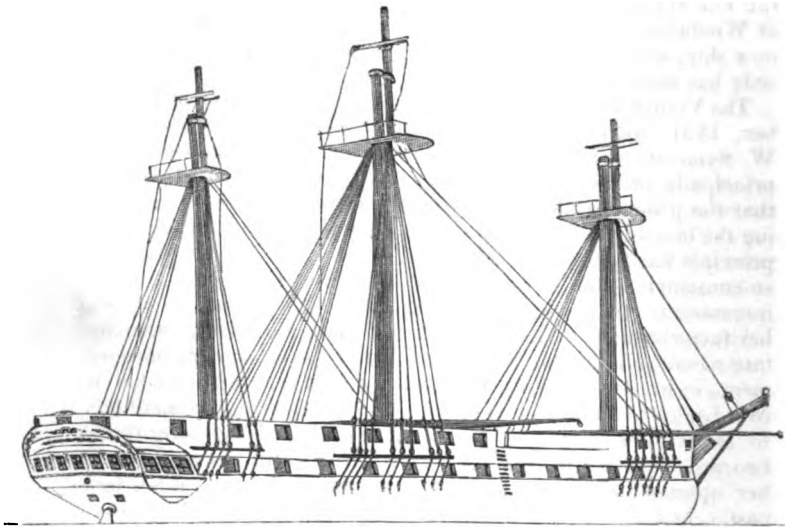
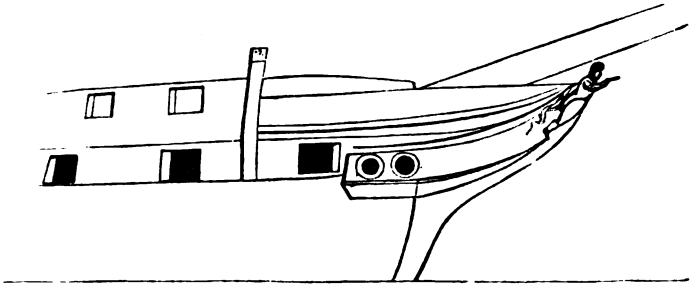
* Called by the Greeks, *Trapézonte*, and by the Turks, *Tarabozane*.

† By the natives called *Tumusse*. Ancient *Pathy*.

RECEIVED
FEBRUARY 1951
AGRICULTURE
TELEPHONE DIVISION

Sketches of His Majesty's Ship Vernon, of 50 Guns.

Woolwich, June, 1832.



VOYAGES AND MARITIME PAPERS.

I.—HIS MAJESTY'S SHIP VERNON, OF 50 GUNS.

OUR present number is accompanied by an outline sketch of H.M.S. Vernon, of 50 guns, lately launched at Woolwich. We must hope for the indulgence of our readers in not criticizing too severely some parts of our attempt, but are satisfied that it will be found a tolerably correct representation of the hull of this fine vessel. It may be well to state, that the sketch was made at Woolwich, under all the disadvantages incident to fitting out a new ship, which to sailors are well known, and that the water-line only has been altered.

The Vernon was laid down at Woolwich in the month of December, 1831, under the superintendence of her builder, Captain W. Symonds, the present surveyor of the navy, and is constructed principally of English oak. It is well known to naval officers, that the principle adopted by Captain Symonds is that of increasing the breadth *on deck*, and diminishing that of the hold. This principle has been adopted in the Vernon, the largest vessel yet so constructed, and she may be said to have the hull of a cutter increased to the proportions of a frigate. The method of joining her futtocks without chocks, lately introduced by Sir R. Seppings into naval architecture, has been adopted; besides other improvements in her floor-timbers and garboard strake, recommended by Mr. Lang, the builder at Woolwich Dockyard, which we shall refer to in our next number. The Vernon will mount 28 long thirty-two pounders on her gun-deck, 16 medium thirty-two pounders on her quarter-deck, and 6 medium thirty-two pounders on her fore-castle, and will be fitted with the masts and yards of a middle class seventy-four. The hole under the cabin windows is for riding by a cable astern when necessary. The Vernon was launched on the 1st of May, having been completed in the short space of about five months. We have already given her dimensions in page 211 of the fourth number of the *Nautical Magazine*; in addition to which, we may add the following:—

Tonnage, - - - - -	2082
Length between the perpendiculars from the fore part of the stem at the gun-deck, to the after part of the wing transom, - - - - -	176 ft.
Keel for tonnage, - - - - -	144 ft. 6½ in.
Extreme breadth - - - - -	52 ft. 8½ in.
Depth of hold - - - - -	16 ft. 5 in.

Launching draft of water	- - - -	} Forward	13 ft. 6 in.
		} Aft	17 6
Calculated draft when complete for service,		} Forward	20 6
		} Aft	21 6
The height of her ports from the water-line when complete for service	- - - - -		9 ft. 3 in.
The distance between her ports	- - - - -		7 ft. 6 in.

The Vernon stows 253 tons of water in tanks, and 33 tons in casks, with six months' provisions under hatches, for a complement of 500 men. She is at present commanded by Captain Sir F. A. Collier, Knt.

II. NOTES ON THE INVENTION OF MASSEY'S LOG AND SOUNDING MACHINE.

The common log has been in use for more than two hundred years.* It was obviously the simplest method of estimating the ship's way by measuring the distance which it reached in a given time, from any thing which might be supposed to be floating dead upon the surface of the sea. There have, however, been attempts to use a different method. Mr. Saumarez pointed out, that two plates of metal might be joined together, and set in such a form, that, as they were drawn through the water, they would rotate about an axis, and, by the motion so produced, would enable the ship's way to be reckoned. Smeaton suggested some improvements to this instrument in 1754; but neither of them seem to have been aware of the methods having been pointed out long before. In a lecture concerning navigation and astronomy, read before the Royal Society, May 11, 1687, Dr. Hooke describes "a way wiser for a ship at sea." He says, "I have many years since shewn to this society, (as will, I suppose, appear by their journals,) an instrument to keep an exact account of the way of a ship through the water; whether it has been since tried, I know not, yet I have many years since that heard of one or two who were getting a patent for a like instrument; whether they succeeded or not, I have not inquired, for I freely impart it for a general good, and should be glad to hear that it were put in practice, and perform what may, in all probability, be expected from it, which, I conceive, will be a very exact and certain information of the way of the ship that useth it through the water." This passage occurs in p. 561 of Hooke's *Posthumous Works*; and in the next page, the editor adds the following remark:—

* Dr. Hutton (art. Log.) says, "it is not known who was the inventor of this method of measuring the ship's way, or her rate of sailing; but no mention of it occurs till the year 1607, in an East India Voyage, published by Purchas." The passage here referred to, is most probably in Keeling's Voyage, "Pilgrim's," vol. i. p. 188. Bouguer, in his "Traite de Navigation," p. 95, speaks "de la maniere de mesurer par le Loch," and this word is so evidently a corruption of our own, that some probability is suggested, by the name, of the invention having been originally English. It is very possible that a mere log of wood was at first thrown overboard, with a line attached to it.

" All that I can find of these instruments are only the two following extracts out of the Registers of the Royal Society, Nov. 14, 1683. Mr. Hooke shewed an instrument to measure the velocity of the air or wind, and to find the strength thereof, which was by four vanes put upon an axis, and made very light and easy for motion; and the vanes so contrived, as that they could be set to what slope should be desired. It was several times tried and examined in the long gallery in Gresham College; whereby it appeared, that by walking from one end thereof to the other, and carrying the same above one's head, the doors and windows of the said gallery being shut, and so the air within it being not in motion, but stagnant, the instrument made so many turns as there were circumferential lengths of the said vane in the length of the gallery; and if by trial it were found to be more or less than the due measure of the circumferential lengths, then by setting the said vanes either flatter or sharper in respect of the way of its motion through and against the air, the same was easy to be adjusted; the use of which may be of very great consequence in the business of sailing and steering a ship upon the sea, and for examining the power and strength of the wind upon land, in order to the theory of shipping for which it was designed."

" A Way Wiser for the Sea, November 28, 1683.—I shewed an instrument I had contrived, and shewed some of this Society above twenty years since, by which the way of a ship through the sea might be exactly measured. This part of the engine now shewn was the vane, fly, or first mover of the whole, feeling as it were, and distinguishing, the several qualifications of the ship's course, but was to be regulated by several other additions in the complicated engine, which I design shortly to get executed."

This principle of the rotation,* produced by oblique vanes was, likewise, applied by Dr. Hooke to the measurement of depths: and in the posthumous publication of his " Philosophical Experiments and Observations," there may be seen (at p. 233) the description of an " Explorator Profunditatis," with the contrivances for registering the number of turns made in the descent, and precautions to prevent the action of the water from affecting the instrument, when it reascended to the surface. It is remarkable that Hooke did not attach his sounder to a line, by which it might be drawn up again, but used a contrivance exactly similar to that described in the last number of the Nautical Magazine, p. 174. He made the whole sink by means of a weight, which was attached to it by a hook: and when this struck against the bottom, the pressure of the weight being taken off, the hook flew out, and released it, so that the remainder of the instrument rose again by its own buoyancy. The trials, which are stated to have been made by Dr. Desagulier, were

* Some experiments on the effects of a resisting medium to produce rotation in oblique vanes, may be seen in Beaufoy's *Scoppetaria*.

probably executed with the machine, which he describes at p. 223, vol. ii. of his Lectures. It was made upon Dr. S. Hale's suggestion of measuring the depth by the space, into which a given quantity of air would be reduced by the pressure of the superincumbent water. It only agreed with the more recent suggestion, in Desagulier's having applied Hooke's method of sinking the sounder by a weight which might be released from it. It is clear, therefore, that the devices, which have been brought forward on this subject of late years, belong to our ingenious countryman, who published them some 150 years ago.

N. R. D.

III.—SAUGOR ISLAND, and its Condition subsequent to the Inundation of November last.

THE land, called Saugor (Sāgur) Island, consists of a cluster of ten islands, at the mouth of the river Hoogly, of which it forms the left bank, intersected by tide creeks, three of which, the Bhugwa Khalee, the Arhaee Bhanka, and the Sāth Bhankee, (or Chowkhalee,) afford a navigable passage for large boats between that river and Barratolla, or Channel Creek; and a fourth, usually called Pagoda Creek, communicating with both, opens upon the sea. The length of the Island, considered as one, is about twenty-four miles in a direction due north and south: its smallest breadth is about a mile and a half near the northern end; its greatest about eight miles at the opposite extremity. The whole area of land surface may be about two lakhs of biggahs, reckoning three biggahs to an English acre.

The soil is a stiff dark mud throughout, the superstratum varying little with the quantity of vegetable deposit it may have received, but a constant blue clay beyond the depth of three feet. In some parts only on the southern shore, a sandy beach has been formed by the waves. Except that, at no time it has the ash-colour mentioned by Dr. Buchanan, his description of the Khiar lands of the Dinagepoor district might be applied to the Saugor soil, which becomes extremely hard, and cracks in deep fissures during the dry season, and is thereby rendered incapable of cultivation at that period, unless broken up with powerful ploughs, and watered. Hence no success has yet attended any experiment to raise a dry crop, and those crops have also failed which do not wholly depend upon the rains. It is remarkable, that on the eastern side of Channel Creek a different soil is met with, altogether without fissures, and similar, it would seem, to the light *Poli* soils of Dinagepoor. In fertility, perhaps, no lands are superior to those of Saugor generally, for raising a single annual crop of coarse paddy; the most fertile are those which have been covered with the tallest and closest jungle trees.

No part of the Island being above the reach of high spring-tides, its only spontaneous vegetation was such as grows in salt water :—grasses of several kinds; samphire; a fern called *Jawo*, difficult to eradicate; the *Hettaul*, or *Bukra* palm; and, besides many beautiful species of creepers, a variety of trees common throughout the Soonderbuns.

To what extent, and for what length of time, the island was formerly inhabited, is not known. From the dense nature of the forest, which lately covered it from one extremity to the other, and from the size of the trees, it seems probable that it has not been under the plough within the last century. Less than half that period would suffice to restore to its full size, a jungle that had been merely cropped by the visits of wooding boats and molunghees. It is ascertained, that the island once formed a part of the zumeendaree of Hidgelee; and, were other evidence wanting, the populous state of that district, with its own position at the mouth of such a river as the Hoogly, gives reason to infer, that it would not for ever remain without inhabitants, while there existed in the Soonderbuns a dense population, whose extinction is matter of history. In fact, some large islands at the mouths of the Ganges and Megna, are now again very thickly peopled. There is, however, in an old annual register, an account of a violent storm in the seventeenth century, accompanied with a very extraordinary rise of the sea, to the height of forty feet,* which is said to have swept away a population of 80,000 souls, then residing at Saugor. These awful inroads of the sea are unfortunately not very rare on the coasts of the Bay of Bengal. Captain Huddart describes one which destroyed ten thousand persons in the neighbourhood of Coringa, in May, 1787, and penetrated twenty miles over the country; and of late years, we have witnessed two in quick succession, the submersion of the Burrisaul district, in June, 1822, and the inundations of Saugor and Balasore, in May, 1823.† A storm so fatal as that which has been first alluded to, would create such a panic as to deter settlers from establishing themselves; and in the mean time, a forest of jungle gradually springing up, and the decay of what remained of the old protecting bunds, would render it an enterprise, requiring much capital and combination, to remove the one, and to renew the other. It is not extraordinary, that in

* Perhaps estimated from the ordinary low-water mark, which would still make it full 15 feet above the highest land in Saugor, and high enough to lay the banks of the Hoogly under water far above Calcutta.

† Besides these inundations, one, perhaps more destructive than any on record, occurred in the Buloa district, in the night of the 1st June, 1825; when the sea, urged by a violent tempest, rolled in three vast waves over the land, and covered it to the depth of 10 feet. It was on that occasion that the entire population of Hattya and Sundeep was swept away. By the reports of the Darogahs, the aggregate loss of lives amounted to 150,000. Mr. Don-nithorne, then residing there as salt agent of the district, from whom these particulars are derived, supposes some exaggeration, but estimates the mortality at full 100,000 persons, including those who died from starvation. The Company lost 405,000 maunds of salt, and all the cattle and property in the villages were destroyed.

such circumstances, this portion of their estates should have been neglected by the rajahs or zumeendars of Hidgelee.

Besides fresh-water trees, more certain vestiges of habitation have been discovered, both in the central parts of the island, and near its shores. Ruined tanks, scattered bricks, earthen and brass vessels, some of them buried a foot or two in the soil, remnants of brick buildings, chiefly such as appear to have been used for religious purposes,* images of idolatry, both wood and stone. Five good specimens of the latter, in a perfect state, similar to what are commonly met with in Hindoostan, were, in 1828, dug out of the ruins of a square brick building, found in the high jungle at the south end of Gunga Saugor: the ryots of that estate have restored them to their original purpose, and they entertain a Brahmin for the duty of the little *Mut'h*, which has been constructed to receive them. The history of these ancient edifices, dedicated to Hindoo worship, is now lost, and with it all respect for their remains. But there is one remarkable exception in the temple of Kopelmunee Mahaedo, situated on the south-eastern shore of a division of the island, called Saugor Proper,† at the mouth of the large nullah thence called Pagoda Creek. This temple is said to have been built, (probably rebuilt,) by Bustum Das Seet, about seventy years ago. Its white walls, standing upon a high mound of uncemented bricks, covered with soil and vegetation, and contrasting with the dark foliage of some large trees peculiar to the spot, make it a conspicuous and very picturesque object, and a good landmark to ships either entering the river, or proceeding (if that anchorage were resorted to,) by Lacam's Channel into Channel Creek. The building is not the less picturesque, because it is in ruins: the high tides throwing a surf upon the shore at its base, have already covered it with loose bricks and masses of broken wall. Since last year, when a solitary Brahmin was killed by a tiger within the very sanctuary, it has remained deserted as a place of residence; but continues to be visited for annual worship, at the *melas*, or religious fairs, which are held upon the neighbouring sands, in November and January, the latter being the principal one; and until lately, if not still, two sects of Brahmins, called *Sunneasees* and *Ramanundeas*, profited by the opportunity to exact several thousand rupees from some thirty or forty thousand pilgrims, and from the pedlars who set up booths on those occasions. A fresh-water tank has been kept in tolerable repair by the Brahmins, for their accommodation, the only spot in Saugor where sweet water was procurable before the time of the Saugor Society, with the exception of the tank dug for the Light-house establishment, on

* The huts of the population would leave no trace of their existence, if built, as they now are, with light posts, mud, mats, and straw.

† The natives give the name of Gunga Sagur to this, as well as to the adjoining island. The name signifies "tank of the Ganges," and is supposed to have reference to a tradition, that the principal mouth of the great river was formerly there.

Middleton Point, in 1811. These *melas* have existed from time immemorial. A custom formerly prevailed at those festivals to sacrifice children in propitiation of the holy Gunga, by throwing them into the sea, where, if not immediately drowned, they soon became a prey to sharks or alligators, both of which are sufficiently abundant and ferocious in that neighbourhood. This practice, it is well known, was put down by the wholesome exercise of British power, in 1804; since which date a party of police peons from Calcutta has always attended the fairs, to prevent an infringement of the regulation, and likewise to check other disorders, which, however, they have not unfrequently promoted. The devotion of the natives is now restricted to sea-bathing, and a visit to the shrine of Mahadeo.

Saugor, in its desert condition, was the dread of mariners. The stagnant waters of the retiring tide, stimulating a rank vegetation, and rotting masses of fallen leaves and branches of trees, were supposed to give it a pestilential atmosphere, most injurious to the crews of ships anchored near its shores, and to those who ventured in boats among its creeks; while such as were bold enough to land, exposed themselves to a more dreadful and less uncertain peril, from the abundance of tigers of the largest species. Here there was no asylum in case of shipwreck.*

The northerly monsoon seemed to be steadily set in with a cloudless sky at Calcutta; and the freshness of the mornings, indicating an early and a long cold season, was the common subject of congratulation among the Europeans residing there. A depression of less than a tenth of an inch in the barometer on the 30th of October, excited no attention: the day was fine, as usual, with very light northerly airs; but towards evening, a veil of cirrus enfeebled the sun's rays, and some heavy clouds shewed themselves in the south-east. At 8 P.M. a light puff or two from that quarter momentarily interrupted the northerly breeze, which had freshened a little, about the time that a gust from the same direction was felt in Howrah, strong and sudden, like a north-wester. At day-break on the 31st, the sky was overcast with a drizzling rain, the wind rather fresh at N.E. and increasing; by noon it was blowing a gale, and at short intervals heavy showers succeeded each other, during the rest of the day; and violent gusts after sunset, similar to those preceding the storm in May last year. The direction of the wind was still N.E. to E. After midnight, it suddenly veered to the southward, blowing tempestuously for several hours. During the 1st, it came round to the S.W., abating in force with every

* A native boat was wrecked on the south-east coast of Gunga Saugor, in November, 1820: some of the crew were drowned; the rest, six in number, swam on shore, but had scarcely reached it when they were attacked by three tigers, and five of them were devoured upon the spot. The sixth had the good fortune to climb a tree, where he remained two days, till he was seen from one of the Company's row boats, which but rarely pass in that direction. It is probable, that many unknown cases have occurred, where no one has survived to tell the tale.

fresh point of westing. The 2d was a dull cloudy cold day, with the wind at W. to N.W., but the gale had ceased: while it continued, there fell about 2 inches of rain. The barometer indicated at its lowest 29^{ins}. 672, at 4 P.M. on the 31st, and at sunrise on the 1st of November, being only a fall of .348 with reference to the highest point at which it stood on the 29th. But the river was unusually troubled, and much damage occurred among the boats: at Mr. Kyd's dock-gates, the water rose to the mark of 21 feet 6 inches* in the night-tide of the 31st, having been only at 14 feet 6 inches at high-water in the morning, although, when the springs came on, the highest level was only 17 feet 9 inches in the night-tide of the 4th. The low-water level was raised more than 5 feet, being by the mark 13 feet, instead of 7 feet 10 inches, its proper level, in the day-tide of the 1st of November.

Such was the character of the storm at Calcutta, where few fallen trees exhibited signs of extraordinary violence. Indeed, it would seem to have been more sparing of its ravages here than almost in any place exposed to its influence. Hundreds of boats are said to have been lost upon the Ganges, some of them laden with indigo, and a letter from Bancoorah reports the destruction of trees to have been very great in that neighbourhood. The weather at Saugor is thus described by a gentleman residing at Ferntosh:—

“30th October, 2 P.M. clouds gathering in the E. quarter,—3 P.M. some drops of rain.

“31st. Morning, strong breeze from N.E. with light rain,—increasing towards noon with heavy rain,—evening, hard gale at E. and heavy driving rain,—eight, 30 P.M., blowing very hard from the S.E., and the tide beginning to pass over the bunds of the estate—10 P.M. wind S.W. blowing a hurricane,—trees and houses falling—the wooden bungalow shaking very much, and the water within a foot of the floor, which is raised between 5 and 6 feet above the ground.

“1st November—wind S.W. moderating, but strong squally breezes all day from S.W. to W.S.W. without rain.

“2d—Wind N. to N.W. and cloudy.”

Here the gale was much more severe than that of 1823, and the water rose at least a foot higher over the land; but its greatest fury was spent in the Midnapore district, and on the unfortunate coasts of Kedgeree, Hidgelee, and Balasore. The large bunds of those coasts, behind which a numerous population slept in fancied security, were suddenly overwhelmed by a tremendous wave, sweeping away with resistless force every house and every article of property in the native villages, and destroying the paddy crops, all the

* Twenty feet by the river gauge, reduced to correspond with his tide-tables. In the great storm of May, 1823, the water only rose to the mark of 20 feet (River 18.6), being 1 foot 4 inches above the proper level: the greatest difference was then at low water, the river level being 9 feet 3 inches, instead of 6 feet 4 inches, as it ought to have been by calculation.

cattle of an extensive tract of country, and a large portion of the inhabitants. Hundreds of cattle were seen floating past the ships at the Sand Heads. The collector of Balasore, who with difficulty saved himself and his family, has given a frightful picture of the desolation around him—the atmosphere being infected by the carcasses of men and animals, which the retiring waters had left scattered upon the ground. Six hundred persons have been reported drowned in a small district; but there is reason to fear, that the whole number of lives lost will amount to some thousands;* for the inundation extended from Kedgerree as far as Cuttack, and even broke through the bunds at Culpee and Diamond harbour, besides creating a tremendous bore of five feet in the Roopnarain, at Tumlook, which destroyed a great many boats, and nearly all the people in them.

Saugor has been more fortunate than the opposite coast; but, although from age, and the grass upon them, the bunds of all the estates were stronger, while at the same time they were in general larger than in 1823, and mostly in good repair, no part of the island has escaped inundation, except a few of the tanks,—a very important exception, with reference to the time of year, and the number of persons dependent upon them for subsistence. The following particulars of one of the estates (the south-eastern of the island) have been collected on a hasty visit.

“*Gunga Saugor*.—No lives lost; but the damage was in other respects most severe, as will be seen by the following extract from the report of Mr. Rees, the superintendent.

“29th October, at night, wind easterly, with light showers. 30th, day and night, some rain,—wind as before. 31st, blowing very hard from East;—the morning’s flood nothing:—at 3 P.M. blowing a gale,—flood-tide made at 6 P.M., and at 8½ P.M. the inundation began, the water continuing to rise till 1 P.M., and passing over bunds 7 and 8 feet high, the rise being 8 to 9 feet above usual spring-tides, and greater than in 1823. The E. bunds broken in several places, and the Nullah burst,—S. and N. bunds also much broken: the bunds west of the Jheel, and the outer bund of the salt-works, entirely gone,—the godowns, bungalow, and salt golahs, all washed away,—most of the ryots’ houses down—and my own bungalow, with all its offices. All the tanks full of salt-water: (one, however, is drinkable, though a little salt.) Many casuarinas and cocoa-nut trees washed or blown down, and all the fruit trees in the garden dead,—many cattle drowned, and floated away. The ryots and their families in distress for food, and unwilling to remain upon the estate; their crops are entirely ruined.”

* A letter from Cuttack, since published in the newspapers, estimates the destruction of lives at ten thousand, the entire population of 300 villages, which are said to have been annihilated by the waves.

It is remarkable, that such an inundation should have been fatal to only six persons, in a population of nearly seven thousand; the people saved themselves every where by climbing to the tops of their houses; but the calamity is sufficiently severe, and many may yet be carried off by the maladies which want engenders, before their distress can be relieved.

Most fortunately, the storm came on during neap tides: had it occurred at any time between the 2d and 6th of November, the tide would have risen three feet six inches to four feet higher at Saugor, and the frail asylum of the fallen thatch of their houses would have been swept away with most of the inhabitants. The destruction of lives would then perhaps have been as great upon the island, as it has been at Kedgeree, Hidgelee, and Balasore, and in those districts the desolation would have been awful indeed. Nor is it unlikely, that the inundation might have extended even to Calcutta, where the river would overflow its banks at less than 23 feet, (by Mr. Kyd's tide register,) which is but three feet above the level it attained.

For the foregoing account, we are indebted to the perseverance and exertions of G. A. Prinsep, Esq., who has zealously collected a great mass of interesting information on this subject.

The effects of this storm have been most severe at Balasore. Here the unhappy natives in vain sought refuge from the sudden inundation; some by gaining the tops of their huts, and others by climbing the adjacent trees. But these were already occupied by snakes, and most of the unfortunate people who had trusted for safety to this last resource, perished from the stings of these reptiles, while the rest were hurried away by the fury of the sea. Kedgeree, a small place north of Balasore, added seventy-five persons to the many thousands that perished on various parts of the coast; and so sudden was the progress of the sea beyond its usual bounds, that many families, from being unable to make their escape, were drowned in their huts. At Kedgeree, the sea rose ten feet above the level of the highest spring-tides, the pilot schooners were all damaged, and two of them driven over the sands into the country. Nor was the loss of life the only evil occasioned by this disaster. The destruction of cattle and other property was no less severe; and although every care was taken to supply the surviving natives with rice from the government stores, the distress occasioned by the want of fresh water was another severe consequence of this inundation.

IV.—*On the Advantages possessed by Naval Men in contributing to General Science.*

(Continued from page 185.)

It may at first sight, perhaps, appear somewhat strange to assert, that naval men can render great service to Geology. Such, nevertheless, is the case; for who have such opportunities of tracing the effects of tides and currents on coasts, the transport of detritus by moving water, the changes in the nature of the bottom in soundings, the geographical distribution of shells, and various other subjects intimately connected with this science. These inquiries are doubtless also highly important to physics, zoology, and other sciences, but they are not the less interesting to the geologist on that account; on the contrary, the greater the perfection of chemistry, physics, zoology, and botany, the greater the progress he will make in his own study.

The depths at which streams of water, produced by tides and currents, are felt, is little understood; neither is the depth at which waves act upon the bottom, by any means ascertained. With respect to the latter it has been supposed, that at 15 fathoms the movement of the bottom, caused by a heavy sea, ceases; this, however, requires confirmation. It is well known, that in eight or ten fathoms the sea becomes turbid and discoloured over a bottom of sand or mud during a heavy gale; but in forming inferences from such facts as these, it will be necessary to guard against the errors that may arise from tides and currents setting from shallow into deeper water.

It has been considered that water, with a velocity of three inches per second, would cut up fine clay; six inches per second, fine sand; eight inches, sand as coarse as linseed; twelve inches, fine gravel; twenty-four inches, pebbles one inch in diameter; while it would require three feet per second to sweep along shivery angular stones of the size of an egg. When the seaman recollects the velocity of some tides over banks, he will, perhaps, be inclined to think, either that there must be very considerable friction, retarding the water at small depths, thus producing a considerable difference between the velocity of the water at the bottom and on the surface, or that the foregoing calculations are incorrect. It is, therefore, a subject which requires that investigation which naval men have greater opportunities of giving it than any other class of persons.

Sea-cliffs afford the best geological sections, particularly on a tidal coast, where the heavy battering power of the breakers acts upon a greater or less perpendicular height, according to the rise or fall of tide. It will be found, that coasts generally are scooped out in proportion to the hardness of the rocks of which they are composed, except when they are flat, and rise out of shallow water, in which case sand is thrown up abundantly by the sea, and being

blown by the prevalent winds inland, is accumulated in sand-holes or drones; as for instance, on the coast which stretches from Bordeaux to Bayonne. Naval men, when in harbours, or employed in watering parties on unfrequented coasts, have frequent opportunities of examining sea cliffs, and they can render good service to geology, by making an accurate sketch of such cliffs (in face,) and marking on the sketch the places whence they have detached pieces of rock as specimens. These specimens, when properly numbered to correspond with the sketch, will enable a geologist to determine the superposition of the rocks at those places, if it should have so happened that they rested in beds one above another. Organic remains, or petrifications of shells, corals, plants, bones of animals, &c., found in beds of rock, being of great importance in geological investigations, the observer should collect as many of them out of those beds which may contain them, as he conveniently can, taking care to injure the fossils (another name for organic remains) as little as can be avoided, and at the same time ticketing the specimens, to correspond with the beds of rock noticed in the sketch.*

Specimens of rock are frequently brought home, which have been picked up from sea-beaches; these, from having been rolled about from various situations, possess little value in the eyes of a geologist, as they afford him little positive information respecting the structure of the country visited. Should, however, organic remains be discovered in or among any such rolled beach-pebbles, it would be advisable to bring them away, as they may eventually lead to some useful information.

When, as sometimes happens, a rock which does not lay in beds, and is therefore termed unstratified, comes up to others which do lay in beds or strata, and sends forth veins into the latter, it is advisable to make an accurate sketch of the fact, and to detach pieces of rock, as specimens, as well from the rock or rocks in beds as from that which is unstratified; for probably the different rocks will be found altered in their general characters towards the points of contact. Sometimes a great wall of unstratified rock comes up among other rocks divided into beds, the mass of the latter having not unfrequently fallen down, or slipped on one side of the wall of rock, as if some considerable force had upheaved one side. Such a wall of unstratified rock is termed a *dyke*, and when it does not occur, and the rocks have merely slipped more

* It should be here observed, that geologists do not confine the term rock to hard substances usually so named, but apply it also to sands, clays, marls, and any other mineral masses which compose the earth's crust. Some very hard rocks, such as limestones, contain fossils, they then can only be obtained with difficulty; but from the marls, sands, clays, and loosely aggregated sandstones, which often abound with these remains, they can readily be detached. When very tender, it is better to take up a lump of clay, marl, or sandstone, which may be full of organic remains, and keep it in some convenient part of the ship until brought home, when it may be opened carefully by those to whose charge it may be delivered.

on the one side of a dislocation than on the other, such slip is termed a *fault*. It is important to notice these facts, and they are never so well exhibited as in sea-cliffs, precisely, therefore, where a naval man may have good opportunities of observing them.

Coral islands, more particularly those of the Pacific, have often engaged the attention of the mariner. Those which constitute circular groups are now generally considered to be the work of those creatures which make and inhabit the bodies commonly called corals, and which have established themselves on the craters of submarine volcanos; an opinion which all recent observations appear to strengthen. Researches, therefore, among these circular islands, in order to detect portions of volcanic rocks, (which are indeed reported to have been found,) are important. Probably portions of such rocks may be more frequently detected than is commonly supposed, in the beaches usually thrown up on the windward sides of such islands. It has been considered by some of the naturalists, who have accompanied expeditions to the Pacific, that corals do not by any means raise the high walls from great depths, commonly supposed, but that, on the contrary, they only build to the height of a few fathoms, and under favourable circumstances. It is also considered, that three particular genera of corals, named *Meandrina*, *Caryophyllia*, and *Astrea*, are the principal architects of these structures. Supposing that a naval man, who may happen to land upon any one of these islands, be desirous of ascertaining what particular kind of corals do principally form them: although no naturalist, he may still greatly aid the investigation, by looking about for differences in the various corals presented to his attention, which probably his eye will soon enable him to detect. He has now only to collect specimens of these different kinds, and to ticket them on the spot, stating the relative proportion in which any particular kind may seem to him to abound more than the others. Many rare corals are found in the still water, either in the lagoons, or in the little bays to the leeward of coral reefs, which are highly valuable to the naturalist. They should, however, be collected with great care, to prevent injury to the tops of the cells inhabited by the animals; they should then be carefully dried, and packed with tow in a box or locker. Some coral islands seem to have been elevated above the level of the sea subsequently to their formation, as for instance, Henderson's Island, observed by Captain Beechey, in the Pacific.

When in harbours naval men, possess abundant opportunities of procuring specimens of the fish, *crustacea*,* and shells of the particular country they may be in. Large specimens of fish are necessarily of difficult preservation, but smaller fish may be readily

* Animals of the crab, lobster, and shrimp kind.

secured in bottles or jars of spirit, or even in brine, if spirit cannot be readily obtained. It is always desirable, that the spirit should be colourless, and of about the strength of rum or brandy fit for drinking. Care should be taken to plunge the fish into *fresh water* before it is placed in spirit, but not so roughly as to injure the scales or fins; a small hole should be made in the belly, to let the spirit in, and each fish separately wrapped in linen or paper, to prevent one specimen from rubbing and injuring another. The same care should be observed when packing crustacea or shells with the animals in them.

When parties are sent out to haul the seine, excellent opportunities are afforded for procuring a great variety of marine productions. It is a very common practice to throw away the fish not considered good for the table. These are precisely the fish least known to naturalists; and if the seine be hauled, as is often the case, in distant parts of the world, the officers who superintend might usefully employ themselves in saving specimens of these commonly rejected fish. It rarely happens, but that a quantity of curious crabs, and creatures of the star-fish kind, with sea-eggs, and other things, comes up with the seine, more particularly in tropical countries. On such occasions, a naturalist rarely fails of reaping an excellent harvest, and therefore those who would wish to assist him, or science generally, should not suffer such opportunities to escape.

Shells are very commonly collected during voyages, and brought home; but it generally happens that they are selected for their beauty. To such an extent indeed has this practice been carried, that, after several ships have touched at particular places, an abundance of such shells have been poured into the cabinets of Europe, while an equal abundance of other shells, of inferior beauty, are unknown to naturalists, though by no means rare, at the very same places. The object of the true naturalist goes something beyond the mere possession of several handsome shells; he looks to the organic structure of the animals inhabiting and forming them, to the geographical distribution of species over the face of the globe, the kind of situation they delight to inhabit, and many other particulars, which it would be out of place to notice here. It therefore is of consequence to him to obtain every kind of shell in the actual state in which it is found, whether handsome or hideous. Even damaged shells, when none others can be obtained, are valuable, inasmuch as they enable him to determine the geographical distribution of species. As the organic structure of the animals inhabiting shells constitutes a principal branch of study, it becomes important to obtain the animals in the shells, and this naval men may frequently do; and by plunging them into spirits, they can readily preserve them for examination. If possible, when a shell is procured, information as to the kind of bottom it

inhabits, the common depth at which it is usually found, and other particulars connected with it, should be obtained. A mark being placed on the specimen, if plunged into spirit, and a corresponding mark being made in a note-book, the particulars thus acquired will not be lost, and there will be no danger of confounding one shell with another.

We will not fatigue our readers by discussing this subject further. Our object will be attained, if we have shewn that naval men can greatly contribute to the advancement of general science, without at all neglecting their leading and important duties, and during many an hour that they may not be engaged in such duties, they can not only assist others, but render those times that are often tediously passed, hours of pleasure and instruction. The mere towing of a fine gauze net, during light air, and in a calm sea, will sometimes produce an abundance of curious creatures. If on a coast seldom visited, an officer, going down to his boat, collects several of the sea-weeds over which he treads,* to be subsequently dried and preserved, he does that which costs him little trouble, and yet he has the satisfaction of knowing that he is at that moment, perhaps, the means by which a hitherto unknown production is presented to the scientific world.

H. T. D. B.

V. *Hints for collecting Specimens illustrative of Zoology.*

OFFICERS in His Majesty's navy who may feel inclined to collect specimens illustrative of natural history, or to make observations on the habits of animals, have great opportunities of forwarding that branch of science.

Those who are desirous of taking advantage of such opportunities, should have with them some standard works in natural history, and books which treat of the mode of preserving animals, such as "Taxidermy," "Swainson's Naturalist's Guide," and "Bullock's." In addition to the technical information to be gained from these, they may perhaps derive some assistance from the following Hints, principally for collecting marine animals.

CORALS.

The most beautiful and luxuriant species are to be found between the tropics; but scarcely any seas, save those where an eternal frost reigns, are without these zoophytes. If carefully removed, with a sufficient portion of the stone, rock, or other surface to which the base is attached, the specimens may present not only much desirable information as to the mode of reproduction and

* The geographical distribution of marine plants (sea-weeds) is as yet but little known, though, no doubt, in harmony with other natural productions, they are governed by some great general law. Specimens, therefore, of these, which require but little trouble in collecting, are of importance. They can readily be dried between blotting paper.

growth, but may also be found to be the nidus of many interesting conchifera, mollusca, and even of some crustacea. Preserve some specimens, with the fleshy parts, in spirits. A patient search in the warmer latitudes will be very probably rewarded by finding rich groups of spondyli anchored in the middle of coral branches. When any such prize is obtained, the greatest care should be taken to displace nothing, but to preserve the whole in the same state as it presented when first raised from the sea.

SPONGES.

These are interesting, not only on their own account, but as often forming the habitats of other marine animals, (acasta, for example.) For this reason, the sponge should not be taken from its base roughly, and should never be squeezed to get out the water till it is ascertained that there are no shells or crustacea in it.

CIRRHIPEDA (BARNACLES).

Keep a bright look out for every floating piece of wood, or even for net-corks which have gone adrift; for on them you will be likely to find not only cirrhipeds but small crustacea, and the ovaria of marine animals. Examine also rocks near the shore, crabs, lobsters, &c.

CONCHIFERA (BIVALVES, &c.)

Carefully inspect rocks, submarine clay-banks, piles, stones, and indurated sand, for pholades, lithodomi, and other boring species. If you find, as you may do, some of these perforators in the ruins of an ancient temple, or of any ancient works of art, the interest of the specimens increases ten-fold. In such cases, mark the situation, and how far the perforations occur from the surface of the sea, either above or below.

Dig in sand-banks, and you will often be rewarded by finding many bivalves which harbour therein, such as solens, cardia, &c. &c. If you happen to be in a place where the inhabitants dive, they will often bring up a good shell. Look for spondylus and chama among coral banks.

MOLLUSCA.

A superficial towing-net, another so constructed as to be kept a fathom or two below the surface, and the deep-sea trawl, are the principal agents for capturing these animals. When the tide is at the lowest, wade among the rocks and pools near the shore, search under overhanging ledges of rock as far as your arms can reach, and turn over all loose stones and growing sea-weeds. In these expeditions you should wear shoes and stockings to guard your feet from the spines of echini, and the back fins of weevers or sting-fishes, and your hands should be protected by gloves against the attacks of any crab which may chance to resent your trespass, while groping too near his hole, and the stings of any medusæ (sea-nettles) which may be sticking to the rocks.

In detaching chitons and patellæ (limpets) you will find the surgeon's spatula a most admirable assistant. The chitons should be preserved flat, by being suffered to die under pressure between two boards. Haliotides (sea-ears) may be removed from the rocks to which they adhere, by throwing a little warm water over them, when rougher modes would be of no avail without injuring the shell.

Turn over rolled madrepores, stones, and fragments of rock, for cyprææ (cowries) and you will be often rewarded by finding them, as well as other species.

Be very careful in preserving the soft parts of the genera argonauta, carinaria, and nautilus, together with the shells. Numbers of testacea are generally to be found about coral reefs.

RADIATA, (STAR-FISHES, &c.)

These will be found both afloat and lying ashore, and should be examined for parasites, such as stilifer. The recent pentacrinus, *especially with its base*, is a great desideratum: Species have been found, both in tropical and European seas, (Guadaloupe and Cork, for instance.) Echini and Spatangi (sea-urchins and sea-eggs) are generally to be found near the shore: carefully preserve them with the spines on.

CRUSTACEA (CRABS, LOBSTERS, &c.)

Rocky coasts are the localities where these animals most abound. Many of the species may be caught in the pools left by the retiring tide, especially if they be fringed with marine plants. Many small species float upon the ocean.

GENERAL DIRECTIONS.

Keep the towing-nets overboard whenever you can.

Never heave your anchor without personally inspecting it as soon as it arrives at the surface, especially if your anchorage be mud. The finest shells have been lifted on the flukes of anchors. Examine the cable also.

Inspect the arming of the lead, and tell the men to look out for any thing that may be sticking to the lead itself, or to the lead-line. A fine new species of mitra (*mitra zonata*, described by Captain F. Marryat, R.N., in the Linnean Trans.) was taken up in very deep water, near the port of Nice, in the Mediterranean, adhering to a sounding lead.

Look out for floating masses of sea-weed, (*sargasso* more especially,) and examine them well; and if it should be your fortune to fall in with one of those tangled natural rafts, which sometimes are carried adrift from great rivers, inspect it as minutely as you can, and note the animals, plants, and seeds, which it may be transporting to colonize some newly-formed island.

When in soundings, dredge perseveringly, the deeper the better. The finest shells have been thus obtained.

Overhaul the fuci in submarine caves and on rocks near the surface; you will often be rewarded by finding cirrhipeds, molluscs, conchifers, and crabs.

Examine any stones which you can lift from the bottom of clear coves; they will often be crowned with corallines, sponges, and marine plants, and studded with shells.

Whenever you obtain a new species, or one whose habits are not known, place it in sea-water, and note them: if possible, make a drawing of the animal or plant.

N.B. Change the sea-water in which marine animals are confined very often: it speedily becomes unfit for respiration. Note the time, depth of water, temperature, and circumstances, attending each capture.

MEMORANDA.

Ascertain, by placing in the sea clean planks of wood, the rate of growth of the *teredo navalis*, and of the cirrhipeda; together with the ravages made by the former in a given time. Serpulæ will probably be found on the board also, and perhaps other shells. Repeat this experiment whenever you have an opportunity, and in different localities and climates. Some of the planks may be painted, others pitched, and others studded here and there with copper or composition nails.

Whenever you catch a turtle, look out for *coronula testudinaria*. Don't scrape the specimens off, but take out the plate of shell on which they are fixed, and preserve the whole.

If you fall in with a dead whale, look him over for *coronula*, *tubicinella*, &c., and preserve them as they are found, in the skin and blubber of the animal: don't extract them.

Direct the stomachs of those fishes and birds which are killed during the voyage, to be examined; not only for the purpose of noting their food, but for the chance of finding undigested shells, &c., and in search of *entozoa*, or intestinal worms. The external parts of fishes should be examined for lernææ and other parasites, which should be preserved *in situ*, and the feathers of birds for parasitic insects and any ova of fish or testacea which may adhere to the plumage.

Pay particular attention to the appearances of birds, as well as to the direction whence they seem to come, with a view to the elucidation of their migration and geographical distribution.

When on shore in search of terrestrial *mollusca*, (especially in the woods,) be not content with a close examination of the trunks and stems of trees and plants, and of their leaves: but turn up any decayed vegetable matter, especially in moist places; dig into the earth, especially about the roots of trees, and under bushes and shrubs; turn over stones; pull up herbaceous plants, and examine their roots; and, if you happen to have with you one or two of your boat's crew with handspikes, heave over fallen trunks.

Preserve all ova and note the height above the level of the sea at which the specimens are taken

Never pass a boggy place, especially where a small streamlet oozes forth, without overhauling the rushes and other plants there growing, for fresh water *testacea*. If you keep a bright look out at such places in the proper season, you will find the ova of such *testacea* adhering to living and dead stems of plants, leaves, &c.

In collecting insects, observe the plants on which you catch them, especially if they be feeding thereon. Cocoons, with pupæ and larvæ, should be taken whenever opportunity offers. Some of these may be bred, others preserved in spirits, and others opened carefully, and stuffed with a little cotton, being first anointed in the inside with some of the arseniate soap. You should take with you an insect-net for *Lepidoptera* (butterflies), &c. The larvæ, if properly stuffed, will keep their colours very fairly; while those preserved in spirits soon fade so utterly, as to be entirely colourless. The same remark applies in a great measure to fishes.

When you preserve any animal entire in spirit, you should puncture it, especially about the thorax and abdomen, if it be a vertebrated animal—and through the mantle, or other investing membrane, if it be a mollusc, or any analogous aquatic—in order that the spirit may penetrate to the viscera, which are often lost to the comparative anatomist, for want of this precaution.

Observations on the habits of animals, however common they may be, are always interesting, and not unfrequently throw great light on their history. Keep a book, which you may call your Natural History Log, and enter therein all remarks while the impression is new, and, if possible, with the subjects before you.

W. I. B.

VI.—THE PORT OF GRIMSBY.

The Port of Grimsby, in the county of Lincoln, formerly ranked among the first in the north of England.* The haven of this ancient place in the river Humber is situated rather more than seven miles from the mouth of that river, in a western direction from the Spurn Lights, and possesses great facility of approach from the sea. Although there was no bar to be crossed, nor any shifting sands to be encountered by vessels, the haven of Grimsby became gradually filled up by those slow, but certain changes, which nature is continually working, and for many years had been nearly choked up. The advantages of its situation, however, were such as to induce a number of persons to unite themselves into a body, with the view of restoring it, and improving on its former condition; and they were accordingly incorporated under the name of 'The Grimsby Haven Company.' A plentiful supply of back water was immediately taken advantage of, and a wet dock constructed, with flood-gates and sluices, besides

* It is recorded, that Grimsby furnished King Edward the Third with eleven ships and one hundred and seventy-one mariners, to carry on a war with the French; but that soon afterwards it fell into great decay and poverty.

various other buildings appertaining to the proposed establishment, which cost the company the sum of £80,000. The lock within the haven is very capacious, being about 150 feet in length. It is about a quarter of a mile distant from the Humber, and has a depth of 12 feet water at the lowest neap tides; but with ordinary springs the depth is 20 feet, and with high springs it is 23 feet. A depth of 18 feet water is penned up in a part of the lock, and 14 feet at the extremities by the sides of the town. The whole excavation being about 18 acres, and affording ample room for 250 ships to load and discharge, besides a sufficient space for passing and repassing. In addition to the wet dock is a dry one, besides a building yard of considerable extent. There are also various private docks, which have been excavated for the purpose of bonding timber afloat, besides yards and sheds for bonding goods of various descriptions;* and in addition to the peculiar benefits conferred by various acts of the legislature on the port of Grimsby, the Commissioners of His Majesty's Customs have approved of it as a *Bonding Port*, and granted the privilege to several merchants and importers. Whether goods be imported with the view of being deposited in bond, or for sale, or to be disposed of either in the country, or to be sent abroad, the port of Grimsby affords great advantages, arising from its proximity to the sea, and its extensive water communication throughout the country by means of the Trent, the Don, the Aire, the Calder, the Ouse, and other rivers; in addition to which the freightage is the same as from the port of Hull. Grimsby holds out other advantages for merchant ships; for while the cost of bonding and transferring goods is not greater than at Hull, a river navigation of seventeen miles, and thereby two-thirds the expense of pilotage, is saved. If a deposit, without payment of duty be desired, the charge for any stated time is less than at any other port. This difference of charge, and the great attention to the general despatch of business, has already induced ship-owners to receive eighteen pence per load less freight on timber from Memel than if consigned to be discharged further up the Humber. Corporation dues are not demanded at the port of Grimsby, and the charge for wharfage, by act of parliament, is not allowed to exceed one-half of that taken in the port of London. The easy access to Grimsby may be readily seen by a reference to the admirable Survey of the Humber, by Captain Hewett, R.N.; and should a vessel bound there arrive during neap tides, she will find safe anchorage till the following springs in Grimsby roads. These are considerable advantages in favour of restoring Grimsby to its former celebrity, and to enable it to keep pace with the present advanced condition of our small harbours in comparison with that period. It may also be observed, that the same wind that will carry a vessel from the river Humber will also admit of her leaving this port.

VII.—TURKISH OFFICERS:—*Advancement in the Arts and Sciences.*

It is well known that the Mahometans have for some time been endeavouring to introduce into their country a knowledge of the arts and sciences of Europe, which, in days of stricter discipline, the followers of the prophet would not have condescended to do. One of the means employed to attain so desirable an object, was to send some young Turks over to England for instruction, that they

* The goods usually bonded are all kinds of wood, mahogany, and staves; brimstone, cork, iron in bars, hemp undressed, tow, tar, pitch, rosin, turpentine, tallow, kelp, spermaceti, oil, head matter, trall oil, and all other fish oils; blubber and whale fins of British fishing; Indian deer skins, half dressed or shaved, and other skins and furs not tanned, or in any way dressed, hides, &c.

might afterwards impart the knowledge they would obtain among their countrymen. Three young men, natives of Constantinople, were accordingly selected by Ibrahim Pacha, being officers of his staff, whose talents and character were such as to render them proper persons to undertake so arduous a task.

These Turkish gentlemen, who were from twenty-two to twenty-five years of age, arrived in this country about the fall of 1826. The first in rank was *Selim, Aga*, the sword-bearer to Ibrahim Pacha; the next *Omer, Effendi*, cupbearer to the Pacha; and the third, *Mohammed Effendi*, his inkstand-bearer, which title is generally understood to mean his secretary. Aga and Effendi are titles of rank, the latter being in grade next to an Aga, and the former ranking next to a Bey. Some time previous to the arrival of these gentlemen in England, another named Ali, who was also an Effendi, had been sent here by the Pacha.

On arriving in this country, some time was employed in acquiring a sufficient knowledge of the English language, to enable them to study any particular branch of science in it. Therefore, in the manner of children, they went through the elementary parts of our language, being regularly taught to spell and write, and afterwards ciphering, geography, and drawing, and such other useful accomplishments as might forward them in the particular study each one was to pursue. After a very short period, they spoke English remarkably well, and with great facility, and a very correct accent. Having completed this elementary education, and rendered themselves capable of commencing the undertakings for which they were designed, in the winter of 1827-8 each one proceeded to fulfil the peculiar duty assigned to him. One commenced his studies at the Royal Arsenal at Woolwich; another was admitted into Portsmouth Dock-yard; and another went on board a man-of-war, to learn the theory and practice of navigation.

Selim, Aga, being destined hereafter to fill one of the higher ranks in the army of his country, proceeded to Woolwich, where, at the house of an eminent professor, he pursues his studies in engineering in all its branches as relates to the army.

The study of diplomacy was entrusted to Omer, Effendi, a young man of no ordinary capacities. He has attended lectures; first, at the London University, with the best masters that could be had, and with great success is pursuing his studies with one of the professors of the Universities of Oxford or Cambridge.

Mohammed, Effendi, was placed in Portsmouth Dock-yard, and performs the duty of a shipwright, in order practically to acquire the art of ship building, while his evenings are spent in studying the theory of it. The Pacha, however, will not merely provide himself with a practical and scientific ship builder, but, at the same time, will secure an able and efficient navigator in the person of Ali, Effendi, who was placed on board His Majesty's Ship Shannon.

This person went in the Shannon to the West Indies, as a supernumerary Lieutenant. He messes with the Lieutenants, wears the same uniform, and is subject in every respect to the discipline of a man-of-war, by keeping watch, &c.

VII.—MOUTHS OF THE RIVER PERNAIBAÓ.

Of the various parts of the South American coast, there is none so little known as the northern coast of Brazil; and nautical men still complain of the lamentable incorrectness of all our charts of this most dangerous part of the shores of that extensive empire, from the province of Ceara to the island of Maranhão. Baron Roussin's survey, which, taken in its *ensemble*, may justly be considered as the most minutely elaborate that has appeared, is, nevertheless, in some parts inferior to many of the old Portuguese and Spanish charts, which are now become extremely rare. Their superiority over our surveys is, perhaps, to be attributed to the circumstance, that the labours of their hydrographers were carried on by land; for the extreme flatness, and the uniform configuration of this part of the coast, which is, moreover, for nine months in the year enveloped in a thick haze, added to the heavy sea and strong westerly current which constantly prevails, must of necessity render correct surveys a labour of much difficulty. In fact, so uniform is the appearance of the coast, that the oldest pilots frequently mistake one point for another.

That part of the sea-coast of the province of Piahy, extending from the Barra de Iguarassu, the easternmost branch of the Rio de Pernaibaó, to the Barra de Tutoia, its westernmost, is incorrectly laid down in all of our charts. The distance between these two mouths is about thirty-six miles, in which extent the Rio de Pernaibaó discharges itself by four others. Two of the mouths of this river, namely, those of Iguarassu and the Barra Velha, are only laid down in the charts, while the position of the four others is unknown. Now *this harbour of Tutoia is the only one along the extensive line of coast, from Bahia de Todos os Santos to the River Amazons, that admits of the bar being crossed at all times of the moon, by vessels drawing from 14 to 15 feet water.* Notwithstanding this, the position of the harbour of Tutoia is not only incorrectly laid down in some charts, but in many, which are tolerably correct in other respects, Tutoia is not even mentioned.

In 1825, we sailed from Liverpool in a vessel bound to Pernaibaó. After thirty-five days' passage, we came to an anchor off the bar of Iguarassu, the position of which, as well as that of the Barra Velha, was accurately enough laid down on the captain's charts. On proceeding to the town, we were told by the Governor of the province, that both these two bars had for many years become unnavigable. He assured us, that in consequence of

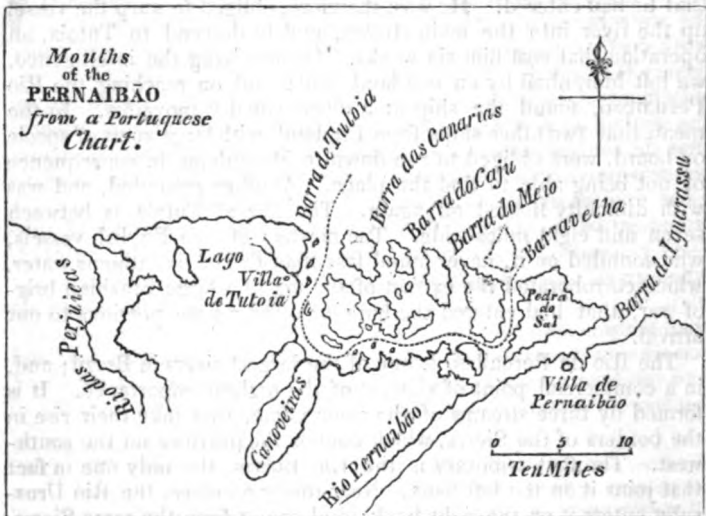
the formation of two sand-banks immediately to leeward of them, our vessel must proceed to Tutoia, the very existence of which was unknown to the captain, although he had been many years engaged in the Brazil trade. His excellency the Governor furnished us with a pilot, and a chart of the coast; but in consequence of the ship breaking her windlass, and losing her anchors and cables at Iguarassu, we were obliged to run down to Maranham.

About three weeks after we had arrived there, a letter from the Governor informed us of the arrival of another ship from England. The captain, it appeared, made the Barra Velha at the full of the moon, and, finding plenty of water on the bar, he, without hesitation, entered the river. But it was impossible, from the existence of the sand-bank before-mentioned, to get out by the same channel that he had entered. He was, therefore, obliged to warp the vessel up the river into the main stream, and to descend to Tutoia, an operation that cost him six weeks. On receiving the intelligence, we left Maranhão by an overland rout; and on reaching the Rio Pernaíba, found the ship at a place called Canoveiros. In the mean time two other ships from England, with large sums of specie on board, were obliged to run down to Maranham, in consequence of not being able to find the place. Another grounded, and was with difficulty floated off again. The bar of Tutoia is between seven and eight miles wide. The masters of two English vessels, who sounded on it, never found less than five or six fathoms water, which corroborated the extract of the log of a large Brazilian brig-of-war, that had entered the harbour a short time previous to our arrival.

The Rio de Pernaíba is one of the largest rivers in Brazil; and, in a commercial point of view, is of the highest importance. It is formed by three streams of the same name, that take their rise in the borders of the Sierra, which bounds the province on the south-west. The first tributary is the Rio Bolsas, the only one in fact that joins it on the left bank. Near this confluence, the Rio Urusuhy enters it on the right bank, and comes from the same Sierra. At twenty-eight leagues lower down, the Gurguea, having taken its rise in the Sierra of the same name, and formed in the early part of its course the lake Pernagoa, is incorporated with it. At thirty-six leagues further, it receives the Caninde, which flows from the Sierra dos Irmaos to the south-east, and at six more the Poty falls into it. After forty-four leagues of its course, the Rio Longa joins it; a little below which a small arm issues from the Pernaíba to the east, and forms a large lake, called *Encantada*, the island between it and the river being about five miles in length. At seven leagues further down, this river divides itself into two rather unequal currents, and ultimately enters the ocean by six branches, separated by five islands, which are never overflowed, and afford excellent pasturage for cattle. The eastern branch is called the

Iguarassu, and, continuing to the westward, the following is the order in which the rest succeed each other: the Barra Velha, the Barra do Meio, the Barra do Caju, the Barra das Canarias, and the Tutoia, by which latter the small river of the same name is discharged. The distance of the bar from the Villa do Pernaibaõ, from the serpentine course of the river, is about eighty miles.

By means of the Rio Pernaibaõ a communication might be opened with the Rio Tocantins, and a much shorter outlet obtained than by the navigation of that river into the Amazon, or the overland route to Rio de Janeiro, for the valuable productions of the rich province of Goyaz. In the event of a war, our West India colonies and fleets on that station might be supplied with cattle much easier from Pernaibaõ than from Peru, or from the Spanish Main.



The accompanying plan is taken from one drawn some years ago, and adapted to an English scale, by a Portuguese colonel of engineers. It very correctly delineates the configuration of the coast and the mouths of the Rio de Pernaibaõ.

VIII.—*Historical and Descriptive Account of British India, from the most remote period to the present Time; with a Map and Engravings, &c. &c. Vol. II. and III.*

(Continued from p. 190.)

OF the first volume of the History of British India, we have already spoken in favourable terms; indeed, a glance at the names of the talented persons to whom so important a task has

been intrusted, was sufficient to assure us that the work would be well done. The second volume concludes the historical account of that country, and the reading world have already been enabled to judge of its merits. A description of the natural history of India in all its various branches has been very properly reserved for the third volume, to which the authors have added a variety of information concerning the knowledge of the Hindoos, and remarks on the passage between that country and England, of a highly interesting nature.

It has been erroneously stated by Mr. Le Beck, in his account of the pearl fishery in the Gulf of Manar, that some divers have occasionally remained under water during a lapse of time amounting to seven minutes, and we find it repeated on his authority in the work before us. Cordiner and Bertolaccio have each written a work on Ceylon, in the neighbourhood of which island the Manar fishery is situated. If they have not corrected this egregious misstatement of Le Beck, they ought to have done so, as we know on the authority of a fifteen years' superintendence of that fishery, that the longest time the most experienced diver can remain under water is only *fifty-five seconds*. This lapse of time is almost sufficient to destroy life, without extending it to seven minutes. A statement of this nature, however, among the vast number of subjects embraced in the work before us, although better omitted, when given on such authority, does in no way affect the character of it, and, for the general reader, nothing can be more desirable than the present volumes. We shall extract for our own readers the remarks on the proposed steam communication between England and the East Indies by the Red Sea, a subject which at all times, but more particularly the present, must be fraught with interest :

“ A communication with India by means of steam has lately occupied the attention, not only of individuals, but of the government in India. The different passages to India, round the Cape of Good Hope, by steamers, have been all unsuccessful as to *time*; and it may fairly be doubted whether steam will ever compete with sails on this long passage. The Honourable Company's ship Thomas Coutts made the passage to Bombay in eighty-four days,—the Atlas in eighty-three,—and ninety days is not considered as any thing very extraordinary by some of the free-traders, such as the Roxburgh Castle and others. Mr. Waghorn, an enterprising officer of the Bengal pilot service, is the principal advocate and projector of the passage by steam round the Cape. The route by the Red Sea having been lately traversed with complete success by Sir John Malcolm, our observations shall be confined to this route. The present Pacha of Egypt is highly favourable to the establishment of steam-packets at Alexandria, and would afford every facility on the land journey, if this great object is undertaken by government. The following observations (in substance) were most kindly supplied by Sir John Malcolm:—He left Bombay on the 5th of December 1830 for England, in the Honourable Company's steamer Hugh Lindsay. Arrived at Macula on the 14th of December, and remained there three days to take in coals, water, and refreshments. Macula is situated on the coast of Arabia, at the mouth of the Red Sea, where there is good anchorage and a safe harbour. Arrived at Juddah on the 22d of De-

ember, and remained there two days to take in coals, water, &c. Arrived a Cosseir in Egypt on the 27th of December;—having been at anchor nearly six days, and actually steaming from Bombay to Cosseir in sixteen days and twelve hours. If Sir John had gone to Suez instead of Cosseir, he is of opinion he would certainly have reached that place on the 29th, and might easily have arrived at Alexandria on the 2d or 3d of January; but he went to Cosseir to meet Lord Clare, the new governor of Bombay, who was appointed to succeed him. Sir John passed twenty-seven days in Egypt ‘seeing the lions.’ He then went to Malta in a frigate, which occupied eleven days; a steamer could accomplish it with ease in seven. He sailed from Malta in the Meteor steamer on 4th February 1831; arrived at Gibraltar on 12th February; remained there two days to take in coals, water, &c., and sailed on the 14th. Arrived at Falmouth on 25th February, having had only three days’ fair wind between Malta and England.

“Sir John is of opinion, that in future two days may be saved in the passage from Bombay up the Red Sea by improving the power of the steamer, and that despatches may be carried from Bombay to Alexandria in twenty-four days, for nine months of the year; during the other three months the progress of the steamers will be impeded by the violence of the northerly winds. Sir John recommends the route by Cosseir to Alexandria for passengers, in preference to that by Suez, the latter being much exposed to inundation and other inconveniences. As to the relative advantages or disadvantages of building, it is executed equally well and stronger in Bombay than England. Teak is better than oak; and the Hugh Lindsay was built so correct to the model, that her large engines (two of eighty-horse power) fitted on to almost a hair’s breadth. No change has been made in this vessel, except cutting her paddle-boards six inches, which, tried on the second voyage, has been found an improvement, owing perhaps to the depth of water she drew when overloaded with ten days’ coal, which is three if not four days’ more than this fine man-of-war steamer was built to carry. The Hugh Lindsay steamed from Bombay to Cosseir, a distance of 2700 miles, in sixteen days and twelve hours, which is an average of seven knots an hour. The passage from Bombay to Cosseir will, from 1st September to 1st June, be always made in twenty-one days, including the taking in of coals; and to Suez in twenty-three days. Mr. Barker, his majesty’s consul-general in Egypt, thinks that, with a relay of dromedaries, packets might be sent by the Desert from Cosseir to Alexandria in six or seven days; and this would prevent the possibility of stoppage from the inundation of the Nile. It would also save four or five days’ coal in going to Suez and returning, and the expense and trouble of depositing and shipping it at a place where vessels must anchor five miles from the shore. At Cosseir they lie close to the town, and have in all weather safe anchorage, besides plentiful supplies, good water, and a land-carriage for packets and passengers. With respect to the latter, few will go this route that do not desire to see Upper Egypt; this they could not do without much trouble and expense if they went to Suez.

“With regard to passengers, they should not be counted upon as ever likely to remunerate government for the expense of steam-vessels between Bombay and Egypt. These vessels should be built as packets. There cannot be a better model than the Meteor, or the Admiralty yachts, which are about 300 tons, with round sterns, and the cabins lighted by sky-lights. The vessels for the Red Sea might have about two feet beam more than the Meteor, and two sixty, instead of two fifty-horse power engines. This would greatly increase the speed. They might carry eight or ten passengers with very limited accommodation, and they could be provided with a plain table by the commander of the vessel for half the price charged (the same as his majesty’s steamers to Malta), the other half going in part payment of coals. No other

plan will succeed. As to passengers, there is not, and will not be for many years, any intercourse between India and England by this route, that will make passengers profitable; and no extra expense is warrantable on this account. The expense of coals in the *Meteor* was eight chaldrons per diem; but this last voyage it was diminished to seven, from having the fiery-vein coal from Wales. With this coal, such a vessel as before mentioned, with sixty-horse power, would not require beyond nine chaldrons of coals per diem; and if either Mr. Morgan's plan is approved of, or the experiment of cylindrical boilers and expansion engines, now trying by Captain King at Falmouth under orders of the Admiralty, succeeds, which is probable, the consumption of coal will be decreased one-third. Lord William Bentinck, Sir Charles Malcolm, and Captain Wilson, commander of the *Hugh Lindsay*, concur in the opinion of the size of the vessels for the Red Sea. Lieutenant Symons was also consulted (who has for some time commanded the *Meteor*), and Captain King.

"To give success to this plan, the execution of every part of it should be left to the government of Bombay, and certainly the vessels should in all, except the engines, be built and equipped in India. It is farther quite essential for this and general purposes, that they should be officered and manned from the Indian navy. Experienced and steady lieutenants or masters will command them, and these should not only possess a complete knowledge of the engines and steam-navigation, but the most intelligent midshipmen of the Indian navy should be instructed in that science; while English and half-caste boys should be educated, as they now are, to supply the place of engineers from England, who are a great expense and trouble.

"With regard to coals, government has not yet been successful in finding any in Cutch. The death of Mr. Maculloch, who was a good geologist, has for a period stopt the prosecution of the search in quarters where the coal might have proved less superficial than where first discovered. Doctor Christie, who has gone to the continent with the intention of proceeding to his station at Madras, by Bombay, has received the sanction of the Court of Directors to employ himself two years in scientific pursuits, and is stated by competent judges to be an able geologist. He has promised to visit Cutch; but it would be useful to desire that if he is so inclined he should have every reasonable aid, for the object is of importance. Until coals are found on the western side of India, they must be imported from England; but they may be brought as ballast at a very moderate rate, and, with all wastage, may, it is supposed, be deposited at Ports in the Red Sea cheaper than by the route of Egypt. Vessels going at certain seasons through the Strait of Madagascar would lose little by depositing them at Mocha;—but these are points of mere calculation. The authorities in England should be cautious in attending to plans and maps as to depôts and other matters connected with this part of the subject. Those that give them only know the general features of the question. For instance, Socotra appears a most desirable place for a depôt; but it has yet no supplies for a vessel, nor is there any town to aid in loading or unloading cargoes of coals. These are for the present great objections. The government of Bombay will early discover what is best, both for economy and expedition; and a well-qualified young officer of the Indian navy, of whom many speak Arabic, should remain at Cosseir as an agent to secure quick lading and depositing, and to be in communication with the consul-general, to accelerate the despatches to Alexandria.

"By this route and mode, packets from Bombay will certainly be delivered for nine months of the year at Alexandria in twenty-eight days. The passage from Malta to that place will not average more than seven or eight days for a steamer, and one of a small class kept by his Majesty's government would be sufficient, if no enterprising individual undertakes it, and there is so much

traffic that the passengers would pay well. The Pacha of Egypt neither is nor will be inimical to this line of communication; on the contrary, he will rejoice in this and every opportunity of meeting the wishes of a country on whose friendship and good feeling he has become from his condition so very dependent. The attention of the government of Bombay may be so far directed to the communication by Bussorah or the Euphrates, as to send a minute report on the subject; and should it at any period prove more eligible than by the Red Sea, the same vessels which answer for the one line will perfectly suit the other; and this, therefore, can be no ground of delay to the immediate establishment of so important an object as a steam-communication with India. The following extract, from a minute by Sir John Malcolm, will farther show his opinion on the subject. These observations are highly valuable, proceeding as they do from the comprehensive and intelligent mind of Sir John Malcolm, who can view the subject in all its bearings with the eye of practical experience:—

“ I have on several occasions stated the great importance of having an establishment of steam-vessels attached to the Indian navy, both for purposes of war and keeping up the communication with Europe. There is yet only one steamer in this service, the *Hugh Lindsay*; there cannot be a finer vessel for the purposes for which she was built,—that of an armed steamer. She has two engines of eighty-horse power each, and can carry eight guns, with coal for six or seven days: goes very fast, and against any sea. This vessel, though too expensive and too large to take packets to Suez, has been used for that purpose, and performed the voyage, at a season of the year not the most favourable, in twenty-one days’ steaming. She actually steamed at as high a pressure as could be applied, the first *stage*, to Aden, 1640 miles, in ten days and nineteen hours, and that with a contrary wind. She went, when deeply laden with coal, five and a half knots, but increased her rate to full nine knots when lightened.

“ It is the opinion of the superintendent of the Indian navy, and has been transmitted as such to the Honourable the Court of Directors, that a class of small vessels, like those employed in packet-service from Milford Haven to Ireland, would be the best to keep up the communication with Europe by the Red Sea. This is also, I observe, from his minute upon the subject, the opinion of the governor-general; and Captain Wilson, the commander of the *Hugh Lindsay*, on whose judgment, from his full knowledge of the seas, and experience of navigation by steam, I would implicitly rely, thinks that a vessel of 270 tons, built more with a view to the capacity of stowing coal than very rapid steaming, would make Suez in two stages, taking in coals only at Mocha, where, if she did not draw more than ten feet, she could be at all seasons in smooth water, and with security against every wind. This voyage would require that she should carry thirteen days’ coals, as it is a distance of 1780 miles, and cannot be expected to be performed in less than eleven or twelve days.

“ If this quantity of coal cannot be carried, the first stage must be *Macula*, and the second *Judda*, as at present these are both excellent ports for shipping coals, as a vessel can lie close to the shore; but having three stages instead of two would cause a delay of at least two days; and with two, Captain Wilson calculates the voyage from Bombay to Suez cannot be performed to a certainty under twenty-five days. But it appears to me, if one of three vessels was kept at Mocha, and her furnace lighted as another hove in sight, this voyage would be reduced to three weeks, and ample opportunity given to the steamers to put in order or repair any slight injury to the machinery, as well as to procure supplies; and with the establishment of packets, the communication might be kept up by vessels sailing every five or six weeks from Bombay, and from Suez

nine months of the year. In June, July, and August, a steamer would easily come from the Red Sea; but could not return against the violence of the south-west monsoon. There would be a great advantage in keeping a small steamer at Mocha, from the power the Indian government would possess of sending on emergency a sailing vessel or boat during five months of the year, which, having a fair wind, would be certain of that passage in fifteen or sixteen days. With this number of packets, and another armed steamer, carrying four or six guns, and not drawing more than eight feet water, Bombay would be complete in this essential branch of naval establishment. Besides the keeping up a rapid communication with Europe by the Red Sea, that by the Persian Gulf would be improved, and we should, beyond ordinary service and putting down piracy, be prepared to give efficient aid in every naval service in India. Nor is it speculative to suppose that emergencies may arise on which the ready application of this powerful arm of our force on the Indus or the Euphrates might be of the most essential service to the general interests of the empire.

“To secure all these objects, it is indispensable, in my opinion, that in whatever way steamers are employed in this quarter, they should be exclusively navigated by the Indian navy; for it is of much importance that a scientific knowledge of the engines and their management should be generally diffused throughout this service. We must not omit the opportunity to form men capable of performing and directing all the duties which belong to such vessels. With the able and intelligent officers this navy can boast of, and the number of fine youths it contains, I cannot have a doubt but they will easily attain a proficiency in this line of service, that may prove of much consequence to the general interest; and I must farther expect, that through the instruction given to European and East Indian boys at the Mint and in the steamers, we shall be early independent of those engineers now sent from England at such expense, and who have proved themselves in several cases so unworthy of the liberal treatment and confidence placed in them.”

“The complete success which has attended the establishment of steam vessels on our shores has led to exaggerated expectations regarding the proposed steam-communication with India; and although great advantages must immediately accrue from the very commencement, it would be unwise to overlook the obstacles which really exist. The first and greatest is the plague, which, being of periodical as well as accidental recurrence, causes a rigorous adherence to the quarantine laws in the Mediterranean. The following extract of a letter from Sir John Malcolm to Sir George Don, governor of Gibraltar, refers to this subject:—

“I would not trouble your excellency respecting the quarantine on the steamer, were it not a question connected with the important object of establishing rapid communication with India, the success of which depends upon as few impediments as possible being made to the delivery of packets, and the arrival in England of those charged with them. Though it would be an accommodation to me personally to have pratique to-morrow before we sail, I could not presume to address your excellency on any ground but that of the public service. I am more anxious, as I know our first statesmen are desirous to promote this communication between India and England, and some who are opposed may find in any impediments that occur a ground of argument against its establishment, from the opinion they entertain upon the subject.”

“The plague season at Alexandria commences about the 20th of February, and ends about the 20th of June. The winds in the Red Sea are periodical. About the latter end of May usually the northerly winds commence to blow down the whole Red Sea, and continue till October. From October to May the southerly winds prevail in the *southern* latitude of the Red Sea only. In the northern latitudes the northerly winds prevail during the whole year. The

limits of the two opposite winds, or the region of change, may be placed between the 18° and 20° of north latitude. In June, July, and August, the northerly winds are strongest near Suez. The end of June and beginning of July is the proper season of arrival at Alexandria. The northerly winds do not commence in the southerly part of the Red Sea till the end of May, and continue till October.

“ It must not be overlooked, that the existing post-office regulations are inimical to private enterprise as connected with the establishment of a steam communication to India by the Red Sea. By law, all vessels to India are compelled to take letter-bags *free*; therefore no remuneration can be derived from the conveyance of letters.

“ Mr. Waghorn’s remarks on the navigation of the Nile are as follows:— ‘ There is no river in the world, perhaps, that baffles a just description on this head more than the Nile: its depth at Rosetta is sometimes ten feet. A northerly gale blowing in the Mediterranean would completely close this up, and even raise a sand-bank in its place, stopping the whole navigation between Alexandria, by not allowing even a passage for the *jerms* or corn-boats to arrive there. This will continue till the torrents gather, in consequence of the sudden check thus experienced, and again open the same passage by the strength of their pressure. Again, there are certain parts in the river, one in particular at Shallakan, where shoals constantly exist; the depth of water consequently depends upon the strength of the current at the time. It was December when I passed, and the depth of water was only two feet six inches at places: there are many others where the channel is only four feet, with deep holes from thirty to forty. Steam-navigation on the Nile could not admit of comfort, because the small class of the vessel would not allow it; but it would be perfectly useless, as the distance by water doubles that of the land, and from the canal of Alexandria only being navigable three months out of twelve; and if such a casualty took place as the gale before mentioned, there would be no water-communication whatever till the obstacle was removed by the river’s current washing it away.’

“ The Nile runs ebb the whole year. Mr. Waghorn recommends the following route:—From London to Ancona by land in nine days; thence to Alexandria by steam in seven days; to Suez in five days; from Suez to Bombay a steamer will generally accomplish the passage in twenty-three days, including the stoppage at Mocha for supplies.

“ Before quitting the subject of steam, it may be as well to mention that the Bengal government have adopted a plan for establishing steam-tugs for towing passengers’ baggage, and cargo boats on the Ganges. Many persons undergo more fatigue, and are sometimes longer in a voyage from Calcutta to the upper provinces than on that from England.”

We recommend this work to those of our cloth who would wish to trace in it the history of the places they might be destined to visit, but it possesses many features besides, which must make it desirable to others going to that country. The whole particulars of the East India ships with the routine usually observed on board of them, remarks on the passage, and statements of all the expenses attending, are subjects of every-day occurrence, and to those who are in search of it, will afford a vast deal of useful information which they can only obtain otherwise by tedious inquiry.

WORKS OF NAUTICAL AND GEOGRAPHICAL
SCIENCE, AND ART.

REPORT OF THE ASTRONOMICAL SOCIETY.

The following Report, extracted from the Transactions of the Royal Astronomical Society of London, was made in consideration of a Letter addressed to the Council by the Right Hon. The Lords Commissioners of the Admiralty, relative to the Improvement of the Nautical Almanac.

1. The attention of the Committee was, in the first instance, directed to a subject of general importance, as affecting almost all the results in the Nautical Almanac; viz., whether the quantities therein inserted should in future be given for apparent time (as heretofore,) or for mean solar time. Considering that the latter is the most convenient not only for every purpose of Astronomy, but also (from the best information they have been able to obtain) for all the purposes of Navigation; at the same time that it is less laborious to the computer, and has already been introduced with good effect into the national Ephemerides of Coimbra and Berlin, the Committee recommend the abolition of the use of apparent time in all the computations of the Nautical Almanac; excepting only the place, &c. of the sun at the time of his transit over the meridian, which must necessarily be computed for the time of *apparent* noon; but which, by the arrangement proposed in the accompanying Specimen (and which the Committee request may be considered as part of this Report), can never be mistaken for his place as computed for *mean* noon. The Committee are aware that in recommending this important change in the mode of reckoning time, in all computations connected with nautical astronomy, it may appear to some persons that a temporary inconvenience may be experienced: they trust, however, that, upon more mature consideration, this will be found not likely to take place. It is true that, when the Nautical Almanac was first formed, *apparent time* was the only mode of reckoning that could be properly introduced; as the seaman had no other method of obtaining his time than by observations of the *sun*; nor any other mode of carrying it on from day to day than by ordinary watches. Other modes, however, are now resorted to for obtaining the time; and the great perfection of chronometers and their extensive use in the sea service have led to the more general use and adoption of *mean time*; which has now become easy and familiar in many of the most common nautical problems, and equally convenient in all. Moreover, the Committee are of opinion that there is a great advantage in assimilating the practical operations in nautical astronomy with those pursued in the observatory; with which in fact they become identified, the moment the navigator commences

the requisite observations on shore in order to verify the rate of his chronometers, or to determine the accurate position of his place. This change has indeed, for many years past, been made in the eclipses of Jupiter's satellites : and, from the necessary use, in many cases, of astronomical problems, must sooner or later be more generally introduced : and no time appears so well adapted for such an alteration as the present, when a general revision of the work is in contemplation. And should this alteration be adopted, the Committee recommend that the words "MEAN TIME" be inserted at the head of every page, where it may be applicable, in order that the seaman may be constantly apprised of the change which has been made.

2. The next point of consideration was of minor importance, and of a less general nature ; viz. the proposal to abolish the use of *signs*, as indicating arcs of 30° in the division of the circle. With the view therefore of preserving uniformity in the arrangement of the values in the Nautical Almanac, and considering it in most cases more convenient in practice, the Committee recommend that the use of signs should be abolished also, and that the degrees should in all cases be reckoned from 0 to 360.

3. The Committee having before them a printed specimen of the monthly arrangements of the articles forming the Nautical Almanac for the year 1833, forwarded to the Council by the Lords Commissioners of the Admiralty, and also having before them a copy of the Nautical Almanac and of the Supplement for the present year (1830), next proceeded to examine and discuss *seriatim* the various parts into which the work is divided : and, having agreed on certain preliminary arrangements, appointed a *Sub-Committee* to examine them more in detail, as well as to examine and digest the various hints and suggestions which had been forwarded to them, not only by members of their own body who were unable to attend the meetings, but likewise by other correspondents, relative to this subject. The *Sub-Committee* having made a report of their labours, it was ordered to be printed ; and a copy of the same having been forwarded to each member of the Committee, a distant day was appointed for their taking the same into consideration : by which means every opportunity and facility have been afforded for the most ample and open discussion of the several points in question. The final result of their deliberations will be seen from the following summary of the alterations and additions proposed and recommended ; and also from the Appendix to this Report, which contains a synoptical view of *all the articles* proposed to be inserted in the Nautical Almanac.

4. And here perhaps it may be proper to remark, that, although, in these discussions, the Committee have constantly kept in view the principal object for which the Nautical Almanac was originally formed, viz., the promotion and advancement of *nautical astro-*

onomy, they have not been unmindful that, by a very slight extension of the computations, and by a few additional articles (of no great expense or labour), the work might be rendered equally useful for all the purposes of *practical astronomy*. For the Committee cannot omit this opportunity of expressing their decided opinion, that it is not by the mere helps with which the seaman is furnished for the purpose of determining the position of his vessel *at sea*, that the full intent and purpose of what is usually called *nautical astronomy* are answered; since this object is a *part* only of that comprehensive and important subject, and may be effected by a very cheap publication, and without the use of very expensive instruments. An equally important and more difficult portion of it consists in the exact determination of the position of various interesting points on the surface of the earth (equally essential and almost solely applied to the purposes of *navigation*),—such as remarkable headlands, ports, and islands; together with the general trending of the sea-coast between well-known harbours,—and which may properly be designated by the name of *nautical geography*: this can only be effectually and properly executed by methods not available on board a ship, and by delicate instruments placed firmly on solid ground. And the observer in such cases requires all the astronomical aid which can be afforded him from the best tables, arranged in the most convenient form for *immediate use*. This was evidently Dr. Maskelyne's view of the subject, when he first proposed the formation of the Nautical Almanac, as appears from his "Explanation and Use of the Articles" annexed to that work: and the propriety and accuracy of his opinion have been confirmed by the repeated wants and demands of those distinguished navigators who have been employed in several recent scientific expeditions. There are moreover many individuals in various parts of the world, attached to the science of astronomy, who, by the encouragement and facilities thus given, render considerable assistance to the improvement of astronomy and geography by their exertions: and neither private nor *national* observatories, on which many thousands are annually expended, can proceed with activity or good effect, unless some aid of this kind is afforded them.

5. Impressed with these considerations, the Committee proceeded to the discussion of the subjects in question. And although in the course of this investigation, some objects of minor importance have presented themselves, the Committee have not thought them unworthy their attention: since they considered it desirable that as perfect an arrangement and disposition as possible of *all* the parts should be effected at one and the same time, not only in order to avoid the frequency of alterations, which must in all cases be attended with inconvenience and disadvantage, but more especially that the work may *at once* appear in its most approved form, and

thus more decidedly mark the epoch of the alterations that have been introduced.

6. To the class of minor subjects above mentioned belong the arrangement of the *calendar*, and the various articles which usually occupy the first page of each month. The Committee will advert more at large to this subject in the sequel; and at present merely observe, that they recommend the abolition of the column entitled "Sundays and other remarkable days:" and a partial suppression, accompanied with a totally new arrangement, of the column entitled "Other phenomena;" in order to make room for more important matter.

7. With respect to the other more essential parts of the almanac (in the order in which they stand) the Committee recommend that the computations of the *Sun's* longitude, right ascension and declination, together with the equation of time, (the three latter computed for *apparent* noon, as well as *mean* noon,) should be extended to one place of decimals further than in the printed specimen for 1833 above alluded to: that the hourly difference in right ascension be added, and that the *hourly* difference in declination and in the equation of time be substituted for the *daily* difference. And they suggest the propriety of having a running correction at the bottom of the page, for converting (from sidereal to mean time) the interval of the time in which the sun's semidiameter passes the meridian. They also recommend an additional column, containing the "Mean solar time of the transit of the first point of Aries," calculated to two places of decimals: together with a column containing the fractional part of a year, for every day in the year, to three places of decimals: as well as the retention of the column containing the days of the year in numerical order from January 1 to December 31. On the other hand, they recommend the suppression of one place of decimals in the sun's semidiameter, as the values would then be sufficiently exact for every purpose required: also the suppression of the time of the rising and setting of the sun and moon, as being for the most part wholly useless to the navigator, and of no essential service to the astronomer.

8. They further recommend that the computations of the *Moon's* longitude, latitude, declination, equatorial horizontal parallax, horizontal semidiameter, age, and time of passing the meridian, be extended to one place of decimals further than in the before-mentioned specimen: and that the time of the moon's perigee and apogee, to the nearest hour, be inserted at the foot of one of the pages. Whilst on the subject of the moon's place, the Committee cannot omit the opportunity of expressing their great approbation of the introduction, by Mr. Pond, of the right ascension and declination of the moon for *every third hour*

into the Nautical Almanac for 1833; a measure which affords accuracy and convenience to the mariner on many occasions. The Committee have had much discussion on the propriety and advantage of extending those places still further to *every hour*; and, considering the very extensive use to which they may be practically applied in various parts of nautical astronomy, they have finally decided to recommend that important addition; as well as a column containing the differences of declination for five minutes, if it can be conveniently introduced.

9. The attention of the Committee was next called to the form in which the positions of the *Planets* are given in the printed specimen above alluded to, which they consider to be too much abridged to be of any essential service either to the astronomer or the navigator. The Committee are aware that the positions of the four principal planets (Venus, Mars, Jupiter, and Saturn) for every day in the year, are annually published in English, and partly at the expense of this government, by the Royal Danish Sea-Chart Office at Copenhagen; together with the distances of those planets from the moon, for every third hour; under the direction of Professor Schumacher. But, notwithstanding the ability with which that work is conducted, the Committee are of opinion that it is not so generally diffused in the navy as its merits deserve; arising probably from its not being sufficiently known. And as there can be no question, at the present day, about its utility and importance to navigation; and as every method ought to be encouraged and promoted that will tend to assist the mariner in determining the position of his vessel at all times, and more especially at a time when the ordinary methods may fail; the Committee recommend that the above articles, computed for mean time, be incorporated with, and form part of the Nautical Almanac: by which arrangement, both the navigator and the astronomer will be furnished with the addition of much valuable and important information, at a much less expense than they can now procure it; and the mariner, (by thus having the means constantly at hand) will be more likely to adopt a practice which cannot fail of being oftentimes of very essential and perhaps vital importance. The Committee however recommend some slight additions, and a few alterations in the arrangement of the articles: the most important of which is the substitution of the *heliocentric* longitude and latitude, for the *geocentric*; with the hourly difference in right ascension and declination of Venus, if it can be conveniently introduced; together with the introduction of the logarithm of the *radius vector* calculated to 7 places of decimals, the mean time of the transit of the planet, to the nearest minute, and the other computations carried to the same extent as in the Berlin Ephemeris. To which should be added the horizontal parallax and *polar* semidiameter

of each planet, calculated to 2 places of decimals, for every 5th day of the year; the ratio of the two diameters (if known) being stated. And the Committee recommend that in the geocentric places of the planets, the effect of aberration should be included.

10. The Committee, at the same time that they recommend this great accession of strength to the purposes of navigation, would think themselves deficient in the duty which they owe to the interests of that science which they are more particularly called upon to protect and advance, if they did not claim from the hands of a liberal and enlightened government, the *same* information with respect to the two other principal planets (Mercury and the Georgian;) as well as a less extended account of the motions and positions of the four newly discovered planets, (Vesta, Juno, Pallas, and Ceres,) together with an ephemeris, at the time of their expected re-appearance, of the two comets of short period, and of the comet of Halley, which are now known to belong exclusively to our system. The amount of these proposed additions will be seen in the Appendix; and they will occupy forty pages of the Almanac. It might perhaps be urged that these cannot be available for any purposes of *nautical* astronomy. But, surely the frequent transits of Mercury over the sun's disc cannot be considered as wholly unconnected with the general improvement of astronomy and geography, the two load-stars of navigation; and if it were only on this account, it is requisite that the tables of the planet should be as accurate as possible. And in a system where each body is mutually dependent on the others, where the beauty and harmony of the whole cannot be elicited or explained without a minute examination of the motions of each planet in detail, and where much has been, and may still be, done by private observers towards this great end, the trifling expense, incurred by the additional information here alluded to, must not be considered as wholly lost to the country, but may be repaid with interest at some future period. The remarkable anomaly in the motion of the satellites of the Georgian, noticed by Sir William Herschel; the singular discrepancies in the orbits and motions of the four newly discovered planets, situated at nearly an equal distance from the sun; and the suspicion of the existence of a highly rarefied medium in which the planets perform their revolutions, indicated by the retarded motion of one of the above-mentioned comets—may derive new light from future observations, and tend to enlarge our views of the system of the universe.

(To be continued.)

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

CURRENTS OF THE OCEAN.

The friends of the late venerable Major Rennell, and the scientific world in general, will be gratified by learning, that the great work on the Currents of the Ocean, to which he had devoted the last twenty years of his persevering and useful life, will appear in the course of the ensuing month, illustrated by five large charts, and other engravings.

ROYAL NAVAL SCHOOL.

To the Editor of the Nautical Magazine.

Eaton Square, 23d July, 1832.

Sir,

The able and successful manner in which the press has frequently promoted purposes of philanthropy and of general utility, induces me, as President of the Council of Administration of the Royal Naval School, to call your attention to the enclosed resolution, and to ask for the Institution the aid of your advocacy.

I am persuaded that a knowledge of the object in view, and of the condition of those for whose benefit it has been undertaken, will dispose the affluent part of our countrymen to come forward in its support.

The purpose of the proposed Naval School is to enable those of the profession, whose present incomes are absorbed by their immediate wants, to give to the minds of their children "that disposition and those habits that may enable them to attain any part of knowledge they may stand in need of, in the future course of their lives."—(Locke.)

An appeal to the public at large is rendered necessary for the accomplishment of this undertaking, since the Officers of the Navy have not themselves the pecuniary means of carrying it into full execution.

In order to shew this, I may refer to the scale of their half pay.

The half-pay of a

Rear Admiral, per diem, is	£1	5	0
Post Captain	0	10	6
Commander	0	8	6
Lieutenant	0	5	0
Master	0	5	0
Surgeon	0	5	0
Purser	0	3	0
Lieutenant of Royal Marines	0	3	0

I have taken the lowest rate of pay of each class, because it comprises the largest number. It is true, that rather a higher rate of pay is given to a limited number of the senior officers of each class; but an examination of the small proportion of that increase will shew how little even they are able to spare from their own maintenance.

In my desire to trespass as little as possible, whilst pressing upon your attention the extensive power at your disposal for promoting this philanthropic institution, I will only add, by way of further shewing the inadequate means of our profession, that on the part of the families of Officers who had themselves been subscribers to the Naval Charitable Society, the claims for relief at the last quarterly meeting exceeded one hundred and eighty in number, and yet the members then present could distribute little more than five hundred pounds from the charity, to diminish their immediate distresses.

I have the honor to be, Sir,

Your very obedient servant,

EDWD. CODRINGTON.

Copy of Resolutions of Council, passed July 10th, 1832.—"That the sum of £3000, out of the disposable funds of the Institution, be at once assigned to form a fund for erecting and furnishing a suitable building; and that there be added to this fund, all such sums as may be received on £25 nomination debentures, and £10 entrance fees; also, that an appeal be made to the public, by advertisement or otherwise, and that the President be requested to communicate this resolution to such departments of His Majesty's Government as he may think most likely to assist in the furtherance of this most

important object. That circulars be also printed and distributed, in order to obtain contributions, on which a statement of the Building Fund shall be made.”*

We beg to call the attention of our readers to the object of the foregoing letter, which requires no comment from us. One remark, however, might be added: Of the great national importance of the intended establishment there is but one opinion, and it is *this point alone* which should be kept in view until it be finally completed, and placed beyond emergency. Among the numerous subscribers who have already contributed towards it, are many who, unconnected with the naval service, have come forward liberally to promote its success; and we feel assured, that there are many more who need only to be informed that their assistance is required, who will do the same, and finish the good work which has been so nobly begun.

DIVING MACHINE.

MR. EDITOR, 6th July, 1832.

I have just seen in your valuable publication, No. 3, page 149, a letter, signed J. Murray, complaining of some person having claimed the credit of inventing a diving machine, of which he was the *original inventor*. To end all dispute, and prevent any acrimonious feeling arising between these ingenious individuals, I beg leave, through the same channel by which the complaint has been made, to assure them and the public, that *neither of them* has the shadow of a claim to the original invention, which will evidently appear from the following statement of facts: “*qua vidi, et quorum pars magna fui.*”

“In the summer of the year 1783, I was Midshipman of H.M. cutter *Baracouta*, lying at Spithead. At this time, the attempt to raise the Royal George† was in progress. To assist in

the operations carrying on for that purpose, a party of men was sent, daily, from all the guard-ships, and other vessels, at that anchorage. I was sent with the party from the cutter, and took a great interest in the execution of the work, being exceedingly desirous to see my old ship afloat again; and made myself well acquainted with every particular of the scheme, attending diligently, and assisting in its progress every day (Sundays excepted) for several months.

“Mr. Tracey, who had undertaken the raising of the ship, had a machine, in which he went down to examine the state of things under water, which, it appears to me, was so similar to that now in dispute, that I consider *this one* to be a close copy of the *other*. The description of Mr. Tracey's machine, which was exhibited openly in the cabin of the Royal William,‡ I shall give from memory as follows:—

“The head-piece was of copper, something resembling the head of a still, with two holes in it, to which were affixed two hoses or tubes of waterproof leather, such as fishermen's boots are made of; the one for conveying fresh air, to the end of which was fixed a common hand-bellows, which was kept in constant action during the time the machine was in the water; the other, for emitting the heated air, and also for the conveyance of sound, was entrusted to my care. In front of the headpiece was placed a piece of very strong thick glass, about 2½ or 3 inches square, or thereabouts. The part for enclosing the body was of copper also, with arm-holes, to which were fixed sleeves of the same leather as the hoses, which extended down to the hands, which were enclosed within bladders or bags of oilskin, large enough to allow the hands and fingers full play, and these were fastened over the ends of the sleeves, so as to be water-tight.

“For the legs and thighs, a pair of trowsers of the same material was filled with shoes, all in one, and secured to the lower part of the copper covering the body, all the joinings being perfectly water-tight; and, lastly, a quan-

* Measures are now in progress to build the School upon land, granted by the Crown, near Greenwich.

† Captain Anderson had been a Midshipman in the Royal George before her unfortunate catastrophe.

‡ The Royal William was one of the ships appointed to raise the Royal George, and the Diligents the other.

tity of lead was fastened to the bottoms of the feet sufficient to sink the whole. In this machine Mr. Tracey was lowered into the water, where he continued a considerable time, (the exact time I cannot state,) but I am quite sure he went all round the ship, by the assistance of the boat; and when he was taken up, he complained of no inconvenience, except the great difficulty of moving himself about, which he could not have done without the assistance of the boat, on account of the great weight of lead attached to his feet, and which was only sufficient to sink the machine. To the best of my recollection, he seemed to think, that the machine was not likely to be available to any useful purpose, unless it could be stationary, on this account; and he never went down again, to my knowledge.

“Whether the contending parties for inventive fame have made any im-

provement in it or not, I cannot say, and shall only recommend them to compare, with candour and impartiality, this statement of Mr. Tracey's machine with theirs, and then decide for themselves. Whether they have any claim to the original invention of a machine which has been known for at least fifty years, perhaps much longer, the public will, no doubt, decide for themselves.

“JAS. ANDERSON, Capt., R.N.”

We are much indebted to Captain Anderson for his interesting communication.—Our correspondent N. R. D. has shewn clearly that the invention was made long ago.

The mercantile expedition to the Niger, alluded to in our last, has been detained, but is to proceed immediately.

NAVAL INTELLIGENCE.

(From the Naval Papers.)

THE ROYAL NAVY IN COMMISSION.

••. S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

- ACTÆON**, 26—Hon. F. W. Grey, 3d June, at Malta.
- ÆTNA**, S. V. 6—Com. E. Belcher, West Coast of Africa.
- AFRICAN**, St. V. 1—Lt. J. Harvey, 16th June, arrived at Gibraltar.
- ALBAN**, St. V.—Lieut. H. Walker, (a) April, at Constantinople.
- ALERT**, 18—Com. J. C. Fitzgerald, Pacific.
- ALFRED**, 50—Capt. R. Maunsell, 3d June, at Napoli.
- ALLIGATOR**, 28—Capt. G. R. Lambert, 16th Feb. arrived Cape Good Hope; 22d Feb. sailed for India.
- ALGERINE**, 10—Com. Hon. J. F. F. De Roos, at C. Frio.
- ARACHNE**, 18—Com. W. G. Agar, 31st May, at Bermuda.
- ARIADNE**, 28—Capt. C. Phillips, 22d May, at Nassau, from Honduras.
- ASIA**, 84—Capt. P. Richards. Flag of Adml. Parker, Tagus.
- ASTREA**, 8—Capt. W. King, Falmouth.
- BADGER**, 10—Com. G. F. Stowe, 28th Jan. at Mauritius.
- BARRHAM**, 50—Capt. H. Pigot, May, at Constantinople.
- BEACON**, (late **МЕТРОН**),—Com. R. Copeland, Portsmouth.
- BEAGLE**, 10—Com. R. Fitz-Roy, May, at Rio Janeiro.
- BELVIDERA**, 42—Capt. Hon. R. S. Dundas, 3d June, at Napoli de Romania.
- BLANCHE**, 46—Capt. A. Farquhar, K. H. C. B. 10th May, at Port Royal, Jamaica.
- BLOSSOM**, S. V. 16—Com. R. Owen, on her way home.
- BRISK**, 3—Lieut. J. Thompson, 2d April, at Accra.
- BRITANNIA**, 120—Capt. P. Rainier, Tagus.
- BRITON**, 46—Capt. J. D. Markland, C. B. Tagus.
- CALEDONIA**, 120—Capt. J. Hillyar, Tagus.
- CASTOR**, 36—Capt. Sir R. Grant, Kt. Exper. squadron.
- CHALLENGER**, 28—Capt. C. H. Freemantle, 30th Nov. Singapore, from Madras.
- CHAMPION**, 18—Com. Hon. A. Duncombe, Plymouth.
- CHARYBDIS**, 3—Lieut. R. B. Crawford, Gold-coast.
- CHILDERS**, 18—Commander R. Deans, at Oporto.
- CLIO**, 18—Com. J. J. Onslow, November, Callao.
- COLUMBIA**, St. V. 2—Lt. R. Ede, 15th July, at Gibraltar.
- COLUMBINE**, 18—Com. O. Love, June, at Barbadoes.
- COMET**, 18—Com. A. A. Sandilands, 4th Feb. at Singapore.
- COMET**, St. V.—Woolwich.
- CONFIANCE**, St. V. 2—Lieut. H. F. Belson, Falmouth.
- CONFLICT**, 12—Lieut. G. Smithers, West Coast of Africa.
- CONWAY**, 28—Capt. Eden, 25th June, at Madeira.
- CORDELIA**, 10—Com. C. Hotham, June, Archipelago.

- CRACKER**, 1—Lieut. J. J. Morgan, 4th July sailed for Jersey.
CROCODILE, 28—Capt. J. W. Montagu, 26th Dec. left Madras for Trincomalee.
CRUIZER, 18—Com. J. Parker, China seas.
CURAOA, 26—Capt. D. Dunn, 30th March sailed from Cape of Good Hope.
CURLEW, 10—Com. H. D. Trotter, 27th Mar. in Simon's Bay.
DEE, St. V.—Com. R. Oliver, Woolwich.
DISPATCH, 18—Com. G. Daniell, Plymouth.
DONEGAL, 74—Capt. J. Dick, Flag of Vice-Admiral Sir P. Malcolm. Exper. squad.
DRUID, 46—Capt. G. W. Hamilton, C. B. April, in River Plata.
DRYAD, 42—Capt. J. Hayes, C. B. 9th May left Sierra Leone for Gambia.
DUBLIN, 50—Capt. Rt. Hon. Lord J. Towns- end, March, at Valparaiso.
ECHO, St. V.—Lieut. Otway, 15th June sailed for Mediterranean.
FAIRY, S. V. 10—Com. W. Hewett, surveying North Sea.
FAVOURITE, 19—Com. J. Harrison, April, at Ascension.
FIREBRAND, St. V.—Lieut. T. Baldock, Fal- mouth.
FIREFLY, 2—Lieut. J. M'Donnel, Bahamas.
FLAMER, St. V.—Lieut. R. Bastard, Woolwich.
FLY, 10—Com. P. M'Quhae, 10th May, at Port Royal.
GANNET, 18—Com. M. H. Sweney, 4th May sailed from Port Royal, Jamaica.
HARRIER, 18—Com. H. L. S. Vassal, 2 April arrived at Madeira; 3d, sailed for India.
HERMES, St. V.—Lieut. R. Bastard, 17th July, at Falmouth.
HORNET, 6—Lieut. F. R. Coghlan, Chatham.
HYACINTH, 18—Com. W. Oldrey, 16th May, sailed for Jamaica from Port-au-Prince.
IMOGENE, 18—Capt. P. Blackwood, East Indies.
INVESTIGATOR, 16—Mr. G. Thomas, Sheer- ness.
ISIS, 50—Capt. J. Polkinghorne, Flag of R.-Adm. Warren, C. B. April, at Cape of Good Hope.
JASEUR, 18—Com. F. Harding, 25th April arrived at Mauritius.
JUPITER, *Troop Ship*. Mr. R. Easto, 17th July. Sailed for Cork.
KANGAROO, 3—Lieut. J. Hookey, Bahamas.
LEVERET, 10—Lieut. W. P. Lapidge, 10th July, arrived at Plymouth.
LIGHTNING, 18—Com. T. Dickinson, April, at Rio.
LIGHTNING, St. V.—Woolwich.
MADAGASCAR, 46—Capt. E. Lyons, 8th May, at Alexandria.
MAGICIENNE, 14—Capt. J. H. Plumridge, Feb. arrived at Bengal.
MAGNIFICENT, 4—Lt. J. Paget, Port Royal.
MAIDSTONE, 42—Capt. C. M. Schomberg, 25th April, at Bahia.
MASTIFF, 6, S. V.—Lieut. J. Graves, 21st July, sailed for Mediterranean.
MELVILLE, 74—Capt. H. Hart, 5th April sailed from Cape for East Indies. Flag- ship. V.-Adm. Sir J. Gore, K.C.B.
MESSANGER, St. Transp.—Lieut. B. Aplin, 13th July, Portsmouth. Sailed for Ply- mouth.
METEOR, St. V.—Lieut. Symons, Woolwich.
MINX, 3—Lieut. J. Simpson, Bahamas.
NAUTILUS, 10—Com. Rt. Hon. Lord G. Pau- lett, 10th July off the Douro.
NIMBLE, 5—Lieut. J. M. Potbury, coast of Cuba.
NIMROD, 20—Lord E. Russell, Plymouth.
NORTH STAR—Capt. Hon. G. W. Trefusis, May, at Bermuda.
OCCAN, 80—Capt. S. Chambers. Flag-ship, Sheerness, V.-Adm. Sir J. P. Beresford, St. K.C.B.
ONYX, 10—Lieut. A. B. Howe, Cork.
ORRESTES, 18—Com. W. N. Glasscock, Exper. Squadron.
PALLAS, 42—Capt. W. Walpole, 11th June, at Barbadoes.
PEARL, 20—Com. R. Gordon, 10th May, Port Royal, Jamaica.
PELICAN, 18—Com. J. Gape, Ionian Islands.
PELORUS, 18—Com. R. Meredith, 31st Jan. arrived at Sierra Leone, and sailed for Accra.
PHILOMEL, 10—Com. W. Smith, June, at Gibraltar.
PICKLE, 5—Lieut. E. Stopford, 12th May ar- rived at Barbadoes.
PIKE, 12—Lt. A. Brooking, Cork station.
PINCHER, 5—Lt. W. S. Tulloh, Bahamas.
PLUMPER, 12—Lieut. T. Cresser, Gold- coast.
PLUTO, St. V.—Lieut. G. Buchanan, Bight of Benin.
PYLADES, 18—Com. E. Blankley, 24th April, at Pernambuco.
RACEHORSE, 18—Com. C. H. Williams, 2d April, left Barbadoes; 20th April, arrived at Halifax, from Bermuda.
RAINBOW, 28—Capt. Sir J. Franklin, Knt. May, Corfu.
RALEIGH, 18—Com. A. M. Hawkins, 3d June, Napoli di Romania.
RAPID, 10—Com. C. H. Swinburne, 30th June, Malta.
RATTLESLAKE, 28—Capt. C. Graham, Valpa- raiso, March.
RAVEN, S. V. 4—Lieut. W. Arlett, Africa.
RECRUIT, 10—Lt. T. Hodges, 25th May arrived at Halifax; 28th sailed for Ber- muda.
REVENGE, 78—Capt. D. H. Mackay, Tagua.
ROMNEY, *Troop Ship*, Tagua.
ROSE, 18—Com. E. W. Pilkington, May, at Vera Cruz.
ROYALIST, 10—Lieut. R. N. Williams, Oporto.
ST. VINCENT, 120—Capt. H. F. Senhouse, 3d June, Napoli di Romania. Flagship V.-Adm. Sir H. Hotham, K. C. B., &c.
SAMARANG—28, Capt. C. H. Paget, 2d May arrived at Pernambuco.
SAN JOSEF, 110—Capt. R. Curry, Plymouth, Flag-ship Admiral Sir M. Dixon, K. C. B.
SAPPHIRE, 28—Capt. Hon. W. Wellesley, 12th June, Jamaica.
SCYLLA, 18—Com. Hon. G. Grey, 3d June, at Malta.
SERINGAPATAM, 46—Capt. Hon. W. Walde- grave, 17th March, Valparaiso.
SKIPJACK, 5—Lieut. W. Shortland, Ba- hamas.
SNAKE, 16—Com. W. Robertson, Woolwich.
SOUTHAMPTON, 52—Capt. J. M. Laws, 20th Jan. at Singapore. Flag of Rear-Admiral Sir E. Owen, K.C.B.
SPARROWHAWK, 18—Com. Currie, act. 10th May, at Port Royal.
SPEEDWELL, 5—Lt. W. Warren, Havana.
STAG, 46—Capt. Sir T. Trowbridge, 6th July, at Oporto.

- SULPHUR**, 8—Com. W. T. Dance, King George Sound, Australia.
- SWAN**, 10—Lieut. J. E. Lane, North Sea.
- SYLVIA**, 1—Lieut. T. Spark, North Sea.
- TALAVERA**, 74—Capt. S. Brown, 5th July sailed for St. Petersburg, with Lord Durham.
- TALBOT**, 28—Capt. R. Dickinson, C. B. 28th Jan. at Mauritius.
- TRINCULO**, 18—Com. R. Booth, Experimental Squadron.
- TWEED**, 23—Com. A. Bertram, 12th May, at Jamaica.
- TYNE**, 28—Capt. C. Hope, 18th June arrived at Portsmouth.
- UNDAUNTED**, 46—Capt. E. Harvey, 37th Mar. in Simon's Bay.
- VERNON**, 50—Capt. Sir F. Collier, Knt. Woolwich.
- VICTOR**, 18—Com. R. Russell, 18th March, arrived at Bermuda.
- VICTORY**, 104—Capt. H. Parker. Flag-ship Admiral Sir T. Foley, G. C. B. Portsmouth.
- VIPER**, 6—Lieut. H. James, 2d July arrived at Lisbon.
- VOLAGE**, 28—Capt. Right Hon. Lord Colchester, Valparaiso 12th March.
- WARSPITE**, 76—Capt. C. Talbot. Flag-ship Adm. Sir T. Baker, K.C.B., April, at Rio.
- WINCHESTER**, 52—Capt. Rt. Hon. Lord W. Paget, 12th June, at Port Royal. Flag-ship Vice-Adm. Sir E. G. Colpoys.
- WOLF**, 18—Com. W. Hamley, 21st. Feb. arrived at Ceylon.
- ZEBRA**, 18—Com. D. De Saumarez, 6th Dec. at Sydney.

Rear-Admiral Sir Frederick Maitland, K.C.B., on the 20th July, took the charge of Portsmouth Dock-yard, and all the duties hitherto performed by the Commissioner. Sir Frederick has hoisted his flag (with two balls in it) on board the late Commissioner's yacht, and attended the payment of wages of the Mastiff surveying ship. Captain Superintendent Ross has his pendant flying in the late Commissioner's yacht at Plymouth, and Capt. Superintendent Sir James Gordon on board the late Commissioner's yacht at Chatham. Capt. Andrew King, of the Ordinary at Sheerness, resides on shore at the late Commissioner's house there, as Sir James Gordon's Assistant.

The model frigate, which was recently built as a present to the King of Prussia, was formally delivered over to His Majesty, on the 23d of June, by Lord Fitzclarence, near the Isle of Peacocks, on the lake formed by the Havel. The whole Court was on board the frigate during the ceremony of her being presented, and expressed their delight at the beauty of her fittings.

H. M. S. Procris, Com. J. T. Talbot, lately arrived from the Mediterranean, at Plymouth, was paid off into Ordinary on the 20th July.

The squadron, under the command of Vice-Adm. Sir Pulteney Malcolm, consisting of the Donegal, 78, Capt. Dick, Castor, 36, Capt. Sir Richard Grant, Orestes, 18, Com. Glascock, and Trinculo, 18, Com. Booth, arrived at Plymouth on the 15th July. On the 18th, 300 Marines embarked in the boats of the squadron, under the direction of Com. Booth; and in the evening the squadron sailed for Cork. The Tyne,

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28, Capt. Hope, was to sail from the eastward on the 21st for Portsmouth, to embark about 100 of the Marine Artillery, under Major Parke, and then proceed to join Vice-Admiral Sir Pulteney Malcolm.

H. M. cutter Emerald, tender to H. M. S. Victory, Sanders, Master, and the Paddy from Cork, yacht, belonging to Mr. Beamish, Main, Master, had a trial on the 13th July of their relative sailing qualities. They started, accompanied by a numerous *cortege* of vessels, at ten o'clock, A. M. to sail round the Owers Light from the buoy of the Spit, and back. The Paddy rounded the buoy about twelve minutes before the Emerald, at 2. 20. P. M. thus beating her by about one mile.

Admiral Sir Isaac Coffin, Bart. has been made a Knight Grand Cross of the Royal Hanoverian Guelphic Order. Capt. Sir John Marshall, R. N. Superintendent of Quarantine in the River Medway, a Knight Commander; and Capt. Sir Robert Stuart, R. N. a Knight of the same order.

The Chief and Commissioned Boatmen and Boatmen of the Dartmouth Coast-guard District, have presented to Commander William Slaughter, R. N. on his retirement from the district, a magnificent gold snuff-box, having a suitable inscription on the lid, as a mark of their respect and esteem.

We learn from the Salem Gazette that the inhabitants of Pitcairn's Island, who lately emigrated in a body, in consequence of the scarcity of water on their own island, to Otaheite, being shocked at the licentiousness of manners which prevailed there, and having suffered severely from sickness, twelve of their

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number having died, have been all reconveyed to their former residence. They were transported back by Captain Driver, of the brig Charles Dogget, of Salem. The number, when conveyed to Otaheite, was 87.—*American Paper*.

The following is extracted from the Jamaica papers, dated March 9, 1832:—"We, the Magistrates and other inhabitants of the town of Montego Bay, wait on you on the approaching departure of the *Arachne*, to testify to the Officers, Seamen, and Royal Marines of His Majesty's ship, our warmest acknowledgments for their co-operation and assistance during the period of the *Arachne's* being stationed here. The duties of a laborious and hazardous service have been encountered with a zeal and cheerfulness, which we cannot overrate, and will not forget. We assure yourself and your gallant ship's company of our best wishes, and that we will at all times rejoice to hear of your and their prosperity. We have the honour to be, with respect and esteem, Sir, your faithful and humble servants. [Signed by all the Magistrates and upwards of fifty inhabitants.]—To Capt. Agar, Commander of H.M.S. *Arachne*."

The Hornet schooner has been commissioned at Chatham by Lieut. F. R. Cogan, and ordered to be brought forward for sea.

A corvette, named the *Rover*, constructed by Capt. Symonds, was launched at Chatham, on the 17th July, and immediately warped alongside the *Sheer Hulk*, to take in her masts. She was taken into Dock on the 19th.

Lieut. William Hoseason, of H. M. S. *Excellent*, late in command of H. M. S. *Pantaloon*, *pro tempore*, has rejoined his ship, Lieut. S. C. Dacres, of H. M. S. *Castor*, having been appointed to the command of the *Pantaloon*.

Captain Lord Adolphus Fitzclarence, R.N. has received the Order of the Red Eagle of Prussia of the first class. Capt. Sparshott, R.N. and Com. Smart, have also received Crosses of the same Order of the third class, from the King of Prussia.

His Majesty's sloop *Serpent*, 16 guns, was launched from a Merchant's Yard, at Limehouse, on the 14th July. She has a round stern, and is built by Capt. Symonds.

The *Scout*, corvette, recently launched

at Chatham, has been ordered to be brought forward for commission. She was built upon the plan of Sir Robert Seppings, and will shortly try her sailing qualities with the experimental squadron.

The *Castor* was originally intended to carry 18-pounder carronades on her quarter-deck and forecastie, but 32-pounders have been substituted, by order of the Lords' Commissioners of the Admiralty.

The *Aboukir*, 74, has been appointed as a cholera hospital ship, at Chatham, for the reception of patients from the Cumberland, Canada, and *Euryalus*, convict hulks. There have already been upwards of 100 cases, several of which were malignant, and not less than thirty deaths within the last three weeks. We are happy to hear, however, that the virulence of the disorder is fast subsiding, and that the number of cases during the last week has considerably diminished. Mr. Anderson, Surgeon, R. N. and three Assistant-Surgeons from London, have been sent down, to assist the Medical Attendant of the Canada.

The *Desiré*, frigate, at Sheerness, having been found too defective for a hospital ship, is ordered to be sold out of the service.

A reward of one thousand pounds has been offered for the apprehension of the murderers of Lieut. Knight, R.N. of the Weymouth Coast Guard Service.

The *Grasshopper*, 18, having been sold out of the service, has sailed for the river, under jury rigging. She is intended for the South Sea trade.

The *Neptune*, 120, on the stocks in Portsmouth Dock-yard, is ordered to be forwarded so that she may be launched during the present summer; it is supposed this will take place about September next.

H.M. Schooner, *Cockatrice*, 6, was commissioned at Plymouth on the 14th July, by Lieut. L. Rees, for the packet service, between Rio de Janeiro and Buenos Ayres.

The *Ganges* has been hauled off from alongside the Dockyard to her proper moorings off the King's Stairs, and is proceeding to a state of Ordinary. The *Galatea* has also been brought down from Porchester Lake, in order to be properly cleaned, and put into a state of Ordinary.

PROMOTIONS AND APPOINTMENTS.

From the Naval Papers.

PROMOTIONS.—Capt. Sir Michael Seymour, Bart. K.C.B. resident Commissioner of H. M. Dock-yard, at Portsmouth, and Capt. Thos. Briggs, resident Commissioner of H.M. Dock-yard at Malta, are promoted to the rank of Rear-Admiral: the former taking rank next below Rear-Admiral Norborne Thompson, and the latter next below Rear-Admiral James Carthew.—Capt. John Mason Lewis, resident Commissioner of H. M. Dock-yard at Sheerness, is promoted to the rank of Rear-Admiral, and retires on superannuation.

Captains S. Radford, C. H. Williams; **Commander** W. Dawson. **Lieutenants** W. C. Aldham, T. Hope (b), R. F. King, J. Russell, T. Smith.

APPOINTMENTS.—Rear-Admiral Sir Frederick Maitland, K.C.B. is appointed Superintendent Admiral of Portsmouth Dock-yard.—Mr. J. Edye, Purser, is appointed Secretary to Vice-Admiral Sir Pulteney Malcolm.—Mr. Edye, late Foreman at Chatham Dock-yard, is appointed Chief Clerk and Professional Adviser to Capt. Symonds, Surveyor of the Navy.—Mr. Oliver Lang, son of the builder at Woolwich Dock-yard, is appointed Draughtsman to Capt. Symonds.—Mr. Chas. Lang, Draughtsman in Woolwich Dock-yard, is appointed Private Secretary to Rear-Admiral Sir Thos. Hardy, Bart. G.C.B.

ADELAIDE—*Rep. Cr. G. T. Smyth, Lieut.*
ARACHNE, 18—*E. Hilditch, Assist. Surg.*
ARIADNE, 28—*J. Russell, Lieut. Act.; G. M. Noble, Mid.*
BEACON, S.V.—*S. Hope, Lieut.; E. J. Clarke, Mid.*

CAMELION, *Ord.*—*W. Hatch, Gunner.*
CASTOR, 36—*J. H. Weller, Lieut.; R. C. White, Mid.; M. Wilkins, Clerk.*

CHAMPION, 18—*Hon. A. Duncombe, Com.; A. Boyle, E. Herrick, J. Taylor, Lieuts.*
COCKATRICE, 6—*W. L. Rees, Lieut.*

DEE, St.V.—*E. Owen, Lieut.*
DISPATCH, 18—*A. Neill, Surg.*
EREBUS, *Ord.*—*T. Soar, Gunner.*
EXCELLENT—*W. Boys, Mid.*
GOLDFINCH Packet—*E. Collier, Lieut.*
HORNETT, 6—*F. R. Coghlan, Lieut.*
LAUREL, *Ord.*—*J. Moncreaffe, Gunner.*
MASTIFF, S.V.—*T. A. B. Spratt, Mid.*
ORESTER, 18—*J. Coaker, Master Act.; J. Drummond, Gunner.*
RANGER, *Rep. Cr. J. S. W. Graudy, Mate.*
SPARROW HAWK—*T. Maitland, Com.*
SHAMROCK—*Rep. Br. W. Aldred, Lieut.*
SUCCESS, *Ord.*—*W. Baker, Gunner.*
VICTORY, 104, *Flag Ship*—*W. Munroe, D. W. Walker, Assist. Surgs.*

ROYAL GEORGE Yacht—*S. C. Dacres, Lt.*
COAST GUARD.—*D. Cox, Com. W. R. Jackson, E. Handfield, G. E. Marshall, Ireland.*

Ordinary at Sheerness—*J. Hickman, Lieut.; W. Roy, Assist. Surg.*

Ordinary at Portsmouth—*H. Hall, Gunner.*
ABOUKIR, *Cholera Hospital, at Chatham*—*J. Anderson, Surg*

TREMENDOUS, *Cholera Hosp.*—*T. Morrison, Surg.*

WARRIOR, *Cholera Hosp. at Chatham*—*W. Clarke, Surg.*

YORK, *Convict Ship*—*James Mc Ternon, M.D., Surg.*

FANNY, *Convict Ship*—*Tucker, Assist. Surg.*
ROYAL MARINE.

WOOLWICH DIV.—*C. T. Hoskins 2d Lieut.; W. Taylor Pay Captain.*

CHATHAM DIV.—*P. Toms, Assist. Surg.; J. Land, First Lieut.*

PORTSMOUTH DIV.—*G. Langdon, Ret. Full Pay; T. Quested Capt.; G. Watson, First Lieut.; R. S. Wilkinson Brev. Maj. Ret. Half-pay.*

PLYMOUTH DIV.—*J. J. Wynne 2d Lieut.; J. Drury Captain.*

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR THE PRESENT YEAR.

Reported to 20th April.				Reported to 20th May.			
VESSELS.	RIG.	TONS.	WHERE BUILT	VESSEL.	RIG.	TONS.	WHERE BUILT
Bally	Schooner	163	Shoreham.	Bloom	Schooner	90	Leith.
Charlotte	Brig	256	Maryport.	Carpenter	Sloop	70	Spey.
Crystal	Brig	203	Sunderland.	Collingue	Schooner	95	Herefordshire.
Friendship	Schooner	76	Cork.	Eaton	Sloop	78	Chester.
Gleauer	Schooner	94	Woodbridge.	Harriet	Schooner	93	Woodbridge.
Jane	Sloop	35	Falmouth.	Heath	Brig	236	Newcastle.
Margaret				Isabella	Brig	238	Belfast.
Thompson	Barque	272	Kincardine.	King William	Schooner	78	Wells.
Successa	Schooner	94	Newcastle.	Lightning	Schooner	128	Lowestoff.
Themis	Snoor	262	Sunderland.	London	Ship	611	Rjver Thames.
Thomas Dou-				Lowther	Schooner	131	Workington.
gall	Snow	253	Aberdeen.	Mary Ann			
Time	Schooner	132	River Thames.	Webb	Ship	339	Liverpool.
Tynwald	Barque	202	Ile of Man.	Mary Taylor	Schooner	217	Blyth
Woodman	Snow	114	Newcastle.	Nymph	Schooner	81	Cardiff.
				Ocean	Brig	121	Cardigan.
				Sarah & Maria	Brig	181	Waterford.
				Stirlingshire	Snow	237	Sunderland.
				Superb	Schooner	123	Ipwich.
				Zenobia	Schooner	103	Plymouth.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 268.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
225 Anna	Porteven	Sunderland	Caen	HasboroSand	24 June	6754 Crew saved.
226 Arid	Leveret	Jamaica	Quebec	C. Romain	5 June	6760 Crew saved.
227 Clarendon	Tolson	Liverpool	Bruges	C. St. Francis	27 May	6753 Crew saved.
228 Cousins	—	Bristol	S. Jno. N. W. d.	C. St. Francis	27 May	6753 Crew saved.
229 Derwent	—	—	Clyde	Bathurst	3 June	6759
230 Daw Drop	Wokes	London	Quebec	Berthier	June	6758
231 Emerald	Emmerson	Boston	Sunderland	Burman's H.	21 April	6754 Stranded.
232 Fame	Hargraves	Liverpool	Newfoundl.	Newfoundl.	—	6759
233 Fingal	Evans	Liverpool	S. Andrews, N. B.	Eastport	20 May	6754 Crew saved.
234 Henry	—	Swansea	Quebec	49 N. 39 W.	—	6758 Crew saved.
235 Henry 5th	—	Neath	Quebec	—	—	6758 Crew saved.
236 Indian Chief	Calder	—	Barbadoes	Eastport	21 April	6755 Full of water.
237 Jno. Hustlin	Thomas	Bangor	Chester	Belfast	10 July	6760
238 Joseph	Foster	Goole	London	Burton	16 July	6760 Crew saved.
239 Laura	Nicholson	Newcastle	Newfoundl.	44 N. 45 W.	9 May	6759 Crew saved.
240 Louisiana	—	—	—	Falkland Is.	10 Jan.	6758 Crew saved.
241 Marant	Foster	Hull	London	Saltfleet	9 July	6759 1 drowned.
242 Mary Almy	Borsting	Gothenburg	N. w. Provid.	48 N. 38 W.	1 July	6760 Crew saved.
243 Mary & Betty	—	Dublin	Troom	Lamlash	24 June	6756 Under water.
244 Only Son	Leavett	Halifax	S. Andrews, N. B.	Deer Island	25 May	6755 Cargo lost.
245 Providence	Honey	Plymouth	—	Nash Sand	9 June	6754
246 Sarah	Marshall	Bourdeaux	Quebec	47 N. 32 W.	12 June	6758 Crew saved.
247 Susan	—	—	—	Eastport	25 May	6755
248 Thompson Packet	—	—	—	—	—	—
249 Wellington*	Sherer	Leith	Quebec	Prince Ed. Id.	16 June	6759
250 William	Young	Shields	Quebec	C. Rozier	15 May	6758 Crew saved.
251 Worrell	Hunting	Liverpool	Carbonear	47 N. 47 W.	28 June	6761 Crew saved.
				Newfoundl.	14 June	6756 Crew saved.

* Cargo sold for £60.

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Andromache	Hunter	London	—	Portsmouth	22 June	6754 Run foul of.
Asia	—	Londoader.	Philadelph.	—	—	—
Brothers	—	Miramichi	Newfoundl.	Miramichi	12 June	Damaged.
Crowe	Harding	Shields	Plymouth	Portsmouth	22 June	6754 Run foul of.
David	Petel	Hamboro	Havre	Cuxhaven	29 Jan.	6753 Leaky.
Edgar	Gibson	Havana	—	Falmouth	24 June	6755 Damged.
Ellen	Hays	Bangor	Wexford	Cemes	25 June	6753 Damged.
Flora	Baker	Liverpool	—	Pillau	24 June	Damaged.
Friends	Bedlington	Shields	Colchester	Shields	5 July	6758 Damged.
Good Intent	M'Donald	London	S. Michael's	Falmouth	10 July	6759 Run foul of.
Horsley Hill	Hunter	Waterford	Quebec	Waterford	24 June	6755 In distress.
Pallas	Redpath	Bury River	—	Llanely	14 July	6760 Damaged.
Pekasus	Howlett	London	Sydney	Cowes	24 June	6754 Run foul of.
Perseverentia	—	Archangel	Liverpool	Archangel	15 June	6756 Leaky, struck.
Reliance	Facott	Tobago	Bristol	Grenada	30 May	6761 Damaged.
Sarah	Howlan	London	Rouen	Quillebeuf	15 July	6761 Damaged.
St. Lawrence	Wilds	London	S. John N. B	Portsmouth	22 June	6754 Lost foremast.
Valentine	Wilkinson	Hull	—	Blakeney	24 June	6754 Leaky.
Waterloo	—	Madras	—	Mauritius	2 April	6758 Leaky.

Canal from the Nile to the Red Sea.
—According to estimates made by some distinguished French engineers, the whole expense of a deep canal which should connect the Arabic gulf with the Nile and the Mediterranean, make

Africa an island, and shorten the voyage from Marseilles to Bombay one-half, would not exceed £700,000; a sum considerably less than has been expended on some single works of the same kind in Great Britain.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
Abeona		Havana	St.Petersbg	47 N 39 W	23 June 6760	Off Jersey
Albion		Miramichi	Aberdeen	49 N 11 W	28 June 6760	
Alchymist		Cork	Quebec	46 N 45 W	12 June 6761	
American		Malaga	New York	38 N 56 W	15 June 6758	
Amity		Bristol		46 N 50 W	21 June 6761	
Anastasia		Liverpool	PtauPrinc.	30 N 42 W	29 May 6755	
Antelope		Newcastle	B.ofChalor	St. Paul's I.	23 June 6760	
Apollo		Gibraltar	Labradore	45 N 44 W		
Arabian		Bristol	Bengal	8 S 77 E	8 Feb. 6756	Dismasted.
Aurora			Quebec	45 N 59 W	21 June 6761	
Bellona		Liverpool	N. Orleans	24 N 26 W	4 June 6761	
Brothers		Sunderland	B.ofChalor	45 N 26 W	20 June 6758	
Canning	Baylis	London	China	Lat. 7.	21 May 6761	
Carron		Newcastle	Miramichi	51 N 19 W	28 June 6761	
Chaplin		London	Quebec	51 N 18 W	27 June 6761	
Columbo			Boston	50 N 22 W	7 July 6761	
Creole		Falmouth	Pernambuc	10 N 24 W	17 May 6755	
Dash	Farrant	Liverpool	Salonica	Off Cape St. Vincent	18 June 6757	
Dee		Grenada	Halifax	37 N 64 W	12 June 6761	
Diana	Spence	London	Quebec	41 N 55 W	21 May 6755	
Dispatch		Sicily	Clyde	Off Lisbon	1 July 6761	
Dove		Sunderland		46 N 50 W	21 June 6760	
Eagle		London	SierraLeon	49 N 15 W	6 July 6761	
Edward	Lamb	London	V D. Land	42 N 12 W	4 July 6761	
Elizabeth	Dixon		Quebec	45 N	24 June 6761	
Eleanor	Mans	Scarboro'	Pernambuc		19 May 6761	
Elizabeth		Londouder		48 N 26 W		6756
Elizabeth		Harrington	Quebec	45 N 51 W	23 June 6761	
Elizabeth		Londouder	Quebec	46 N 26 W		6760
Eloiza	Sauron	London	PtauPrinc.	34 N 33 W	15 May 6755	
Eudymion	Smith		Quebec	48 N 42 W	28 June 6761	
Express		Gibraltar	New York	38 N 56 W	15 June 6758	
George		Liverpool	Smyrna	36 N 17 W	17 July 6761	
George IVth.		Liverpool	Syracuse	C. de Gata	30 June 6761	
George Canning		Bristol	New York	47 N 26 W	30 June 6761	
Glennifer	Dunlop	Clyde	Quebec	52 N 22 W	5 July 6761	
Hector	Field	Jamaica	C. St.Nicholas		10 June 6761	
Helen		Liverpool	St.John N. B.	50 N 22 W	19 June 6755	
Henrietta		Liverpool		45 N 59 W	30 June 6761	
Herbert		Bellast	St.John N. B.	54 N 12 W	2 July 6761	
Hercules		Whitehavn.		51 N 18 W	4 July 6761	
Hero		Hamboro	Tarragona	45 N 11 W	15 June 6761	Off Jersey.
Hogarth			New York	48 N 32 W	17 June 6756	
Home		N. Shields		49 N 36 W		6761
Huskisson		Liverpool	Charleston	23 N 23 W	15 June 6761	Jury rigged.
Ida		London	Montreal	49 N 77 W	8 July 6761	
Industry		Dundee	Quebec	48 N 46 W		6761
Jane		Clyde	N. Orleans	19 N 82 W	21 April 6755	
Jane		London	Halifax	42 N 51 W	17 June 6761	
Jane Prowse	Cornish	Liverpool	Valparaiso	Off Portugal	8 June 6758	
John	Marsh	Liverpool	Quebec	51 N 33 W	26 June 6760	
John Atkinson		Cork	Quebec	47 N 56 W	12 June 6761	
John Reid		Liverpool	Quebec	49 N 28 W	2 July 6761	
John Stewart	Remington	London	Demerara	32 N 19 W	1 June 6755	
Julia		London	St. Andrews.	42 N 60 W	1 June 6758	Going to Halifax.
Lady Harewood		London	N. S. Wales	8 S 23 W	2 May 6755	
Lanc		London	Hobt. Town	3 N 27 W	30 May 6761	
London		Liverpool	Barbadoes	21 N 33 W	22 May 6755	
Lord Aylmer		Quebec	Liverpool	48 N 47 W		6761
Lord Wellington		New Ross	Quebec	51 N 16 W	4 July 6761	
Lycurgus		Liverpool	New York	Westrn. Ialds.	14 June 6756	
Manchester		Yarmouth	Quebec	49 N 23 W	26 June 6758	
Maria	Bayley	Bristol		26 N 72 W	5 June 6759	
Mary	Milburn	Shields		51 N 26 W	26 June 6761	
Mary		Newcastle	Pictou	54 N 17 W	9 July 6760	
Mary		Liverpool	Savanna	28 N 66 W	5 June 6760	
Mmnon		Cork	Quebec	44 N 54 W		6756
Mercator	Wilson	Glasgow		47 N 60 W		6761
Mercury		Tarragona	Rio Janeiro	9 N 23 W	22 May 6755	
Moscow		St.Petersshh.	Boston	50 N 25 W	1 July 6761	
Nelson		Richibucto	Maryport	27 W		6761
New Times	Pratt	Zante	London	Gibraltar		6757
Noreson		Newcastle	Quebec	54 N 15 W		6761
Orontes (Fr.)			Quebec	Cape North		6761
Oscar		Leghorn	London		22 June 6761	
H.M.S. Pelorus	Com. Meredith	Bight of Benin	SierraLeon.	StAnn's Shls.	15 May 6755	

VESSELS SPOKEN AT SEA CONTINUED.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
Prince Leboe		Liverpool		40 N 58 W	23 June	6761
Red Rover		Cork	N.S. Wales	1 S 23 W	12 May	6755
Retrench		London	Philadelph	49 N 19 W	25 June	6758
Robert Burns		Liverpool		46 N 47 W	.....	6761
Robert Isaac		Liverpool	Savana	40 N 33 W	21 June	6761
Sally		Liverpool	Magdalen R.		.....	6761 Out 70 days.
Sarah	Whiteside	London	Bombay	21 S 29 W	7 May	6755
Sarah & Caroline		Liverpool	Portugas		11 June	6761
Sceptre,		Bourdeaux	Quebec	45 N 26 W	20 June	6758
Scotia		Newfoundland.	Pernambuc	4 N 23 W	7 June	6755
Sisters	Miller		Off Malaga		19 June	6761
Sophia		Hambro	Liverpool	21 N 52 W	26 May	6755
Speedy	Kennedy	River Bona.	Havana	39 N 31 W	.....	6761 Out 9 weeks.
Spray		Trinidad	Liverpool	35 N 56 W	26 June	6761 Lost m.t. mast.
Superior		Liverpool	New York	39 N 33 W	6 June	6755
Swallow		Liverpool	Quebec	48 W	.....	6761
Tamerlane	Black	Clyde	Quebec	46 N 57 W	20 June	6760
Three Brothers		Liverpool	Batavia	2 S 23 W	4 June	6755
Valiant		R. Nuevo	Liverpool	G. of Florida	4 June	6758
Velocity		London		51 N 16 W	30 June	6758
Victoria		London		51 N 16 W	30 June	6758
Volusia		Liverpool		33 N 75 W	13 June	6758 Lost bowsprit.
William		Liverpool	StAnn's Shls.	15 May	6755	
William		Cork	Quebec	46 N 43 W	29 June	6761 Lost m.t. mast
William		Belfast	Baltimore	51 N 13 W	27 June	6761
William IVth.	Brown	Dublin	St. Andrews N. B.	43 N 58 W	.....	6761
William Fairlie		London		30 S 36 E	20 April	6758
William Fenning		Liverpool	Rio Janeiro	2 S 23 W	4 June	6755
Ythan		Miramichi	Newcastle	48 N 44 W	21 June	6761

MOVEMENTS OF TRANSPORTS.

ARAB—Lieut. Harris, 8th June, sailed from Cork for Ceylon.
 AMPHITRITE—Lieut. Cooley, 4th July, arrived at Sheerness.
 HOPE—Lieut. Ryder, 27th June, sailed for Bremen.
 LORD WELLINGTON—Cork.
 LEONIDAS—Lieut. Woolridge, 13th June, sailed for Quebec.

MARSHALL BENNET—Lieut. Ward, 11th July, arrived at Portsmouth, from Barbadoes.
 ORESTES—Lieut. Garret, 15th May, sailed for Quebec.
 PRINCE REGENT—Ionian Islands.
 WANDERER—Lieut. Young, Valparaiso.
 WILLIAM HARRIS—Lieut. Stevenson, 8th May, sailed for Halifax.

ADMIRALTY ORDERS.

ADMIRALTY ORDERS, &c.

(Circular.)

No. 81, substituted for former Order of this date.

"Orders by the Commissioners for executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, &c.

"Whereas we have thought fit to discontinue the practice of Mustering the Crews of His Majesty's Ships and Vessels, by the Master Attendant, or his Assistant; as heretofore ordered.

"We do hereby direct, that, in future, the Commander-in-chief at the respective ports, or one of the senior Captains, whom he may appoint in his stead, (taking to their assistance his Secretary, or Purser, or an experienced clerk) shall occasionally visit, at such periods as he may think fit, (provided the

same be done twice in each month,) such of His Majesty's ships and vessels, as may be under his command, and in presence of his Flag, and shall then carefully muster their Crews; he is to observe, that their muster-books be perfectly regular and complete; that all entries and discharges therein be strictly correct; and he is to prepare an exact statement of the numbers borne, mustered, and checked, (as per form) agreeing with the ship's Muster Table; which statement of the Crews of such ships and vessels, as he may have so mustered during the week, shall be forwarded so as to reach our Office every Sunday morning: the same being previously copied into the abstract which is to be kept in the Commander-in-chief's Office.

"It is our farther direction, that he make, or cause to be made, by the senior Captain as aforesaid, a more strict and particular muster and inspection of every ship or vessel, a few days before they proceed to sea, (particularly of those recently commissioned,) when the

entries and discharges in the muster-books are to be carefully examined, and the authority by which they have been made, ascertained, of which an additional certificate is to be given.

"The same forms of mustering the crews of His Majesty's ships and vessels are to be attended to abroad, by the respective Commanders-in-chief, or by a senior Officer, in his absence, who is to forward the statements as above required, to our Secretary, by every fit opportunity; an abstract of the same being always preserved by the Commander-in-chief, to whom the senior Officer, who may have mustered, is from time to time to transmit them.

"As we deem this service of the utmost importance, we cannot too strictly call the attention of all Flag and senior Officers to it, or enforce their due observance of it.

"The foregoing regulations are to commence on the 1st July next, on Home Stations; and on Foreign Stations, so soon as it may be practicable, after the new Muster-Book shall have been received.

"Given under our hands this 13th day of June, 1832.

"T. M. HARDY,
G. BARRINGTON.

"To all Commanders-in-chief, Flag Officers, Captains, and Commanding Officers of His Majesty's Ships and Vessels.

"By command of their Lordships,
"JOHN BARROW."

"Admiralty, 2nd July, 1832.

DESCRIPTION OF THE SWORD BELTS TO BE IN FUTURE WORN OVER THE COAT BY COMMISSIONED OFFICERS OF THE ROYAL NAVY, AND BY OTHER OFFICERS RANKING WITH COMMISSIONED OFFICERS.

Admirals.—Blue Morocco Leather, lined, full one inch and half wide in the Girdle; single, *one inch wide*, Sword slings or carriages:—the whole embroidered in Gold with

Oak leaves and Acorns down the middle, and margined with a straight line near each edge;—gilt mountings with circular fronts, two inches diameter, laurel embossed edges, crown, anchor, and laurel in the centre:—embossed carriage buckles, plain girdle buckles and rings, the latter one inch and 3-4ths diameter in the centre, plain studs under the carriage buckles for the more easily attaching and detaching the sword—a plain strong hook attached to the ring to suspend the sword short.

Captains and Commanders.—"Black Morocco leather, lined, same dimensions as above, embroidered in gold, with three straight lines, one down the middle and at each margin near the edge:—gilt mountings with circular fronts, with embossed laurel edges, crown and anchor in the centre; plain carriage and girdle buckles, with studs under the latter as above, and plain gilt ring and hook.

Lieutenants, and Officers ranking with them.—Black Morocco leather, lined, same dimensions as above, embroidered in gold, with a straight line near each edge:—gilt mountings, &c., the same as the captains.

Admirals' undress Belts.—"Black patent leather, full one inch and half wide in the girdle—single, *one inch wide*, sword slings or carriages:—gilt mountings with circular fronts, two inches in diameter; laurel embossed edges, crown, anchor, and laurel in the centre; plain carriage buckles and rings, the latter 1 and 3-4ths inches in the clear; plain studs under the carriage buckles for the more easily attaching and detaching the sword, thereby superseding the use of swivels—a plain strong hook attached to the ring, to suspend the sword short.

Captains and Commanders.—"As above, but with the crown and anchor only in the centre of the ornament, as in the dress-belt.

Lieutenants, &c.—"The same as captains in all respects.

"By command of their Lordships,
"GEORGE ELLIOT."

FOREIGN MAILS.

For CALCUTTA—Horatio, Harfield, West India Dock, 1st August.

Roxborough Castle, Denny, West India Dock, 1st August.

MADRAS—Alfred, Tapley, West India Dock, 20th August.

Mary Ann, Hornblow, West India Dock, 15th August.

Births.

Lately, at South Eford, the lady of Capt. Forrest, R. N. of a daughter.

At Primrose Villa, Ryde, Isle of Wight, on the 26th June, the lady of Lieut. J. G. M'Kenzie, R. N. of a son and heir.

On the 29th of June, at Southsea, the lady of John Kidd, Esq. surgeon, R. N. of a son.

On the 6th of March, at the residence of her father, T. Couper, Esq. St. Simon's Island, Georgia, N. S. the lady of first Lieut. Fraser, half-pay, Royal Marines, of a son.

On Wednesday, the 4th of July, the lady of Lieut. Alfred Kortwright, R. N. of a son.

At Hythe, the 7th of July, the lady of Capt. Willes, R. N. of a son.

At Odiham, on Thursday the 5th of July, the lady of Captain John Scott, R. N. of a son.

The lady of Capt. Henry Kent, R. N. of a daughter, still born.

On the 8th of July, at Ryde, the lady of Lieut. Thos. B. Maynard, of a son.

On Saturday, the 7th of July, in Hobart-street, Stonehouse, the lady of Lieut. J. Cornish, R. N. of a son.

At Cliff Cottage, near Truro, the lady of Capt. Temple, R. N. of a son.

On the 14th of July, the lady of Lieut. W. G. Pearne, R.N. South Barracks, Walmer, Kent, of a son.

On the 16th of June, at Stubbington, the lady of Captain James Anderson, R.N. of a son.

On the 12th of July, at Farenham, the lady of Captain Chads, R.N. of a son.

MARRIAGES.

At Clifton, on the 21st of June, Lieut. Thomas M'Leroth, Royal Marines, to Anna Maria, daughter of the late Thomas Gelston, Esq.

On Thursday, the 21st of June, at Kingston, George Heather, Esq. master, R.N. to Mary Ann, daughter of Mr. John Holmes, clerk in H.M. dock-yard.

At Richmond, on Thursday, the 28th of June, by the Hon. and Rev. Gerrard Noel, Barrington Reynolds, Esq. captain, R.N. of Penair, Cornwall, to Eliza Anne, third daughter of M. Dick, Esq. of Richmond Hill, Surrey.

Lately, at Stoke Church, Plymouth, by the Rev. W. St. Aubyn, Mr. W. Harriott, master, R.N. to Hannah, youngest daughter of Capt. Hellock.

At Dawlish, Capt. George Sidney Smith, Royal Navy, to Lucy, daughter of James Goss, Esq. of the same place.

On the 20th July, at Saint Pancras, by the Honourable and Rev. Hugh Tollenmache, rector of Harrington, Lieut. George Davies, R.N. to Julia, fourth daughter of Joseph Hume, Esq. of Percy-street, Bedford-square.

DEATHS.

At the Isle of Mann, Lieut. A. Mackenzie, (1808,) aged 52.

In March last, in Montego Bay, Jamaica, highly respected by his brother officers, and beloved by all his friends, Lieut. David Mosbery, of H.M.S. Ariadne, in the 36th year of his age.

Lieut. Griffith Bevan, (1809,) R.N.

Rear-admiral James Oughton, (1825,) R.N. most deservedly esteemed and universally regretted.

Lieut. T. E. Knight, (1811,) R.N. a correct and brave officer, and an honourable man, killed by smugglers when attached to the Coast-guard of Weymouth.

Mr. Haacott, carpenter of the Amazon, and Mr. Powell, gunner of the Defence, both of Sheerness, of cholera.

At Kensington, a short time since, Mr. John Lamb, master, R.N. and late in the command of the Castle Forbes, Indiaman.

At Drayton Market, retired com. W. Sandy, R.N.

In Clowance-street, Devonport, Mr. Zeph. Bludell Ostler, purser in the Royal Navy, (1813.)

On Thursday, the 19th of July, at King-street, Plymouth, Mr. A. Brown, carpenter of H.M. brig Procria.

At Edmonton, a few days since, Lieut. W. Taylor, R.N.

FATAL AFFRAY.—On Thursday, the 28th of June, as Lieutenant Knight, of the Lul-

worth Preventive Station, was going, accompanied with one of his men, of the name of Duke, to meet his men on duty, he unexpectedly fell in with a party of smugglers, who, the moment they discovered him, threatened in a most menacing manner, being all armed with swivels, if he advanced, to kill him. Lieut. Knight halted, and after consulting with his man advanced, when the party immediately surrounded and fell on them. Lieut. K. fired a shot over their heads, and afterwards in his own defence amongst them: his man Duke also fired amongst them. Lieut. K. and Duke, placing themselves back to back, continued to contend with them, but at length were overpowered by numbers, and beaten by the ruffians most unmercifully, and until they were apparently lifeless; after which they dragged Lieut. K. a short distance, and threw him over the cliff, leaving Duke for dead on the ground. This occurred about a mile and a half westward from Lulworth, on the coast. Lieut. Stocker, of the Osmington Station, being out on duty, happened to be near, and seeing flashes of fire, answered by signal, and hastened with all possible speed to their assistance; on his landing, the smugglers had all retired, and after a short time he found Lieut. Knight lying on the beach quite insensible and nearly lifeless. He got him immediately removed to his residence, and medical assistance was promptly had, but he died the following evening. Several of his ribs were broken, and considerable laceration of the lungs, &c. with other mortal internal injuries; the external injuries were of the most violent description, and bore ample testimony of the brutality exercised by these lawless marauders on their unfortunate victim. Lieut. Knight was buried on Tuesday, the 3d of July, at Weymouth, the officers and men of the neighbouring Preventive stations attending. A long train of naval and military officers and gentlemen, connected with the customs, the post-office, and other government offices, followed, tendering this last mark of respect to the memory of a deserving and meritorious officer, and which closed the melancholy spectacle. Lieut. Knight was much respected, and his premature death has excited general regret. It is a remarkable circumstance that this occurrence happened on his birth-day, he having attained the age of 42 on Thursday. His disconsolate widow and family of five children are left as a bequest to the country, whose liberal and generous sympathy will no doubt be exerted to alleviate the heart-rending distress, inseparable from such a sudden and lamentable catastrophe. The goods which were landing, and procured the dreadful result, were taken by the Preventive men, twenty-nine tubs. We hear that Duke, the man who accompanied Lieut. Knight, and stood so bravely contending with him, is likely to recover, although battered and bruised to an alarming degree.

His Majesty has offered a reward of £1000 for the apprehension of any person connected with this desperate affray.

THE
NAUTICAL MAGAZINE,

ſc.

SEPTEMBER, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

55. LIGHT VESSEL ON FALSTERBO REEF, ENTRANCE OF THE
BALTIC.

Captain Zhartmann, of the Royal Danish Navy, the hydrographer at Copenhagen, in a letter to Captain F. Beaufort, hydrographer to the Admiralty, states, that the light vessel on Falsterbo Reef, at the entrance of the Baltic, is no longer continued at her station. It had been customary to keep a light vessel in this important position during the summer months, for the safety of navigators; and in art. 24 of Hydrography, in our second number, are the particulars concerning it.

Navigators are therefore warned, that the above light is discontinued.

56. NOTICE TO MARINERS.—CAUTION : PAKEFIELD LIGHT.

Trinity House, London, 27th July, 1832.

“Masters of Vessels, Pilots, and other persons, navigating between the *Barnard and Newcome Sands*, by the *New Light* at *Pakefield*, are hereby cautioned, that, during certain states of the atmosphere, a faint Light, from that *Light House*, may be seen at both the *South Newcome* and *Barnard Buoys*; and they are informed, that the said *Light House*, at *Pakefield*, bears from the

Barnard Buoy - - - N. by W. $\frac{1}{2}$ W.—and from the
South Newcome Buoy - W. by N.

And they are therefore recommended, when working between those Buoys, to tack short of the above-mentioned bearings.—Vessels navigating with a fair wind, should keep the Light bearing N.W.

“By order,

“J. HERBERT, Secretary.”

3.—REMARKS on the Geographical Positions of several Places visited on Voyages to the ISLANDS OF NEW ZEALAND, made in the Years 1822, 1825, 1826, and 1827, with Explanatory Notes, by James Herd, Commander of the barque *Rosanna*.

NAMES OF PLACES.	LATITUDES.	LONGITUDES.	HOW DETERMINED.
	<i>South.</i>	<i>West.</i>	
Trinidad, west side,	29° 16' 45"	20 sets of dists. and chrons. Chronometers. Lunar distances (see note 1.)
Tristan da Cunha,	37° 6' 33"	11 57 43	
		11 59 45	
St. Paul's Island,		<i>East.</i>	
Nine-Pin Rock,	38 43 47	77 18 45	Chronoms. & Lunars, 1821. Chrons. } in 1825, Lunars, } (see note 2.)
		77 23 15	
		77 22 19	
Snares, N.E. Island,			
North Point,	48 3 48	166 20 15	Lunars corresponding with Chronoms. (see note 3.)
NEW ZEALAND.			
Southern Port.			
— South Island,	47 11 31	167 26 45	40 sets Lunar distances taken on the beach, abreast the anchorage, (see note 3.)
— Cable Island,	47 12 55	167 26 30	Reduced from above.
— South Cape, .	47 17 25	167 18 30	
— S.W. Cape, .	47 16 37	167 14 30	} Reduced from Cable Island.
South Trap . . .	47 29 43	167 36 30	
North Trap, . . .	47 23 7	167 42 30	
Sugar Loaf Passage,	47 13 46	Mer. Alt. from artif. horizon. Do. Do. (see note 3.)
Broad Passage, .	47 11 0	.....
Cape Saunders, .	45 53 55	170 33 30	{ Lunar dists. and chrons. } from Southern Port.
Saddle Hill . . .	45 57 0	170 15 0	
Otago Harbour, .	45 46 28	170 36 45	(See note 4.)
			The situation of these places were partly de- termined on shore, and partly at sea, by inter- sected bearings; the base being measured by the patent log, and every at- tention paid to the course steered; this was on the outward voyage. Home- ward bound, nine days from Sidney, (where the chrons. were rated,) the situations were corrob- rated by the means of three chrons. agreeing within a trifle of each other, and differing in many instances not one mile from those first taken. (See note 5.)
Cape Campbell, .	41 33 16	174 15 0	
Mangi Nui Harbour	41 19 4	174 5 0	
C. Roamaroa, . .	41 6 5	174 29 15	
Queen Charlotte's Sound, between Motuara and Long Island,	41 5 30	174 25 45	
— Ship Cove, . .	41 7 5	174 20 0	
Cape Tierawitte, .	41 18 47	174 42 45	
Wangi Nui Atra, or Nicholson's Harb.	41 22 7	174 51 15	
Cape Pallisser, . .	41 34 46	175 24 45	

NAMES OF PLACES	LATITUDES.	LONGITUDES.	HOW DETERMINED.
	<i>South.</i>	<i>East.</i>	
East Cape, . .	37 44 30	178 36 15	Chronometers.
White Island, . .	37 30 46	177 14 45	Do. and Lunars.
Mercury Bay, entr.	36 48 1	.....	Mer. Alt. by natural horizon.
— anchor.	36 50 13	175 51 0	(See note 6.)
River Thames, an- chorage in 4 fath.	37 5 45	175 25 30	Chronometers and Lunars, (see note 7.
— N.W. point	36 47 30	175 10 33	Chronometers.
Cape Colville, . .	36 26 29	175 22 0	
Point Rodney, . .	36 20 26	.....	Longitude not determined, (see note 8.)
Bream Head . .	35 51 32	.....	Ditto.
Bay of Islands.		174 9 33	By diff. of Long. by chron. from River Thames.
— Karadier beach	35 15 45	174 16 27	By Do. from C. Maria, Van Diemen.
		174 21 45	By Do. from Sydney.
		174 15 55	Mean, considered as nearest the truth.
— Tippoonah, . .	35 10 25	.....	Mer. Alt. by artificial horiz.
North Cape, . .	34 24 29	173 9 48	By diff. of Long. from Bay of Islands, by chron. (see note 9.)
Cape Maria, Van Diemen, . .	34 29 49	172 48 58	Do. Do.
Three Kings, . .	34 12 8	172 22 48	Mer. Alt. and intersected bearings.
Cavelles, N. point,	34 58 28		This Island bears from Point Pocock N. 55° W., by compass, distant 3 or 4 leagues.
Reef Point, . .	35 10 25	173 12 47	Chronoms. and Lunars.
Inlet or Harbour . .	35 17 19	173 22 17	Do. This inlet has been taken for Jokeehangar River, by which mistake a schooner, and all hands were lost.
Jokeehangar R., North Head, . .	35 31 22	173 31 45	By diff. of Long. from Bay of Islands, by chron.
— South Head, .	35 32 3	173 31 45	Do.

Some of the longitudes in the above Table, mentioned as by lunars, are not to be considered as the result of separate sets of sights, but as having been measured by chronometers, from a meridian determined by lunars. The latitudes of places, when not ascertained on shore, were found by meridional observations from the natural horizon, taken in their parallel.

NOTE 1. The latitude of *Tristan Da Cunha* was ascertained by observations taken on shore by the artificial horizon, as was likewise the time for chronometers, within one hundred yards of Cascade point. From this point Inaccessible Island bears by compass S. 63° W., distant twenty to twenty-one miles; from the S.W. point of Tristan Island, Nightingale Island bears S. 28° W. From Cascade point to the S.W. point, the coast lies S.W. b S. and N.E. b N. about four miles. When I touched here in 1821, our chronometers made the longitude (from Rio Janeiro) a few miles more to the westward, or in $12^{\circ} 5' 0''$ west. The variation in 1825 was $10^{\circ} 59' W.$ Were *Tristan da Cunha* better known it, might be of great service to ships bound to India, and particularly to New South Wales, as water is very easily obtained, and also live stock and vegetables of every description. With the wind from West round by South to N.N.E., in moderate weather, ships can always lie within two miles of the watering place. The only winds that render it inaccessible are those from North to W.N.W., and these are generally of short continuance; so that rather than put into the Cape, or *Rio*, it would save time and expense to get refreshment at this place. On making the Island, if the wind was from the northward, I would haul off to windward of Inaccessible Island, and lie there until the wind backed to W.S.W., which at the longest duration will not be more than two or three days. This I did in 1825, when we took on board twenty tons of water, two bullocks, twelve sheep, six pigs, several dozen fowls, and thirty hundred weight of potatoes, and vegetables, which served all hands as long as they would keep good: had the people on shore a hose, the water might always be filled without taking the casks out of the boat, or even bringing her into the surf.

Note 2. *St. Paul's Island*. I have visited this island twice. In the first voyage our chronometers were excellent, and corresponded within a few miles of lunars observed on three successive days preceding our arrival, and two days after our departure. On the second voyage, the result was nearly the same, which will make the longitude nearly that assigned it by Captain Bligh in the *Bounty*; at all events, while a doubt remains of its true position, there can be no harm in placing it in the most westerly longitude, as all ships make it from that quarter, and generally in blowing and dirty weather; so that 30 miles of difference of longitude may cause some serious misfortune. Were a hexagon cut through the middle, and the one half removed, it would give the shape of this island, the diameter being the eastern side, and lying nearly in a straight line N. b W. and S. b E. not above 4 miles in length. About $\frac{1}{3}$ from the north end is the basin, with a pyramidal rock lying a little to the northward of its entrance, and detached from the island a cable's length or two. When we landed in the first voyage, there were 8 feet water over the bar into the basin; the last time there were nine. As the water falls, hot water will be found by digging a hole in the beach below high-water mark; our thermometer stood, in some holes we made, at 180° . Several pigs were seen in the first voyage, but none in the last; abundance of fish were caught, both in the basin and also outside; these latter being the best. Boats should be cautious in landing here, both on account of the sudden gusts of wind that come from the basin off the high land, and also on account of the surf, which is not seen until they are too near to avoid the danger. A boat belonging to a ship bound to India, with the crew and several passengers, was lost in this way some time before my last arrival, the bones of some of whom we picked up on the beach. The basin indents at least one-third of the island's breadth.

Note 3. *Snares Islands* are in two groups, bearing S. 38° W. and N. 38° E. from each other. They are divided by a channel nearly 3 miles broad, in the centre of which the sea broke in several places; the northern group is high, and

covered with trees and verdure. The N. E. side of the group is accessible, and of gradual ascent, and the shores appear to have some fine sandy bays; the S. W. side of this group presents a dreadful precipice, on which the swell beats with great violence. The S. W. group consists of five or six barren inaccessible islets, or rocks, the sides of which are perpendicular, and covered with the dung of birds. There appear to be a number of shoals and reefs amongst these islands, so that, if possible, they had better be avoided. The latitude of these islands was determined from meridional altitudes, horizon good, with two sextants; the longitude, from chronometers and lunar distances, taken on three consecutive days preceding our arrival. The difference of longitude, measured by chronometers, to the anchorage at the back of Cable Island, in Southern Port, was $1^{\circ} 6' 36''$, the interval of time being 24 hours. The distance measured by the patent log to Broad Passage was 69 miles, the course steered N. E. b E. a little easterly by compass, which proves the ship to have been very little influenced by currents, as the observation gives distance 69 miles, course N. 41° E. true. In the description of *Southern Port*, it is necessary to refer to Stewart's Sketch in mentioning this harbour, as I adopt his names. We lay here six weeks, during which time upwards of 40 sets of lunar distances were taken east and west of the moon, the mean of which gave $167^{\circ} 26' 45''$; and a number of meridional altitudes from the artificial horizon gave the latitude $47^{\circ} 11' 31''$. The variation of the compass, by a number of azimuths, with three compasses, gave $17^{\circ} 4' 30''$ E. The longitude by chronometers on our arrival corresponded within 2 miles of this mean; from these data the latitude and longitude of *Cable Island* was computed, and from it the other places mentioned. From the summit of Cable Island, the South Capes, the Traps, &c. could be seen, and bear as follows: the *South Cape*, S. 33° W. distant 7 miles; the *S. W. Cape*, S. 49° W. 9 miles; the *Northern Traps*, S. 64° E. about 5 leagues; the *South Traps*, S. $38^{\circ} 30'$ E. about 6 leagues, all compass bearings; and from which bearings and distances I have computed their positions. This longitude and latitude differ considerably from that given by Purdy, computed from Stewart's Sketch; the latitude being the more surprising, as the most common navigator can generally ascertain that tolerably correct. This error rather astonishing me, when Stewart arrived I mentioned the circumstance to him, and he told me that when he drew the sketch he had nothing but a quadrant, no artificial horizon, and only a boat compass to assist him. With these slender means, it is indeed surprising that he has made the sketch so correctly. In the latitude of Cable Island, Stewart's Island is not more than 5 miles broad. This harbour or sound (Southern Port) would contain the whole navy of Great Britain secure from all winds; at present it affords a station for the New South Wales seal-fishers, who are not very successful. A ship bound from India to Peru, or Chili, may, in case of carrying away a topmast or yard, supply herself here, or recruit her water; which, by the bye, is not very good. When we were here, it had a reddish tinge, and imparted that colour to every thing it touched, and was also very astringent, which we thought was caused by the decayed vegetables it ran through. This is the most rainy and boisterous part of the world I was ever in.

Note 4. *Port Otago* is an inlet, or arm of the sea, running up about 9 miles S. S. W. making a peninsula of the land on which is Cape Saunders, bearing from the said cape N. b W. by compass, about 2 leagues distant. This is a well-sheltered harbour, with a bar across the entrance, having $3\frac{1}{2}$ fathoms over it at low water, and from 7 to 9 fathoms inside. The course in, is S. b E. keeping the larboard, or east shore, on board, until a mile and a half within the heads, when a vessel will be completely land-locked. As the bar is within the heads, there is never any sea on it. Variation $17^{\circ} 5'$ E. High-water full and

change 20 minutes past 3 P. M. The tide rises about 9 feet. In latitude $45^{\circ} 24' 26''$ and longitude $170^{\circ} 50'$ lies a reef nearly level with the water, and about 3 miles from the shore, on which we had nearly struck.

Note 5. From what is called in the chart *Point Lookers-on*, as far as Cape Campbell, we found the land from 15 to 20 miles of longitude too far east; in fact, there is no part of the islands of New Zealand worse laid down than *Cook's Strait*, which is the more singular, as Cook was so much about it: except in the vicinity of *Cape Koamaroa*, the chart bears not the least resemblance to the land; what is termed in the chart *Cloudy Bay*, is in fact not a bay, but nearly a straight coast, and very low, being between two high lands; at a distance, it has the appearance of a deep bay. In the centre of the low land runs a river, the bar of which at times is scarcely navigable for canoes, owing to the surf and shallow water. Two miles and a half from this flat, or low land, and to the northward, is *Mangi Nui*, an excellent harbour, and well sheltered from all winds. From this harbour Cape Campbell bears $S. 35^{\circ} E.$ by compass, distant about 5 leagues; and a point of land to the northward of the cape, at the commencement of the low land, bears $S. 21^{\circ} E.$ distant about 3 leagues; the high snowy mountains $S. 11^{\circ} W.$ Cape Tierawitte $N. 60^{\circ} E.$ and Cape Pallisser $E.$ by compass. The course into this harbour is $N. b W.$ having 11 fathoms at its entrance, which a vessel may pass 3 miles up, and lay sheltered from all winds. There the water is excellent, and the shore covered with wild cabbage and South Sea cress.

Wangi Nui Atra, or Port Nicholson harbour, bears from Cape Pallisser $N. 74^{\circ} W.$ by compass, distant about 8 leagues, and from the high snowy mountains $N. 40^{\circ} E.$ The course up this harbour is $N. 6^{\circ} 30' W.$ for nearly 9 miles. Here all the navies of Europe might ride in perfect security: at the entrance there is 11 and 12 fathoms water. Viewing the coast on the eastern side of *Cook's Strait* (when off and within a few miles of Cape Campbell) from Cape Pallisser to Cape Tierawitte, it forms in three table lands, Cape Pallisser being the first; the table land which forms the east entrance of *Wangi Nui Atra*, the second; and Cape Tierawitte, the third: between these table lands at this distance there appears to be two deep bights, which is not the case, but low land nearly level with the water. By the above description, this harbour may easily be discovered, as it is close under the north part of the middle table land.

Note 6. The longitude of *Mercury Bay* was determined from chronometers agreeing with lunars, taken east and west of the moon, when near *White Island*, some few days previous to our arrival, and which I considered very good, the weather being very favourable. We had five sets of lunar distances while lying in the bay, but being only taken on one side of the moon, and the terrestrial refraction being so great, that we could neither determine the latitude, nor rate the chronometers, from the natural horizon, I do not think they can be correct, although agreeing with each other; and therefore give the preference to the chronometers. The lunars made the bay in $175^{\circ} 20' 15''$, differing $30' 45''$ from the chronometers.

Note 7. *River Thames*. The same remarks on the lunar observations, made at *Mercury Bay*, are applicable here. We had here five sets of distances, which gave longitude $175^{\circ} 10' 45''$, differing from the chronometers $15' 15''$ to the westward; such was the refraction here, that the latitude by meridional altitudes differed upwards of 3 miles. The difference of longitude from *Mercury Bay* to this station, by chronometers, was $24' 39''$, and from the ship, Cape Colville bore $N. 16^{\circ} W.$; the entrance of *Fresh-water River*, or *Thames*, $N. 80^{\circ} E.$; entrance of the *River Piacho*, $S. 50^{\circ} E.$; and the N.W. point of land in sight, $N. 35^{\circ} W.$ Variation $12^{\circ} 38' E.$ This would place Cape Col-

ville in $175^{\circ} 22' 30''$; and as the bearings are so near the meridian, the longitude cannot be far wrong.

Note 8. A dangerous *Flat Rock*, nearly level with the water, lies off the first point of land to the eastward of Point Rodney, nearly 3 miles, and bears from Cape Colville W. 10° S. by compass, and S E. from Point Rodney, right in the fair way between it and Cape Colville.

Note 9. At the *Bay of Islands* we had no opportunity of getting lunar distances, and have therefore approximated the longitude by the difference of longitude from the Thames, and likewise from Maria Vandiemen, and Sydney, which I think will be found not far from the truth. To the eastward and westward of Cape Maria, we had 18 sets of lunar distances, differing very little from each other; the mean of which made the cape in $172^{\circ} 49' 30''$, which is within a trifle of the longitude I assign it in the table annexed. The difference of longitude, measured from the anchorage at the Thames to the Bay of Islands, by chronometers, was $1^{\circ} 15' 57''$ W. and from the Bay of Islands to the North Cape $1^{\circ} 6' 7''$ W.; from the North Cape to Cape Maria Vandiemen, $20^{\circ} 50''$: making the whole difference of longitude from the Bay of Islands to Cape Maria Vandiemen $1^{\circ} 26' 57''$ W. the chronometers from the Bay of Islands to the Heads of Jokeehangar, $44' 10''$ W. and from the Heads of Jokeehangar to Sydney, in a run of 12 days, the mean of the chronometers gave $22^{\circ} 15' 15''$, which would make the heads of that river 3 miles more to the westward than I have put them in the table; but it is, in my opinion, difficult to say which is most correct. The variation at Jokeehangar was $13^{\circ} 23' E.$; Percy Island, off Cape Bren, bears from Point Pocock N. $76^{\circ} 30' E.$ by compass, distant about 3 leagues.

(Signed)

JAMES HERD,

Commander of the barque Rosanna.

It is with much satisfaction, that, through the kindness of Mr. J. W. Norie, we have been enabled to record these valuable observations of Mr. Herd for the use of navigators; and we trust that they may be the means of inducing other Commanders of our numerous merchant vessels to avail themselves of those frequent opportunities they have of making others. The surveys made by Mr. Herd, of the various harbours alluded to, are published by Mr. Norie.

ON THE LONGITUDE OF NEW ORLEANS.

To the Editor of the Nautical Magazine.

SIR,

IN the Bulletin of the Geographical Society of Paris, for March, Vol. xv. No. 95, page 97, is the report of M. Brue on the Map of the United States, published by Tanner, in which I find the following paragraph:—

“New Orleans, which Blunt and Bowditch place in lon. $92^{\circ} 29' W.$, is placed in Tanner's map only in $92^{\circ} 16' W.$, whilst with respect to Natchez, which Ellicot and Ferrer have determined from an observation of one of Jupiter's satellites, the longitude of New Orleans would be $92^{\circ} 26' W.$ The difference which Tanner's chart shews is about 10 minutes less. With respect to the mouth of the river Sabine, it is generally agreed to place it, with Darby, in $96^{\circ} 17' W.$, from whence, as far as the parallel of $27^{\circ} 10'$, the point which Ferrer fixed by chronometers from Campeche, there have been no observations.”

Referring to the geographical position of New Orleans, it will be as well to shew the data on which Ellicot and Ferrer found its position, and at the same time to remove the error of M. Brue on this point.

Ferrer says, in one of his Memoirs in MS.,—"New Orleans, 15th January, 1799. The occultation of Jupiter by the moon was observed in this city by Mr. Andrew Ellicot:—

	New Orleans.			S. Fernando.			Paris. By Mechain.		
	h.	m.	s.	h.	m.	s.	h.	m.	s.
Immersion of the centre of Jupiter,	5	45	46,5	13	29	43,8	13	50	12,5
Emersion of Ditto,	7	06	20,0	.....				
Immersion of the 1st Satellite of Jupiter,	5	41	40,0	13	25	35,0			
Emersion of the same,	7	02	34,0	.....				

By these observations, New Orleans is 6h. 9m. 46s. W. of Paris.
By the immersion of the 1st Satellite, 6 9 54 ..

Mean . . . 6 9 50, or, New Orleans is West of Paris 92° 27' 30". Ferrer also says, that these observations were made with great precision, and the calculations performed with the greatest care."

Comparison of New Orleans with Natchetz.

The difference of longitude which Ferrer determined between Natchetz (the house of Mr. Dunbar) and New Orleans, in 1801 within the interval of five days, was 0h. 5m. 16s. = 1° 19 9".

The eclipse of the Sun on the 6th of June, 1806, was observed in the house of Mr. Dunbar, situated 2' 15" West of the Fort of Natchetz, and having calculated it, and compared it with the observations made in Europe, the following result was obtained:—

The house of Mr. Dunbar, West of Paris,	h.	m.	s.
	6	15	3,0
Ditto, by several immersions and emersions of Jupiter's Satellites,	6	15	4,0
Mean	6	15	3,5
New Orleans, East of Mr. Dunbar's house	0	5	16,6
Longitude of New Orleans, West of Paris	6	9	46,9 (a)
Ditto, by the occultation of Jupiter	6	9	46,
Mean	6	9	46,45

or, 92° 26' 36,7" W. of Paris, and 90° 6' 16" W. of Greenwich.

If the immersion and emersion of the 1st Satellite be admitted, we shall have—

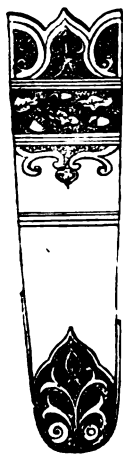
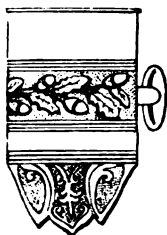
Occultation of the 1st Satellite of ♃	h.	m.	s.
	6	9	54,0
By the result (a)	6	9	46,9
By the occultation of ♃	6	9	46,0
Mean	6	9	48,96

or, 92° 27' 13,58" W. of Paris, and 90° 6' 53,58" W. of Greenwich.

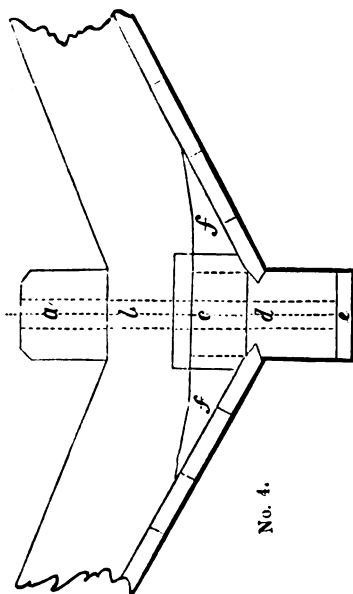
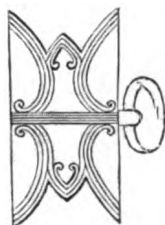
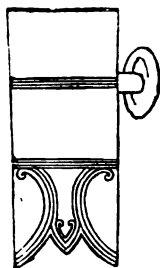
London, 4th June, 1832.

F. BAUZA.

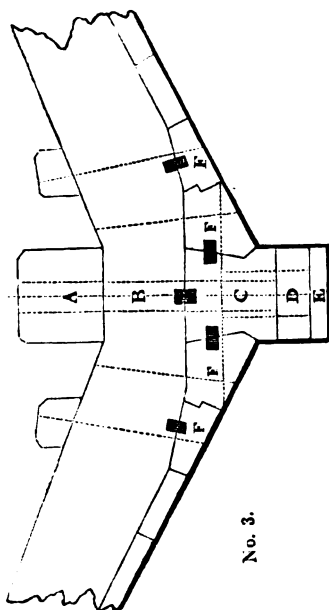
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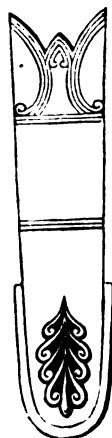
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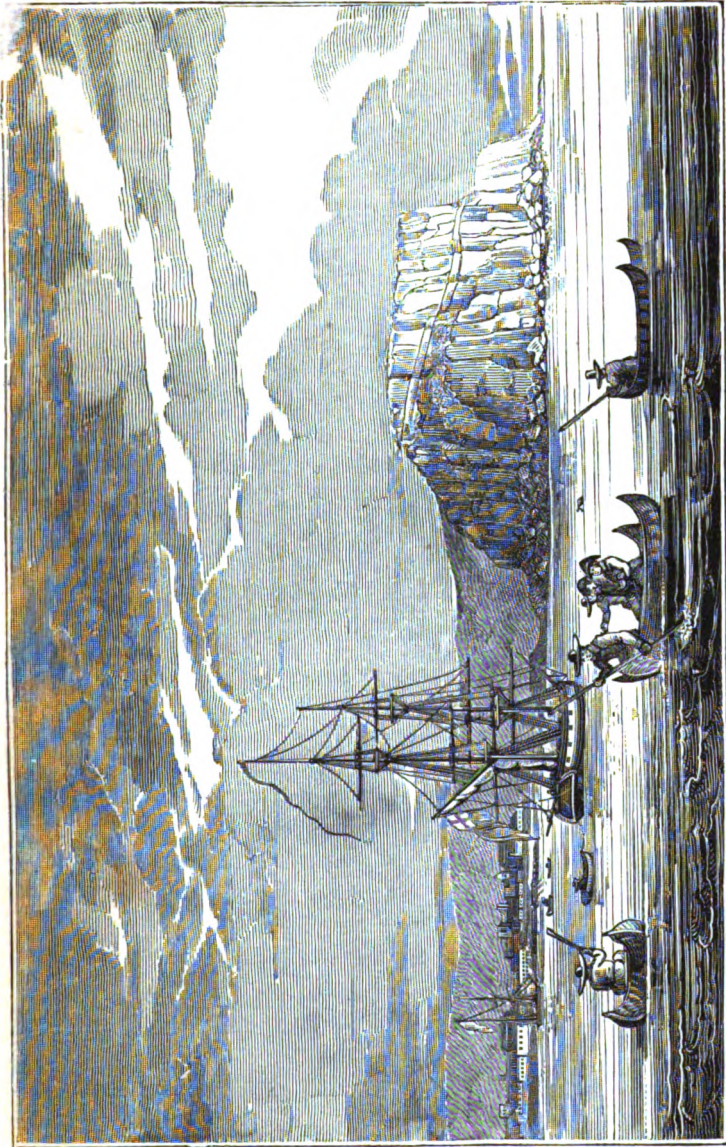
No. 4.



No. 3.



1875



Balsas at Arica—Peru.

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VOYAGES AND MARITIME PAPERS.

THE SOUTH AMERICAN BALSA.

AMONG the various contrivances produced by the ingenuity of man, for the purpose of overcoming obstacles to his pursuits, the balsa of South America may be justly considered a rude, but successful application of the most simple means. The Spanish word *balsa*, in a nautical sense, signifies a raft or float, and it is certainly well applied in the present instance. The use of this contrivance seems to be confined to the descendants of the Spaniards on the shores of Peru, and exposed, as the whole of that coast is, to a continual violent surf from the waves of the vast Pacific ocean, the communication with vessels in their various roadsteads would be much curtailed, were it not for the complete assistance afforded by the balsa. In the foreground of our present sketch is a representation of the balsa, seen in different positions. It is made of seal-skins sewed together, so as to form a bag about eight feet long, terminating in two points, and very much resembling the shape of the North American birch canoe, excepting that it is entire, instead of being open in the upper part. Being sewed perfectly tight, it is easily inflated through a tube at one end, which is secured by ligatures. Two of these bags are then placed together, so as to make a considerable angle with each other, the ends that meet being firmly secured together, to form the prow of the balsa. At a short distance from their ends, a small plank is placed across them, for the person whose duty it is at once to guide and propel the balsa through the water, which he does with a piece of wood formed as a paddle at each end. The raft is then completed by small pieces of wood, covered with matting, secured across the whole as far as the other extremity—which serve not only as seats for passengers and goods, but also to keep the two principal parts in their proper position. Thus constructed, the balsa is ready for service, and, when on the water, is so buoyant, that it floats on the very surface of the wave. It is, however, an unwieldy machine, and difficult to launch through the surf, should there be much wind, but at the same time a safe landing may be effected with it at any time. In doing this, the person who has the charge of the balsa paddles it towards the shore, and having reached the edge of the surf within a few fathoms, he watches for the highest wave, and manages, as it comes on, to keep the balsa on the top of it, with her bow to the shore. In a moment the balsa is hurried onwards, and in consequence of its buoyancy is washed fairly to the very extent that the surf reaches on the beach, and as the wave retires it is left safe on *terra firma*. The opportunity is immedi-

ately taken—the passengers and goods land in an instant, and all are quickly out of the reach of the next wave. A flat sandy beach is generally chosen for landing on, and that of Arica is particularly adapted for the balsa, as a boat cannot approach it within a considerable distance. The balsa will easily carry three passengers, besides the person who guides it, and is employed in conveying the merchandise from the vessels to the shore. Large quantities of dollars, and bars of silver, are also shipped off by means of this slender conveyance.

The town of Arica is one of those places so favourably situated in geographical position as to be destined at some period to rise into importance. Hitherto it has suffered much from the evils of war; and the strife of parties, contending for the reins of government, has carried sorrow and desolation into its streets. The following extract from a little work on South America, published a few years ago by Captain Hall, affords a good picture of its condition, which even these years have but little improved :

7th of June.—We anchored off Arica about mid-day, and on landing found the town almost completely deserted, and exhibiting in every part marks of having been recently the scene of military operations. The houses had been broken open and pillaged, the doors were mostly unhinged and gone, the furniture was destroyed, the shops and store-houses were empty. The first house we went to was that of the person styled governor: he was stretched on a mattress laid on the floor, for no bedstead or other vestige of furniture was left; and he was suffering under the cold fit of an ague. His wife and daughter were in an adjoining room, where they had collected a few friends; but they looked most disconsolate and miserable. The town had been attacked by a patriot force, and had, as usual, suffered by being made the scene of conflict. Most of the people had fled to the interior, and the empty streets and houses gave a silent desolation to the place, which was very striking. Such of the inhabitants as were obliged to remain, either from sickness or from other causes, were reduced to severe privations. We saw some families that had not a table nor a bed left, nor a chair to offer us when we entered; and the governor's wife declared she had not a change of dress: her daughter was in the same distress; a pretty little round-faced modest girl, whose attempts to tie a piece of a handkerchief round her neck, in the absence of all her wonted finery, was affecting enough. The people in general were silent, with an air of deep-settled anger on their countenances. That species of grief which breaks out in fretfulness and complaint is not characteristic either of the Spaniards or their descendants; and I have invariably observed amongst both a great degree of composure in their sorrow.

An English gentleman, who was passenger in the Conway, having letters to deliver to a Spanish merchant, we hunted long for him amongst the desolate streets, and at length learned that he, like the rest, had fled to the interior. We had some difficulty in getting mounted, but at length set off in quest of the Spaniard up the valley of Arica, the country round which is, in the truest sense of the word, a desert; being covered with sand as far as the eye can reach, without the slightest trace or hope of vegetation. The ground is varied by high ridges, immense rounded knolls, and long flat steppes, and far off, we get occasional glimpses of the lower ranges of the Andes, but, high and low, they are all alike—one bleak, comfortless, miserable, sandy waste. The colour of

the ground is sometimes black, generally of a dark brown, and here and there a streak of white occurs; but nothing more barren, forlorn, or uninhabitable, was ever seen. Nor can it be well conceived without being witnessed; at least all the ideas I had formed of such a scene fell infinitely short of the reality, which had the effect of depressing the spirits in a remarkable degree, and inspiring a horror which it is difficult to describe or account for.

In the middle of the valley ran a small stream of water, accompanied in its course through the desert by a strip of rich green, infinitely grateful to the eye, from the repose it afforded, after looking over the surrounding country. The road was judiciously carried amongst the trees, near the margin of the stream; and so luxuriant was the vegetation, that we fairly lost sight of the neighbouring hills amongst the great leaves of the banana, and the thick bushy cotton trees, the pods of which were in full blossom.

Being in quest of adventures, we rode up to the first house we came to, which we found occupied by a respectable old Don, a merchant of Arica, who had been totally ruined by the recent events of the war. He described the battles to us, and in very affecting terms recounted his own misfortunes, and, what seemed to distress him more, the loss of a great quantity of property belonging to others, entrusted to his care. His family were about him, but they were equally destitute; and the picture was every moment heightened by some little touch of distress, too trifling to be described, or to be thought much of at a distance. There is a romantic or picturesque sort of interest which belongs to well-described distress, that has no existence in the reality. In the one case, a multitude of small well-told circumstances, by giving force and apparent truth of effect to the imaginary picture, render it pleasing; but the very same circumstances, when actually witnessed, produce a totally opposite emotion. The universal look of sorrow, for example, the total discomfort, the pitiable make-shifts, the absence of ease and cheerfulness, the silence, the disordered aspect of every thing, the misplaced furniture, the neglected dress, and innumerable other details, all produce at the time a painful degree of commiseration for the sufferers, widely different from that pleasing sort of pity which description excites.

After a long search, we discovered the house of the Spaniard we were in quest of, an elderly man, who laughed and joked about the recent disasters in a manner that at first surprised us exceedingly; but we soon saw that it was the wild mirth of despair, a sort of feverish delirium; for he, too, was utterly ruined and broken-hearted, and soon relapsed, from the excitement our presence had caused, into a gloomy despondency. Whilst he and the gentleman who had brought him letters were discussing their business, I made acquaintance with a pretty little brown damsel, upon whom the distress of the times had fallen but lightly, for she smiled through all, and seemed very happy. She was a clever and conversable person, but resisted, with great adroitness, all our attempts to make out in what relation she stood to the master of the house, leaving us in doubt whether she were his wife, his mistress, his daughter, or his maid. She showed us over the beautiful garden and dressed grounds round the house; and we were well pleased to have our thoughts taken off the painful stretch in which they had been kept all day by the contemplation of so much wretchedness and unmerited calamity.

On returning to the town, we paid a visit to the curate, who showed us the church, which had been sacrilegiously broken open: the whole place, in fact, excited such a feeling of horror, that we were very glad to get on board again, to a scene of order, and peace, and comfort.

The promontory of Arica, a sketch of which we have given, is

one of those few headlands on the coast of Peru that resemble in some degree the white cliffs of our own coast. It is easily distinguished at a great distance from sea, and forms an excellent guide to the anchorage before the town.

ON THE INVENTION OF HADLEY'S QUADRANT.

To the Editor of the Nautical Magazine.

SIR,

You have reprinted in your third number, (p. 161,) a letter, which appeared in the Portsmouth Herald, and which renewed the claims of Godfrey to the honour of being the real inventor of Hadley's quadrant. The story is old, and yet I am not aware of any work, in which it has been examined as completely as it deserves. My failure may be occasioned by a limited acquaintance with books on navigation, but there may be some among your readers, whose knowledge of them is not more extensive than my own. The spread of science has been rapidly increasing of late years among members of the Navy, but they have been led to cultivate those parts with the greatest industry, from which practical utility is to be derived. This must be so: the historical department is comparatively of little importance to the active seaman, whose profession gives him no leisure for questions of speculative curiosity, and who, if he had leisure, could seldom possess the means of pursuing such inquiries. It may not, therefore, be superfluous for a landsman to offer you a few remarks, which have occurred in investigating the origin of the most useful astronomical instrument, which was ever put into the hands of a mariner. I confess that I feel deep interest in the question; there are others, who, probably, are not indifferent to it; and the discussion is the more pleasurable, because it affords the opportunity of doing justice to the ingenuity and originality of the American contriver, while it establishes the priority of the English invention.

John Hadley, Esq., was an active member of the Royal Society, and we are particularly indebted to him for improvements in the construction of astronomical instruments. He was one of the first who made any great progress in grinding mirrors for reflecting telescopes, and in 1731 he brought forward the most important invention of his quadrant. The account of it was read before the Royal Society on the 13th of May, and was published in the 420th number of the Philosophical Transactions. In the beginning of the following March, a person of the name of Plank professed to have invented a similar instrument, but it was so evidently taken from Hadley's, that he gained no share in the honour which he endeavoured to invade. Indeed, the following entry appears in the Journal of the Royal Society: "March 15, 1732. Mr. Hadley communicated a postscript to his description of the new instrument for taking angles: which being read, he was ordered

thanks, and was desired to prosecute this useful invention." It is not too much to conclude, from the wording of this minute, that his title to the discovery was then fully admitted; but it appears, from the same curious and authentic records, that, before the lapse of another twelvemonth, a rival came forward, whose claims required a very serious discussion.

"1733, Jan. 31. Mr. Jones communicated a letter from Mr. Thomas Godfrey, dated at Philadelphia, in Pensilvania, Nov. 9, 1732, concerning an improvement in the make and use of the marine instrument for taking altitudes, called a Bow." * * * * *

"He," Godfrey, "then takes occasion to mention, that about two years ago he hit upon an invention, of contriving an instrument, by means of two reflections, fit to take the altitudes of stars at sea, as also their distances from the moon, and from one another: and says, a letter concerning the description of it had been sent from his friend James Logan, Esq. to Dr. Halley, some time before, to which he refers for a further account."

"The letter herein mentioned, writ from Mr. Logan to Dr. Halley, dated in Pensilvania, May 25, 1732, was also produced and read."

"Wherein he gives a large account of Mr. Thomas Godfrey, as a young man prosecuting mathematical studies under great difficulties, being by trade a glazier; and who, among other things, had, about eighteen months before, invented an instrument for taking the distances of stars by means of two reflecting speculums, in such a manner as that it brought the two stars, tho' almost at any distance, so as to coincide together; one seen by a direct, and the other by a reflected ray. And then he gives a particular description of such an instrument, with an account of the uses that might be made of it in finding the longitude at sea, by the observed distance of the moon from a fixt star. The instrument itself appeared by the description of it to be formed on the same principles as that of Mr. Hadley printed in the Transactions, and very nearly of the same construction. One speculum, or quicksilvered glass, being fixt at the centre to a moveable index, and perpendicular to the same; and the other having a hole or aperture in it to see the object by direct vision, being fixt on the limb at the end of the telescope on an angle of about twenty degrees; so that the intercepted arch, which measured the angle between the reflecting planes, was half the angle made by the two objects brought thus together, one by direct, the other by reflected vision."

"It was observed, that altho' the description of this instrument at Philadelphia does in a manner correspond in all the material parts with that whereof there is already an account given in the Transactions; yet the nearness of the dates of these two inventions, compared with the distance of the places, made it seem almost impossible that the hint of the one could be taken from any notice given of the other."

"Mr. Jones had thanks, and was desired to return the same to Mr. Logan and Mr. Godfrey."

It may be remarked, that there is a degree of vagueness in the date here assigned to the rival invention, but there are circumstances which tend to render it more definite, than at first sight it may appear to be. Godfrey's own letter was written in November, 1732, and he mentions that the idea had then occurred to him about two years: Mr. Logan's letter had been written in May, just six months before, and he describes the invention as having

then been made about eighteen months. Now, either of these accounts might be considered by itself to be very loose ; but their precise agreement tends strongly to their mutual corroboration ; and as the claim would naturally be thrown back as far as justice would allow, we have good reason for concluding that Godfrey's discovery was not earlier than November, 1730. It is true that Hadley's paper was not read before the Royal Society till the following May ; but I am not aware of any evidence to prove that Godfrey's contrivance was known, till a still later period. If, therefore, we consider the time of publication, the advantage appears to be on the side of our countryman ; and if the actual execution is to determine the question, we shall find that the priority still rests with him. At the very next meeting of the Royal Society, Mr. Hadley distinctly met this part of the question.

"Feb. 7, 1733. Mr. George Hadley had leave to be present, at the desire of his brother.

"Mr. Hadley, (on occasion of the minute, concerning the instrument made at Philadelphia in November, 1730, much resembling his own, for taking distances and altitudes by means of two reflections,) said, that his brother, who was now present, was well able to inform the Society of the date of this invention here : by reason that he had the curiosity to make the first instrument with his own hands, before the thought was communicated to any one else."

"His brother, Mr. George Hadley, did thereupon produce a small instrument, as a model, under a foot radius, neatly fitted up with two specula of quicksilvered glass, and with a blind of coloured glass for observing the sun ; and with the other essential parts agreeable to the description given of such an instrument in the Philosophical Transactions, No. 420. And he did assure the Society, that the instrument which he now produced is the same individual instrument, which he made with his own hands, and which was compleatly finished by him in all its parts, and had been used in the way of trial several months before November, 1730. For he said it was, as he well remembers, some time about the middle of the summer of that year, that he had finished it. And, further, that he received the directions for making it from his brother only ; not having had the least reason to surmise there had been any such invention by any one else."

"Mr. Hadley had thanks for this communication."

From the equality of the angles of incidence and reflection, it immediately follows, that the angular variation of the reflected ray must be double of that which takes place in the surface on which it impinges. This enables us, with a quadrant, to measure as much as 180° ; but it may be fairly doubted whether the superior compactness which this gives to the instrument, is not overbalanced by a disadvantage which it introduces. For the limb being reduced to half its natural extent, each degree upon it is equally diminished in magnitude, and can consequently be no greater than it would be on a simple quadrant of half the radius. The great and essential merit of Hadley's quadrant is of much more importance than its form. With the cross-staff and the older instruments for taking angular distances, it was necessary

for the eye to be moved so as to judge of the coincidence of two different points with the rays which came from two separate objects. To observe in such a manner, must have required considerable experience and dexterity, especially when either or both of the objects were relatively in motion. Now, all this difficulty was removed by the contrivance, which makes the reflected ray enter the eye in the same direction with that which produces direct vision. It is remarkable that Dr. Wollaston (if I remember right) in describing the steps by which he advanced to the construction of his camera lucida, speaks of the effect produced by holding a pane of glass obliquely, so that it should reflect the images of the objects before it, while its transparency permits the hand to be guided in tracing out the picture on a paper which may be seen below it. Now, Godfrey was a glazier, which has very unfairly been made a topic of ridicule against him : there is the greater merit in the man, who strikes out new results from a combination, which for centuries had been unproductive in the hands of thousands who were equally familiar with it. It is not at all improbable that some effect like that which has just been mentioned as having occurred to Dr. Wollaston, may have accidentally supplied the fortunate hint to the workman. Hadley was a man of science, and was more likely to have been led to his invention by previous reasoning ; but we do not know that it was so, and therefore must not venture to assign to him the superiority on that account. He seems, however, to have an advantage in his construction ; for Godfrey's second reflector is said to have had " a hole or aperture in it to see objects by direct vision," which could not have been so convenient as the half-silvered glass which Hadley adopted. But a particular comparison of the two instruments might be too long for insertion in this place, and, if it can possess sufficient interest, may become the subject of a separate communication.

In corroboration of Godfrey's claim, Nauticus mentions that the original instrument, which was made in America, had been shewn to him. It certainly must have possessed a great degree of interest, but its mere existence as certainly could prove nothing with respect to the precise time of its construction. Nauticus, however, mentions another circumstance, which might materially affect the question ; for he asserts, without hesitation, that Hadley being in the West Indies as a " Lieutenant," obtained the sketch of his quadrant from Godfrey, and, on his return to England, published it as his own. Now, from a careful examination of the records at the Admiralty, it appears that between 1719 and 1743 there was no one of the name of Hadley, who had the honour to bear a commission in his Majesty's navy ; and, without reference to this simple answer, we have distinct evidence that Hadley could not have made the alleged voyage, so as to have been guilty of what is laid to his charge. We have seen that Godfrey's contrivance occurred

to him (according to his own account) in Nov. 1730. Now, Hadley was a Vice President of the Royal Society, and it appears, from the minutes of the council, that he attended their meetings in 1730 on Nov. 15, and Dec. 7, 10, 14; and in 1731, on Jan. 26, Feb. 10, and March 30, which will sufficiently occupy the time previous to the 13th of May, on which his paper was read before the Royal Society.

Nauticus gives us no reason to accuse him of intentional deceit; but the most honest are the least likely to suspect others of being guilty of such conduct towards themselves. We cannot doubt that the writer in question was persuaded of the truth of what he stated; but the same spirit which made him anxious to do justice to Godfrey, will now, it is hoped, induce him to acknowledge that he has been overhasty in adopting his opinions. By unexceptionable evidence, we have established Hadley's priority: and it is remarkable, that, while the circumstances leave no reason to think that Godfrey's invention was not the result of his own ingenuity, there can be no doubt also of Hadley's originality, although we now know that he was not himself the first, in point of time, to construct the reflecting quadrant. As soon as his paper was read, Dr. Halley suggested that Sir I. Newton had long before communicated to the Royal Society the description of an instrument exactly on the same principle. The Journals were accordingly examined, and it was found that, about the time referred to, a communication had been made by Newton, but that it described an instrument which was different from Hadley's. Dr. Halley was candid enough, upon this, to acknowledge distinctly that he was convinced of his having been in error; and yet the error was different from what he imagined it to be. His memory, indeed, had failed him with respect to the substance of the communication; but it was accurate about the fundamental fact; and when he died, in 1742, Newton's description was found among his own papers. It is clear, therefore, that Newton had applied the principle, which was afterwards brought into such general use, and was really the first inventor of the instrument, which, notwithstanding this circumstance, has always been justly known by the name of Hadley's quadrant.

N. R. D.

ON THE BLACK SEA.

THERE is no part of the habitable globe, on which Europe possesses less accurate and precise information than the Black Sea and its shores.

Maintained for upwards of three hundred years under the jealous dominion of the Turks, this basin was concealed alike from the researches of scientific men and the enterprise of travellers. After

the capture of Constantinople by Mahomet II. it was closed to every power excepting Turkey, and was as jealously watched as the harem of a pacha.

The treaty of Kainardje, in 1776, at length opened to the Russians the navigation of the Black Sea, and the free passage of the Dardanelles. This advantage was soon shared by the Austrians, and almost immediately afterwards by most of the other European powers, with the exception of the French, who, by the conquest of Egypt, subsequently obtained it for themselves, and latterly it has been even conceded to the Americans. It was easy to foresee the influence of European commerce in a part of the world, hitherto guarded and concealed with such jealous care, that would result from the above treaty. The prodigious development of the Russian empire, and her avowed pretensions to the Straits of the Dardanelles, pretensions which need be narrowly watched by the *balancing policy* of Europe; the importance of the maritime provinces of southern Europe; the war, also, which, during the long interval of peace, that has been silently going forward on the frontiers of Persia, and which causes so much anxiety to our Indian government; the deliberate wisdom of Mahomet, who, with the assistance of European civilization, is forming for himself a shield against the ambitious designs of his northern neighbour, and, unawed by rebellion at home, or hostile aggression abroad, pursues his plans of reform;—a glance at these conflicting interests on the confines of our European continent induces us to present our readers with some details of these rich and interesting regions.

Of all the sheets of water upon the face of the globe, the Black Sea is perhaps the most remarkable for the diversity of the productions of which it is the outlet, for the singular opposition of character that distinguishes the people by whom it is navigated, and for the romantic historical episodes of which it has been the subject.

On quitting the strait of Constantinople, the shores of Anatolia lay on the right—a mountainous and richly wooded country, rich especially in timber for ship-building, besides tar and masts, and which, in addition to hemp and flax, all ready for European commerce, possesses some very rich mines of copper. On both sides the Caucasus, Mongrelia, Georgia, Ossetinia, Kabardia, Abazia, and Circassia—countries that have remained tranquil for ages amid the surrounding revolutions—now offer a virgin soil to the European adventurer, and would, by their timber, their honey, their skins, and their minerals, afford a rich harvest to commercial enterprise.

On the limits of the chains of the Taurus and the Caucasus, rise the Armenian mountains, which are connected with those of Persia. Trebizonde, Arzeroum, Erivan, are the tents of repose to the numerous caravans which constantly keep alive the commercial relations between the haughty Turks and the indolent Persians.

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... from the Strait of Constantine ... character. ... shores of Europe, the mountains ... and predatory tribes. ... among the ... the Albanians, who, selling ... the slaves ...

... with the Circassians, whose ... and whose ... the ... of the ... of the ... of the ...

... produced ... receiving ... future ...

The Black Sea ... the ... of the ... of the ... of the ... of the ... of the ...

of its course with the dependencies of the Neva and the throwing, as it were, a connecting channel between the two cities of this immense empire—the number of its tributary is prodigious. The Kama, which joins it near the middle course, is the principal branch of a number of rivers that de the western declivity of the Oural, and which, approaching 1 times the eastern side, are almost identified with a second 1, of which the Chinese frontiers, fifteen hundred leagues from lack Sea, hide the last ramifications.

Volga does not alone enjoy the privilege of offering a communication between the basin of the north and that of the south. Dniester, in the marshes of the Pinsk, does the same, and by rent channels joins the numerous rivers that water the Prussian iers. The Dnieper again, and others, solicit immense labours, hich the already existing communication between Poland and Russian colonies on the Black Sea will be singularly facilitated. a the last place, the Danube, which closely approaches the d of the Adriatic, and in which are confounded the waters of Krapacks with those of the Balkan, will not be long in accom- shing the idea of Charlemagne in connecting itself with the orth Sea. The Danube unites the original manners of the Hun- rian tribes with the recollections of the Latins, and the more xible customs of the Walachian nations; the latter endure im- tiently the Turkish yoke, but they execrate with much greater ason that of the Russians, against whom they are animated by the ost deadly hatred. In the approaching dissolution of the Turkish mpire, they will, with the assistance of western Europe, organize nemselves into an independent state—the external relations and mancipation of which, the Black Sea will greatly facilitate.

From these geographical sketches we see that the Black Sea, with the Caspian and the Aral, which may be considered as its dependencies, prolong the European branch of the Mediterranean into the north of central Europe, and even to the centre of Asia. In some seasons, this communication with some parts of the interior of these territories is preferable to the routes by the Baltic and the North Sea.

The civilization of the natives on the shores of the Black Sea will assume a greater importance in ratio, to the development of the southern provinces of Russia. The richest of these is the Crimea, possessing, in the port of Sevastapol, certainly one of the most magnificent harbours in the world. The Crimea, which secretly excited against the sovereignty of Turkey, has broken its feudal chains only to become the spoil of her perfidious counsellor. Here the ancient Tartarian noblesse look on with haughty impatience, while the Russian government labours with unceasing activity to create a navy, in addition to their squadron at Kronstadt.

Thus, at the two extremities of the European gulfs of the north

In advancing from the Strait of Constantinople towards the east, civilization assumes a stern and homelier character; in proportion as we leave behind the shores of Europe, the mountains of Anatolia are infested by vagabond and predatory tribes. Next to Trebizonde, the traveller finds himself among the Lazii, a semi-barbarous race. To these succeed the Abazians, who, sallying forth from their numerous creeks upon the vessels becalmed on the coast, carry off their crews to wretched slavery within their inaccessible retreats.

Beyond these, we meet with the Circassians, whose political relations are almost entirely feudal, and whose manners recall to our minds, with scrupulous fidelity, those of the ancient Spartans. It is among these people that the purveyors of the Turkish harems procure those women whose breasts, confined from earliest infancy within an inflexible corset, increase by their extreme leanness the immense amplitude of their hips, considered so beautiful by their Turkish masters.

Arrived in Russia, we meet with more abundant productions, and an established trade. First, the Sea of Azof, receding from age to age from its marshy limits, to become at some future time merely the mouth of the *Don*. Taganrog, which is situated on the N.E. extremity, produces skins, besides grain, tallow, and cordage; forming, with its rival Odessa, one of the outlets through which the riches of the empire are exported. We shall offer a few geographical observations, which will indicate more clearly the importance of these two ports.

The Black Sea not only derives importance from the general character of its shores, but more especially so from the relation which the rivers, discharging themselves into it, establish with the countries through which they flow. In renewing the ancient communications with the Caspian, its importance is much heightened; we approach the isolated Aral Lake, from which civilization will extend by the rivers Oxus and the Yaxartes towards the sources of the Indus, and penetrate to the hearts of those populous cities which form the entrepots for the productions of Thibet; whilst, towards the north, the Jaik affords an outlet to the rich productions of the Ouralian mountains. Formerly, the water communications between the Black Sea and the Caspian were carried on by the Phasis, the Kour, and the Koubana, but the most easy will yet be effected between the Volga and the Don. These two rivers, one of which has at its embouchure Astracan, and the other Taganrog, approach so nearly to each other above these cities, that they appear to invite the industry of man to unite them. The Volga, thus connected with the waters of the Mediterranean, will open to central European Russia an easy outlet for her heavy merchandise. This river, the largest in Europe, takes its source not far from the gulf of Finland, in the neighbourhood of Valdaii, and is navigable almost to its source; it unites itself on several

points of its course with the dependencies of the Neva and the Baltic, throwing, as it were, a connecting channel between the two extremities of this immense empire—the number of its tributary streams is prodigious. The Kama, which joins it near the middle of its course, is the principal branch of a number of rivers that descend the western declivity of the Oural, and which, approaching several times the eastern side, are almost identified with a second branch, of which the Chinese frontiers, fifteen hundred leagues from the Black Sea, hide the last ramifications.

The Volga does not alone enjoy the privilege of offering a communication between the basin of the north and that of the south. The Dniester, in the marshes of the Pinsk, does the same, and by different channels joins the numerous rivers that water the Prussian frontiers. The Dnieper again, and others, solicit immense labours, by which the already existing communication between Poland and the Russian colonies on the Black Sea will be singularly facilitated.

In the last place, the Danube, which closely approaches the head of the Adriatic, and in which are confounded the waters of the Krapacks with those of the Balkan, will not be long in accomplishing the idea of Charlemagne in connecting itself with the North Sea. The Danube unites the original manners of the Hungarian tribes with the recollections of the Latins, and the more flexible customs of the Walachian nations; the latter endure impatiently the Turkish yoke, but they execrate with much greater reason that of the Russians, against whom they are animated by the most deadly hatred. In the approaching dissolution of the Turkish empire, they will, with the assistance of western Europe, organize themselves into an independent state—the external relations and emancipation of which, the Black Sea will greatly facilitate.

From these geographical sketches we see that the Black Sea, with the Caspian and the Aral, which may be considered as its dependencies, prolong the European branch of the Mediterranean into the north of central Europe, and even to the centre of Asia. In some seasons, this communication with some parts of the interior of these territories is preferable to the routes by the Baltic and the North Sea.

The civilization of the natives on the shores of the Black Sea will assume a greater importance in ratio, to the development of the southern provinces of Russia. The richest of these is the Crimea, possessing, in the port of Sevastapol, certainly one of the most magnificent harbours in the world. The Crimea, which secretly excited against the sovereignty of Turkey, has broken its feudal chains only to become the spoil of her perfidious counsellor. Here the ancient Tartarian noblesse look on with haughty impatience, while the Russian government labours with unceasing activity to create a navy, in addition to their squadron at Kronstadt.

Thus, at the two extremities of the European gulfs of the north

and south, do we behold Russia extending her two gigantic arms, to strangle Europe in her monstrous embrace. But by means of these channels, an active enemy will penetrate to her very heart, and defeat her ambitious designs. It must be recollected that the civilization of the west of Russia has already thrown forward her "eclaireurs." The part which foreigners have played in the advancement of these western provinces far surpasses the efforts of the Russians themselves. As an example, we will show how the "personel," charged with direction of the Russian shores of the Black Sea, were composed in the year 1803.

The squadron was under the orders of the Marquis de Traversay, a French emigrant; one of the two rear-admirals was an Englishman; a Greek captain commanded the port of Sevastapol. The German general of Odessa, and of the province, was the Duke de Richelieu. An Englishman was governor of the town. Mr. Hasting, a Dutchman, directed the corps de genie of the Black Sea and on the Caucasian frontier. The artillery in the Crimea was under the command of a German; and, lastly, the governor general of Caffa was an Englishman named French. At the present moment an English admiral commands the squadron of the Black Sea. All this European influence has obtained the most splendid results; every thing is produced in abundance in this fine climate, which appears destined one day to become an immense magazine for western Europe. It is a singular fact, that in some parts of that country the population has doubled itself in fifteen years, an amount equal to any that can be produced even by the United States. Such results, under two governments differing so widely in their political constitutions, would lead us to the conclusion, that facility of subsistence, and not the form of government, is the true secret of increasing population.

(To be concluded in our next.)

PAISLEY CANAL BOATS.

While the attention of commercial men is directed to the employment of steam-carriages on railways, and the splendid results which are to be derived from them, it is rather startling to find on a sudden, that we have long overlooked a means of conveyance by our canals nearly equal to them in rapidity, and at the same time safer.

It has long been believed, and custom has unhappily tended to confirm the belief, that to propel a vessel along a canal at great speed, would not only injure the banks of it by the washing it would occasion, but also that a greater expense would be incurred than the profits of the canal would cover. The accuracy of this principle has now undergone the test of experience, and the result is that it has been found erroneous. The experiments by which it

has been disproved were carried on during the last two years on the Paisley canal; and it is a remarkable fact, that, while a speed of ten miles per hour has been maintained by the canal boats, the banks have sustained no injury whatever. The cause of injury, in fact, has been entirely suppressed by the velocity of the boat, which passes along the water without raising a ripple.

About two years ago, measures were adopted for increasing the speed of the boats on the Paisley canal. This canal is by no means favourable to such experiments, being both serpentine in its course, and narrow: it is sometimes called the Ardrossan canal, and connects the town of Paisley with the city of Glasgow, and the village of Johnstone, the distance being about twelve miles. The boats employed on this canal are 70 feet in length and 5·6 broad, and carry, if necessary, upwards of 120 passengers. They are formed of light iron plates, and ribs covered with wood, and light oiled cloth, at a whole cost of about £125. They perform stages of four miles in an interval of time varying from 22 to 25 minutes, including all stoppages, and the horses run three or four of these stages alternately every day. The passengers are under cover, or not, as they please, no difference being made in this particular; and the fare is one penny per mile in the first, and three farthings per mile in the second cabin.

The horses drawing the canal boat are guided by a boy, who rides one, and, in passing under bridges at night, a light is shewn in the bow of the boat, by which he sees his way, and which light is closed when the bridge is passed. Intermediate passengers are also accommodated to distances even as small as a mile; and the facility with which the boat stops when relieved from the drawing force, is such as to be attended with no danger whatever. The expense of conveying a load of eight tons at a rate of nine or ten miles per hour, including all outlay, interest, and replacement of capital, is not more than 11d. per mile. It is also ascertained that one ton weight may be carried on a canal at nearly the same speed as on the railway, at about 1½d. per mile, including an allowance for interest and replacement of capital.

It is also believed, that if the breadth and curvature of the Paisley canal admitted boats of 90 feet length, instead of 70, they would carry more passengers by one-half without an additional expense, and a decrease of labour to the horses.

The foregoing has been deduced from calculations founded on the observation of facts relating to the wear and tear of boats and horses, and the absolute resistance which these boats meet with in passing through the water. On this subject it has been observed, that, in addition to the common resistance of the water to the motion of the boat, a wave, or body of water, is also raised before it, varying in its height according to the velocity of the boat, and constantly presenting an obstacle to her progress, provided that she

only moves through the water at a certain rate. The height of this wave will then amount to nearly two feet, overflowing the banks of the canal, and, from the obstruction it occasions, eventually obliges the boat to be stopped. Now, if, in place of stopping the boat when this wave is raised, her velocity be increased beyond what it had then been, she advances and passes over it, and leaves it to subside in her wake, which it does, and the water becomes perfectly still. The same horses drawing the boat at this increased speed, are found to perform their work better, from the resistance to their progress being less; and the more the velocity of the boat is thus increased, the less resistance she meets with, from merely having to cut the still water instead of the wave. It is a curious fact, that the wave produced by the approach of a slow canal boat is observed at the distance of a mile, and upwards, along the canal, before the arrival there of the boat. But in the case of the high wave being raised by the Paisley canal boat, it is customary to stop the boat, and after it has subsided to start again at a greater velocity. When the boat is to be stopped for any purpose, as her speed decreases the wave rises in proportion, and washes over the banks, until the motion of the boat becomes so small as to produce none. The discovery is a very important one, and, if turned to account, is likely to produce a material alteration in the value of canal shares. It was not known until these experiments were made, that if a boat, from a state of rest, was dragged along a canal, in proportion as her speed increased to a certain limit, that the power required was greater; but that, if she were started at, and preserved a speed exceeding the same limit, that the power required would be less, and would decrease as her velocity increased. In fact, from a certain velocity there seems to be no limit to the rate at which a boat, as far as animal power can be applied, may thus pass through the water; and as the rate increases, the power required decreases. On this principle it is, that the boats on the Paisley canal, with ninety passengers in them, are drawn by horses at a speed of ten miles an hour; while it would kill them, and more besides, to draw the same boat along the canal at six miles an hour. A boat in fact might travel fifteen or twenty miles an hour easier than at six miles. The former of these velocities has already been attained by Mr. Grahame, along a distance of two miles, and is considered by him safer both for the boat and the canal.

As a proof of what may be done by this method of carriage, Mr. Grahame informs us that he has performed a voyage of fifty-six miles along two canals in six hours and thirty-eight minutes, which included the descent of five, and the ascent of eleven locks, the passage of eighteen draw-bridges where the tracking-line was thrown off, and sixty common bridges, besides a tunnel half a mile long; all of course producing some delay. The boat which performed this

was sixty-nine feet long, and nine broad, drawn by two horses, and carried thirty-three passengers, with their luggage and attendants.

We look on these results as most important, and it is to be hoped that our canal proprietors will see their real value. We are not of that order which sees the establishment of rail-roads with apprehension: but, while we wish that more were established, we hope to find that a means of communication which we already possess may be improved; for it will confer not only a benefit to the country at large, but particularly to those districts in which it lies; one which will improve the working classes, by finding employment for them, while it will afford a cheap and most desirable mode of travelling, and transferring articles of commerce from one end of the country to the other.

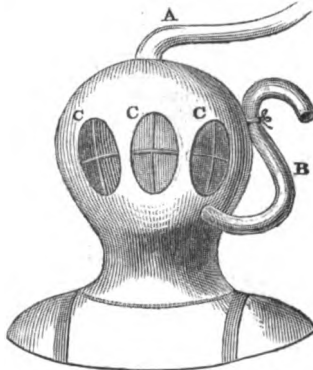
DIVING OPERATIONS AT PORTSMOUTH.

To the Editor of the Nautical Magazine.

Portsmouth, 18th August, 1832.

SIR,—You request me to give you a few lines on the subject of the ingenious and enterprising Mr. Deane's submarine operations, and I therefore copy for you a memorandum which I made after seeing that gentleman make an excursion under water on Friday the 10th of this month, to the great edification and amusement of the good folks of this busy place.

The essential part of Mr. Deane's machinery consists of a large metal helmet-like covering for his head and neck, which rests upon his shoulders, and is attached by straps to his body.



A, Pipe by which the air is forced in. B, Pipe by which the air escapes. CCC, three strong plate-glass windows, protected by cross wires.

At the top there enters the end of a long flexible tube, (A,) connected with an air-pump, through which, by means of a winch, the requisite supply can be forced in, while the air which has been used finds its way out by a short pipe (B) at the lower part of the helmet. Three windows of strong glass (CCC),

protected by stout cross wires, enable the diver to see the objects round him. Over his legs, arms, and body, he draws a water-tight dress of Mackintosh's cloth; but this is merely to prevent the inconvenience of getting wet, and has nothing to do with the Diving-bell machinery, which consists in the helmet and air-pipe alone. Instead of being lowered down, as in the case of the diving-bell, Mr. Deane employs a ladder, one end of which rests on the ground, the other against the side of his vessel, anchored over the object he wishes to examine. It is necessary, however, in order to his easy descent, that he should attach weights to his body, and I think he told me the quantity required was not less than sixty or seventy pounds, besides thick leaden soles to his shoes.

When all is ready, he very deliberately steps on the ladder, and walks off, under the surface! The effect on the spectators is extremely curious, as the bold experimenter is gradually lost sight of, and the only indication of his place is a series of bubbles rising over him. On reaching the bottom, he quits the ladder, and roves at pleasure along the ground, sometimes proceeding to a considerable distance from his vessel, the only limit, indeed, appearing to be the length of the air-pipe, of which there lies a considerable coil on the deck. I forgot to mention that a small rope is tied round his middle, the end of which is held on board by his son, a fine lad of about twelve years of age, the only person whom his father even permits to touch this important part of the apparatus. By pulling it once or twice, or jerking it in a particular manner, the diver has acquired the means of communicating his wishes to the people above. Sometimes he wishes them to work the air-pump harder; sometimes he requires the ladder shifted; sometimes to have a basket sent down; sometimes to have a rope lowered, with a hook fastened to it, that the basket which he has filled with things collected at the bottom may be pulled up: in short, he appears to possess a power of communicating from the bottom of the sea all he wishes to those above water.

As yet, Mr. Deane's operations in this quarter have been confined to the wreck of H.M.S. *Boyne*, which you may remember caught fire at Spithead about thirty-seven years ago, and was stranded near South Sea Castle. The most interesting things he has brought up are some bottles of wine, of which the corks are entire, though slightly softened. The external part of the bottles is covered in some places with very fine shells; but all the protuberant parts of the glass have received a slight rubbing, as if they had been pressed against a turning-lathe. On the occasion when I saw Mr. Deane go down, he remained seventeen minutes, and brought up a broken bottle, sundry fragments of bolts, a portion of a sword-blade, a boat-hook, and the bone of a man's leg, probably of one of those infatuated wretches who, at the very instant the fire had reached the door of the magazine, and it was known the ship must soon blow up, busied themselves in stripping off the copper sheathing!

Mr. Deane next proceeds, I understand, to the wreck of the *Royal George*, where his researches cannot fail to be very interesting. And here I cannot help observing, that it surely is a national disgrace to us, that we have permitted that ship to lie at the bottom for so long a period, to the destruction of the very finest part of the noble anchorage of Spithead. Surely Government ought long ago to have ordered her to be removed, either whole or in pieces. Not to speak of the Rennies and Telfords of the civil engineers' society, there is not a dock-yard in the country that might not have provided men who, in a few weeks, or months, would have removed every particle of this devoted ship, and cleared the roadstead of this very serious obstruction.

I am your obedient servant,

B. H.

NAVAL ARCHITECTURE—IMPROVEMENTS IN H.M.S. VERNON.

IN our last number, we alluded to certain improvements which had been introduced into H.M.S. Vernon, by Mr. Lang, of Woolwich Dockyard. We are anxious first, however, in justice to that gentleman's merits, to correct a mis-statement concerning the building of this vessel. In allusion to this, we should have said that Mr. Lang was her *builder*, the form and dimensions only of the ship having been given him by Captain Symonds, who was in reality her projector.

An experience of more than forty years has suggested to Mr. Lang many improvements in the construction of different parts of a ship, most, if not all of which, we now believe are at length adopted. It is perhaps not an easy matter to say which of these is the most important, some are particularly so, from being intimately connected with the safety of the ship in the case of her grounding, and all of them more or less tending to perfect the art of ship-building. We may take occasion hereafter to allude more directly to these several inventions, and for the present will confine ourselves to the principal, which have been introduced into the Vernon.

The first of these, and perhaps the most important, lies in giving strength to the ship, in the formation of the keel, and the connexion of the floor timbers with it, as well as the outer sheathing of plank. Fig. 3. at the commencement of our number, which is a transverse section of these parts, will clearly explain to the nautical reader the manner in which this is effected. A, here represents the kelson; B, the floor timbers; C, the keel; D, the outer keel, which may be carried away without injury or danger to the ship; E, the false keel; F, F, solid pieces continued fore and aft the vessel, making good the chocks on the floors, and planking of the bottom. They are bolted across and connected to the inner keel, and bolted up and down through the floors with dowels. The dotted lines shew the position and direction of the bolts, and the small shaded pieces are dowels.

In fig. No. 4. which is a section of the same part of the keel and floor timbers, according to the common mode of building, *a* represents the kelson; *b*, the floors; *c*, dead wood; *d*, the keel, which, if carried away, will endanger the safety of the ship; *e*, the false keel; and *f, f*, chocks beneath the floors to fill up. The seaman will at once see the great advantages of the method invented by Mr. Lang. If a vessel gets aground, the false and outer keels may be both carried away by beating against the rocks, without the danger of admitting water into her; and she may even then undergo a further grinding on the rocks till the keel, with the mass of timber about it, is fairly broken away, which will afford

sufficient time to save her from destruction, if it be possible. The complete exposure of the keel, according to the old system, is evident; and that the part which in a ship was required to be strongest, was in reality the weakest.

It is not generally known that the advantage of this method of Mr. Lang's has been already proved. The invention is not of recent date, and was even applied to H.M.S. Trent, commanded by Lieut. now Captain Sir John Franklin, on the expedition to the polar seas, under Captain Ross; and it is a remarkable fact, that the Trent got on shore in going to the northward, when, if this ship had not been thus fortified against the rocks, she would inevitably have injured herself so much as to have rendered it necessary for her to have been docked. In this case, as time was of importance, the expedition would have lost the services of the Trent; but happily, when she was off the rocks, she made no water, and therefore proceeded on the voyage. Another instance may also be quoted, of the advantage of this method in the case of the Barham. When this ship got on shore off Buen Ayre, in the West Indies, with Admiral Fleeming, had it not been for Mr. Lang's improvement, and Mr. Ballingall's system of caulking the ceiling, it is more than probable that she would have been lost.

Mr. Lang's method of connecting the stern-post with the keel is such, that, in the event of the ship striking the ground abaft, a considerable part of the latter may be broken away by the rocks without starting the stern-post, and consequently no water is admitted into the ship; an improvement which must contribute much to her safety when aground. The same method, by scarphing, has also been employed in the forefoot.

The entire construction of the Vernon and all her internal arrangements having been entrusted to Mr. Lang, he has adopted his own improvements in her. An important one of these is, in placing the magazine amidships, by which he has obtained room for twenty-three more tons of water than by the former plan of having it forward, in addition to the advantage of supplying the guns quicker, and even with a less number of men. The Barham, now in the Mediterranean, commanded by Captain Pigot, C. B. is thus fitted, and the plan is spoken of in the highest terms of approbation. We believe it is to be introduced generally into the royal navy. In her outer form, the Vernon appears to have the usual square stern; and the deception is so complete, that it requires an experienced eye to detect it. In the sketch of her stern given in our last number, we have marked, by a broken line in the counter, the part which is outside of the timbers; and it may be seen that the outer stern windows are false. She has a round stern, and the whole quarter gallery is made so as to unship when necessary.

These are a few of the principal improvements introduced by

Mr. Lang into his Majesty's ship the *Vernon*; and his feelings, as her builder, must have been amply gratified by witnessing a test of her general strength, such as no ship ever before underwent. In consequence of her draft of water, the *Vernon* touched a mooring chain on her way down the river, and as she was supposed to have suffered some injury, it was determined to take her into dock at Sheerness. She had all her stores, provisions, and water on board for six months, besides some of her guns, and was rigged ready for sea. In this condition she was taken, all standing, into the basin at Sheerness, and from thence into dock. It is always customary to support the bottom of a vessel by shores when in dock, so as to distribute the weight, and prevent it from straining any part of the vessel; and this precaution was rendered still more necessary in the case of the *Vernon*, by her having all her stores on board. So confident, however, was Mr. Lang of the strength of his work, that he refused to permit any shores to be placed under her, and allowed her to rest on her keel by merely steadying her in the middle of the dock. In this state she was minutely examined, where signs of weakness would have been displayed; and none whatever were found.

It was on this occasion that a practical proof was given of what could be done at Sheerness dock-yard, and which we have pride in recording.

As soon as the dock-gates were closed, after the *Vernon* had entered, the operation of pumping the water out of it was performed in an hour and a half. A piece of copper was replaced on her bottom, and the dock was filled again in twenty minutes. The whole process, from the time she entered the dock till she was floated out, occupied two hours and three quarters.—While we consider this a substantial proof of the efficiency of our establishment at Sheerness, we are far from believing that similar despatch might not be made, when necessary, at Portsmouth or Plymouth.

EXPEDITION TO THE NIGER.

It is gratifying to find, in the present dearth of those expeditions of discovery carried on by government in years gone by, that, as in former times, private interests are again taking the field, and uniting, for the general good, the cause of geographical discovery with that of commerce. We now see rich companies, of private individuals, who, in carrying into effect their extensive commercial speculations in foreign lands, cannot fail to improve our acquaintance with them, and thus gradually fulfil the desire of all enlightened governments, in completing the knowledge of our globe. Of this class of expeditions, one which may be said to vie with almost any former in point of liberal provision, has just left our shores for the Niger.

The return of Richard Lander, with his brother, from their hazardous, but successful enterprise, last year, opened a new field for the employment of British capital. The circumstance of his having discovered an extensive river navigation into the very heart of western Africa by actual observation, with the accounts which he brought home relating to the country, were sufficient to induce a company of merchants at Liverpool to project the present expedition. A chief person, however, was wanted to conduct it, one who should know well, not only the nature of the country into which he was to go, and the navigation of the river, but also the character of the native population he would have to deal with; in fact, one on whom the whole success of the expedition would mainly depend. This person was found in the character of Richard Lander, who had proved himself well qualified for it in every particular, and to him the entire command has been given.

The vessels composing the expedition, consist of two steamers and a brig. The largest of the steam vessels is named the *Quorra*, after that river which had given rise to so much speculation before its termination was known. She is about 145 tons burthen, and is propelled by an engine of fifty-horse power. The *Quorra* will be found a formidable vessel among the domineering natives, the Eboe people near the mouth of the river, and will easily run down a fleet of their unwieldy canoes, with their single gun lashed in the bow. Her sides are fortified with eight six-pounders, in addition to which she mounts a twenty-four pound swivel gun forward, and an eighteen-pound carronade astern. She is also armed with additional protection outside, to prevent her from being taken by surprise, and is well provided with small arms, &c. Her crew consists of forty persons. Great attention has been paid to her construction. Her draught of water is not more than four feet, which, for river navigation, is a great advantage. She is schooner-rigged, and can remove her paddles so as to economize her fuel whenever it may be necessary.

The second steam vessel is formed of wrought iron; her draft of water is thirty inches and burden fifty-five tons. This vessel is called the *Alburkha*, signifying "blessing," and is intended to explore the small streams flowing into the Niger, and to proceed higher up the river than the *Quorra* can penetrate in consequence of her draft of water. The brig "*Columbine*" accompanies the two steam vessels laden with articles of trade, provisions, and fuel, &c. for the steamers, and is intended to proceed up the river as far as possible with them. But in the article of fuel it is expected they will be well provided, as, when the coals become expended, the hard wood of the country will form an excellent substitute.

In point of internal arrangements, every thing that can contribute to the comfort of the persons belonging to the expedition has been done; no expense whatever has been spared, to render

their situation as agreeable to them as the nature of the climate into which they are going, will admit. The arrangements also of the scientific part of the expedition are on an equally liberal scale. Lieutenant W. Allen, R.N. by express permission of the company, has embarked at the desire of the Admiralty, and is supplied with sufficient instruments and chronometers to enable him to give a good geographical account of the river. The Quorra is commanded by Mr. G. L. Harries, R.N. who is also charged with a similar duty to that of Lieut. Allen, and has been provided with chronometers and instruments for the purpose by the company. Mr. M'Gregor Laird has also embarked, and Dr. Briggs of Liverpool, to assist as medical attendant, and perform the duty of a botanist to the expedition. There can be little doubt that, with the assistance of these gentlemen, much interesting and useful information of a country as yet unknown will be collected. We have already expressed our opinion of the whole voyage. To consider the result of it in detail, and the effect which will be produced by the sudden rush of commerce into a part of the country as yet unknown, by means of the Niger and its tributaries, would lead us beyond our present limits. If Timbuctoo, Sockatoo, Boossa, and Rabba, have risen into importance from their position, as forming the entrepots between central Africa and the western coast; now that a new and easier outlet is found for the produce of the country by the Niger, may we not expect to hear of new cities appearing on the banks of this river, as the tide of population becomes accumulated by the attraction of that trade which is so much desired by the natives, and of which the seeds are already sown? In short, we expect to find in a few years, that the whole feature of western Africa will have undergone a change in consequence of this discovery, and the trade to which it will lead, that it is impossible even now to contemplate without feelings of the most gratifying description.

A new era in the annals of maritime enterprise will also be dated from the departure of this expedition, in the circumstance of a vessel constructed of iron first going to sea. An iron ship involves certain difficulties relating to the compass, which are yet to be investigated; but, provided that these be overcome, there appears to be no reason why iron should not be applied to the formation of ships. The subject is one of vast importance in many points of view, and there seems every appearance of success in the present experiment, as the Alburkha is found to be more buoyant and free from leakage, while at the same time she can be easily repaired, and is safer, in case of getting aground, than a vessel built of wood.

NOTES ON THE ST. LAWRENCE.

UNDER the title of Instructions for making Gaspè, Mitis, and Rimouski in the River St. Lawrence, Mr. Gould has produced a little pamphlet, containing, in a condensed form, much that is useful for seamen, along with other interesting and useful details. Until the important operations of Captain Bayfield, in that part of our colonies be completed, and his charts and directions be published, we may look in vain for any thing of this nature which can approach to our own ideas of what is wanted, but at the same time attempts, such as in the present pamphlet, that have for their object the collection of the best information extant, must always prove acceptable to the navigator.

There was no part of our colonies, the approach to which was so much in need of examination as the river St. Lawrence, of which the annual loss of several ships was a sufficient proof; and Captain Bayfield, by the numerous discoveries he has made of unknown rocks and navigable channels, has further shown us how little we know of it. It was lamentable to hear of the loss of valuable lives and property every year that took place in this river, where, in consequence of the velocity of the tide and the nature of the climate, the mariner should possess the best possible information to direct his exertions with good effect when the safety of his ship was endangered.

The great estuary of the St. Lawrence is rich in scenery of the most interesting kind. The following so completely coincides with our own recollections, that we shall take it as a commencement of the extracts we propose to make from this little work.

“The river St. Lawrence, and the whole country, from the lowest parishes to Quebec, unfold scenery, the magnificence of which, in combination with the most delightful picturesque beauty, is considered by the most intelligent travellers who have visited this part of Canada, to be unequalled in America, and probably in the world. Niagara comprehends only a few miles of sublimity. The great lakes resemble seas; and the prospects which their shores, like those of the coasts of the ocean, afford to our limited visual powers, although on a grand scale, fall infinitely short of the sublime views of the St. Lawrence, below Quebec.

“It is impossible to travel along this road without observing most evident traces of higher levels of the river than the present one,—the rocks are actually worn as evidently as at the present high-water mark; and many of the sharp points of the lower ones shew, to conviction, that they were once small rocks in the St. Lawrence, or the ocean—and that the now cultivated flat between the first ridge, being the river boundary, and the second ridge,

formed, at no very remote period, a part of the St. Lawrence, or of the ocean.

“ Here we have frequently, as we ascend the eminences over which the post-road passes, or as we sail up or down the St. Lawrence, prospects which open a view of 50 to 100 miles of a river from ten to twenty miles in breadth. The imposing features of these vast landscapes exhibit lofty mountains, wide valleys, bold headlands, luxurious forests, cultivated fields, pretty villages and settlements, some of them stretching up along the mountains; fertile islands with neat white cottages; rich pastures and well-fed flocks; rocky islets, tributary rivers, some of them rolling over precipices; and one of them, the Saguenay, bursting through an apparently perpendicular chasm of the northern mountains: and, on the surface of the St. Lawrence, majestic ships, brigs, and schooners, either under sail or at anchor, with pilot boats and river craft in active motion.

“ In winter, the river and gulf are choked up with broken fields of ice, exhibiting the most varied and fantastic appearances; and the whole country on each side is covered with snow; and all the trees, except the stern fir tribes, are denuded of their foliage.

“ The south shores of the St. Lawrence are thickly settled by the descendants of the French, who at different times emigrated to Canada; and the manners and customs of their ancestors are tenaciously and religiously preserved by the Canadians, or *habitans*, more particularly in this part of Canada, where they have held little intercourse with the English. The villages and parishes have a general similarity of appearance; and although some of them are more extensive and much more populous than others, yet one description is sufficient for all.

“ We cannot but be pleased and happy while travelling through them. They assuredly seem to be the very abodes of simplicity, virtue, and happiness. We pass along delighted through a beautiful rural country, with clumps of wood interspersed, amidst cultivated farms, pastures, and herds; decent parish churches, and neat white houses or cottages. The inhabitants are always not only civil, but polite and hospitable; and the absence of beggary, and of the squalid beings whose misery harrows our feelings in the United Kingdom, is the best proof that they are in comfortable circumstances. Thefts are rare, and the doors are as rarely locked. You never meet a Canadian, but he puts his hand to his hat or *bonnet rouge*; and he is always ready to inform you, or to receive you in his house; and if you be hungry, the best he has is at your service. And were they not acted upon by a certain *few* agitators, they would be the happiest people under heaven—and the lofty pole surmounted with a cock, the distinguishing mark of a militia officer, would make the “*Cocq de Paroisse*” as proud of his office as if he held a field-marshal’s baton. The mildness of British

government, the protection it affords in markets for produce, and the taxation, probably not exceeding *one tenth* of the taxes and rates in the United States, leave these people, *in fact*, no advantage to expect by *change*, and little *in reality* to complain of. The only heavy rate paid by them, is the '*dime*,' or tithe, which, as Roman Catholics, they pay to their own clergymen, and which is scrupulously collected; from this, of course, Protestants are exempted."

Mr. Gould now addresses himself more directly to sailors:—

" *Gaspè*."

" On proceeding to *Gaspè* to report or clear, it is not necessary to go further up the Bay than *Douglas Town*, about six miles below *Gaspè*, there to anchor in eight or nine fathoms, and go up *in the boat*."

" There are almost regular *sea and land breezes*. The *sea breeze* sets in about *ten o'clock in the morning*, and continues till about sun-set; it then falls, and about *ten at night the land breeze* springs up. This knowledge may frequently save a day, as *Mr. M'Connell*, the collector, is exceedingly desirous to spare captains any detention.

" The rocks called *the Seal Rocks*, and laid down in the charts about the centre of the bay, *do not extend* above half a mile from the south shore.

" *Cape Gaspè* is rather high, and its rocky cliffs are perpendicular. *Cape Rosier* is low, but the land behind rises into high round hills; and the whole is covered with trees of various kinds. The coast preserves this character as we proceed up the St. Lawrence, and generally slopes, covered with trees, to the water's edge. At *Great Fox River* there are a few fishermen; and at *Anse de l'Etang*, twelve leagues above *Cape Gaspè*, there is a small harbour for shallops. It may be known by a remarkably high, wooded conical hill on the east side, and by a beach with a few huts and stages on the west. Some of the *habitans* of the parish of St. Thomas, on the *River de Sud*, thirty miles below Quebec, frequent this place during the cod-fishing season. The river issues from several lakes, one of which is only half a mile through the woods from the fish stages. Fishermen also frequent *Grand Vallee des Monts*, *Magdalene*, *Mount Louis*, *St. Anne's*, and *Cape Chat*, during summer; but we believe there are no permanent settlers, (unless it be at St. Anne's,) until we reach *Matane*. As far, however, as we could judge of the country, it appears to possess sufficient advantages for settlements. The shortness of the summer, and the *severe* cold of winter, may present objections to agriculture; but the severity of its climate differs little from that of the thickly settled agricultural parishes about 200 miles farther up than *Cape Gaspè*; nor is it so cold as many parts of the corn countries of Russia. The soil in the valleys

is fertile, and the uplands appear also to be fit for cultivation. The trees, growing on the hills, and on the sloping high lands, facing the coast, if used in ship-building,—and there are abundant convenient situations for building vessels,—will be found far more durable than those which grow in the valleys or along the rivers and lakes of the upper country. The “scrubby oak” of the hills, as it is called, is considered a durable timber.

“In proceeding up the River St. Lawrence, after passing *Cape Chat*, the first place of remark is *Matane River*, known by a large square white house, and a long barn, level on the top. Ten leagues farther up is *Little Mitis or Mitis*, situated on a long, low, flat, rocky point, with several white houses, extending about a cable’s length to the *north-east*. This is noticed as a guide to the anchorage at *Great Mitis*, which is about six miles farther to the westward. On opening the bay, (say close in shore,) a square house will be first observed, near the water side; a mile farther, in the *south-west* corner, up the bay, in the same view, will be seen the upper part only of a house, which is the establishment of *Great Mitis*. A vessel may close in with *Little Mitis Point* into six or seven fathoms water, and run for *Great Mitis*, by the lead, in from five to eight fathoms. Should the vessel be turning up on the north shore, or in mid channel, *Mount Camille*, which will be seen, should be brought to bear *south-west by south*, which will lead from sea to the bay. As this place has only recently been visited to any extent, I have thought it worth while entering into the particulars.

“At *Little Mitis*, the late John M’Nider, Esq., of Quebec, a gentleman of considerable enterprise, established a fishery, with the intention of supplying Quebec during the summer with fresh fish, as well as for curing. Notwithstanding the abundance of fish, the scheme did not answer, and we believe has been attended with considerable loss; the fish in this part of the river St. Lawrence has been found to be capricious in its haunts; perhaps annoyed by the small whales and porpoises which abound.

“Eels are very abundant in the rivers of this province. The eel-fishery on the river St. John has been let for £400 per annum; when cured and packed, they are sold at three pounds currency for the barrel of 200lbs. weight. Their manner of generation is a mystery here, as well as every where else; and even among the Indians, those close observers of nature: they run down from the lakes to the sea from August till the frost stops them. In the true spirit of economy, the real ‘*Jean Baptiste*’ uses the eel-skin as a tie for his *queue*.

“Mr. M’Nider also endeavoured to settle and clear the seigniory for cultivation, and many settlers proceeded thither at different times; but the spirited proprietor died in 1829, without having reaped those benefits from his exertions which might have been

anticipated; the situation, perhaps, not offering first-rate advantages as regards climate, or (at present) proximity to markets for surplus produce.

"The settlements do not go above six miles back, for a considerable distance towards Quebec; many clearances have been made on the flat land between the river and the first rocky ridge, and, in the autumn of 1828, on one of these little farms, wheat returned 18 for 1. Barley and oats both grew well upon it; the season, however, had been very favourable for that neighbourhood.

Great Mitis.

"About five miles farther west, is *Grand*, or *Great Mitis*. This place has lately risen into notice by the erection of saw-mills by *Mr. William Price of Quebec*, by whom a very considerable outlay has been made; and by the constant employment afforded by the mills, and felling of logs in the winter, an active little settlement has been created.

"The mills are on a fall of the *river Mitis*, about three miles up. This river, like the *Chaudiere*, near Quebec, and most others on the south side of the St. Lawrence, comes tumbling over rugged rocks of considerable elevation, as it approaches the estuary. The river itself is a small stream, greatly impeded with rapids when not swelled by freshes; and it has been found necessary to dam the river with wicker-work and mud for a considerable distance, to keep back water enough to float the logs down to the mill. From the mill the deals are floated down a *dall*, or *trough*, to the basin, for shipment; part of the distance being cut through soil and rocks fourteen feet deep. The deals produced are spruce, and a very superior yellow pine.

"At about half a mile from the *debouche* of the river is a small *rocky island*, by which a secure and picturesque basin is formed. Over the *sand bar*, at the entrance of the basin, there are *fourteen or fifteen feet at low water*, and ample room for two vessels to lie stem and stern of each other. *The tide flows exactly at one o'clock, at full and change, and rises from twelve to fourteen feet.* The channel is now marked with buoys into the basin.

"With a ship of great draught of water, it is advisable to lie in *six fathoms at low water*, with the house at the east side of the river *Mitis* open to the *eastward* of the island in the bay, so that the river may be seen between them. The high land of *Bic* will then be just clear of *Point Aux Snelle*, some of the houses of *Little Mitis* will be seen, and *Mount Camille* will bear SSW. by compass; in such a mooring the swell is broken before it comes in by the shore. The ground will be found excellent for anchorage, being clay; and, with one anchor to the eastward, and another to the westward, the vessel will ride in perfect security. A vessel of smaller draught may go within five fathoms.

"From hence, along the shore, will be observed, at great dis-

tances, the small white houses of the *habitans*; in general, however, occupied by pilots or fishermen, who have cultivated small patches of the land around them. Occasionally, when, from a wet summer, the harvest of the westward has failed, these small farmers reap a benefit by the greater backwardness of their seasons.

“The house of assembly of this province lately voted money for the completion of the road from Quebec hitherto, as well as for opening a communication with *Miramichi* and *St. John's, New Brunswick*; and, during the last season, considerable progress has been made in them.

“The land along this road (indeed generally from the descent of the highlands) to New Brunswick, is reported as excellent, and there can be little doubt of its being settled ere long; and, to this object the intended military road through New Brunswick will materially tend.

“The province of *Lower Canada*, even in these its coldest parts, is decidedly more healthy and agreeable to a British constitution than the *upper* province, or western parts of the United States, fever and ague being unknown in it.”

We shall take future opportunities of enlarging on these places, and of giving our nautical readers some useful information on a part of the world of which much remains to be discovered.

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE, AND ART.

REPORT OF THE ASTRONOMICAL SOCIETY.

(Continued from page 324.)

11. Considering the importance of the *Eclipses of Jupiter's Satellites* in determining the longitude of places, and that it is consequently desirable to aim at the greatest perfection of the tables, the Committee recommend that there be given the time of the *contact* of the satellites with the planet, and likewise the time of the *contact of their shadows*, when the satellites pass over the disc of the planet. The Committee are aware that these phenomena can only be observed by powerful instruments; but since, in the opinion of some profound mathematicians, they present the best means of determining some of the elements in the theory of Jupiter's satellites, whereby the Tables may consequently be rendered more accurate and complete, they have not hesitated to recommend a measure which, at a very trifling expense, may induce such astronomers, as are possessed of the requisite instruments, to enter on a series of observations connected with this delicate and important branch of astronomy. They further recommend that the computations of the time of the contacts above mentioned be calculated in sidereal time to the nearest minute, and that the time of the eclipses be extended to one place of

decimals in the seconds ; and given in *sidereal* as well as in *mean solar* time : and that, for the convenience of observers, there be annexed diagrams in each month, in lieu of the co-ordinates, for shewing the position of each satellite with respect to Jupiter, at the time of immersion and emersion.

12. Although not immediately in the order of the subjects, yet as being in some measure connected with what has just been stated, the Committee here recommend that the *configurations* of Jupiter's satellites should be determined for the hour of mean *astronomical* time, and not for the hour denoted by the *civil* mode of reckoning, as hitherto adopted ; which has been found to lead to some confusion : and that as much explanation should be given at the foot of the page as can be conveniently done ; with a notice that the positions are such as they would appear in a telescope that inverts.

13. The Committee further recommend that the two columns entitled "Logarithms of C. D." inserted in the late supplements to the Nautical Almanac, be retained : and that there be added thereto the logarithms of A. B. The computations to be made for mean midnight.

14. On the subject of the *lunar distances*, the committee have had much discussion as to the propriety and advantage of extending them to *every* hour in the day, instead of every *third* hour as at present. But, although this arrangement might, at first, appear more convenient to the seaman, as well as more accurate in the results, inasmuch as the effect of the second differences would in such case almost wholly vanish ; yet, when the committee considered that the seaman must in every instance make a computation for the fractional part of the interval, and that the correction for second differences, in the case of *three* hours, is in general very small, and by no means equal in amount to other corrections, too frequently and too notoriously omitted in practice ; and moreover that this proposal would have the effect of adding 120 pages to the Nautical Almanac : they have thought that they should not be justified in recommending a measure of such doubtful advantage, and which would certainly be attended with a considerable increase of expense. They however recommend that the proportional logarithm of the first difference, to 4 places of decimals (or to 5 places, if practicable,) be inserted, for the convenience of the seaman ; as well as a small table for finding the correction on account of second differences, which will not occupy more than half a page, and by means of which the intelligent navigator will be enabled to find the correction which ought to be applied, when great accuracy is required ; and obviate the necessity of any farther extension at present of the lunar distances. And, in compliance with the wishes of several officers of the Royal Navy, they suggest the propriety of extending the limits of each star a little

farther, whenever it may appear to the computer that it can be done with good effect. The Committee also recommend that the lunar distances of the *planets* (already alluded to) be inserted amongst the other lunar distances in the monthly Ephemeris.

15. This completes the list of articles usually inserted in the *monthly* pages of the Nautical Almanac: and the Committee recommend that, for the convenience of taking out differences, there be inserted at the bottom of each page (when requisite) the quantities that follow next in order of succession on the first day of the following month. At the end of these monthly lists, the Committee recommend that a page be set apart for the insertion of the following quantities, for every tenth day of the year, and computed to two places of decimals: viz. the apparent obliquity of the ecliptic, the parallax of the sun, the aberration of the sun, the equation of the equinoctial points in longitude, and also in right ascension (in time:) together with the mean longitude of the moon's ascending node, to the tenth of a minute. And that there be also added, at the bottom, the mean obliquity of the ecliptic for January 1st; and the mean daily motion of the moon's node.

16. The Committee strongly recommend the insertion of the *List of moon-culminating stars*, given in the late Supplements to the Nautical Almanac, as affording one of the best modes of determining the longitude of distant places, when the navigator, furnished with a transit instrument, can obtain a landing. As it is absolutely essential, however, that *only one* list of such stars should be published for the use of navigators of all nations; and as Professor Encke proposes to discontinue his list as soon as he is assured that the British Government will permanently adopt one, the Committee trust that they may be excused for entering rather more minutely into the mode in which these stars should be selected. They recommend, therefore, that not more than 4 stars should be selected for one day, 2 of which are to precede and 2 to follow the moon: that the stars thus forming each pair be chosen so as not to be very distant from each other in right ascension, and nearly midway between the right ascension of the moon at the time of her transit on two consecutive days: that the 2 stars chosen to follow the moon on one day, be adopted as the 2 to precede the moon on the subsequent day; that no star be selected below the 5th, but on no account below the 6th magnitude: that the stars so chosen should not be situated more than 5 degrees from the path of the moon's true orbit: and that the list should be continued through each lunation within 4 days of the new moon: that the apparent right ascension (in time) of the star to two places, and the mean declination of the star to the nearest minute, be given. And the Committee further recommend that an asterisk be annexed to those stars in the list which are situated between 4° and 14° of north declin-

ation, for the purpose of indicating, to observers in the northern and southern hemispheres, such as are best situated for observing the difference of declination between them and the moon, with a view to the determination of her parallax.

17. And for the convenience of those computations which are connected with moon-culminating stars, the Committee likewise recommend that the column entitled the moon's "Semidiameter passing the meridian in sidereal time," as given in the late Supplements to the Nautical Almanac, be retained: but that it be extended to the time of the *lower* (as well as the *upper*) culmination: and that there be given also the right ascension (in time) of the moon's enlightened limb to two places, for her upper and lower culmination; together with the change in the same, corresponding to its transit over one hour of longitude; and also the moon's declination, to the nearest minute, at the time of her transit.

18. In lieu of the "Elements for computing the principal lunar occultations of the fixed stars," usually inserted at the end of the Nautical Almanac, the Committee recommend that there should be given: 1st. A list of predicted occultations of such of the planets (including the satellites, when Jupiter is occulted) and of the fixed stars (to the 6th magnitude inclusive) as may be visible at Greenwich, both in mean and sidereal time, to the nearest minute: with the angle from the vertex, as seen in a telescope that inverts, and also from the most northern point of the moon's disc, each reckoned in degrees from right to left, round the circumference. 2d. Elements for predicting such occultations of the planets and fixed stars (to the 5th magnitude inclusive) as may be visible in some habitable part of the globe. together with the limits of latitude beyond which they cannot be occulted, as in the Bologna Ephemeris; in order that navigators may know when and where to look out for the phenomena. And they likewise recommend that the apparent places of such stars, on the day of occultation, be given.

19. The Committee further recommend that the *Apparent places of the principal fixed stars* be, in future, given for the time of their transit at Greenwich, and not (as heretofore) for the time of noon: and that the co-efficients A . B . C . D and the *constants* given in the Catalogue of this Society, be adopted in the computations. The places of α and δ *Ursæ Minoris* for every day in the year: and the remainder (as usual) for every tenth day, with a column of differences: and that where the proper name of a star is retained, there be added the constellation to which it belongs, and its corresponding letter or number. And as it has been a frequent source of regret, by navigators frequenting the Southern Ocean, that there are so few *southern* stars inserted in the usual list; and as it would be also desirable to have the apparent places of a few more *circumpolar* stars, as well as of some others to fill up the *chasms* in the present list; the Committee proceeded to the

selection of the stars proper for those purposes, and they now submit the following general list of stars* (comprehending most of those inserted in the late Nautical Almanacs, which are here distinguished by an asterisk prefixed) as the list that, under all circumstances, would be most suited to the wants of the navigator and the astronomer: at the same time, leaving the insertion of any others for future consideration. The Committee also recommend that the mean places of all these stars, for January 1st of the current year, be inserted in a *separate* list: that the magnitudes and annual variations be annexed: that the *declinations* in all cases be given, instead of the *north polar distances*: and that such declinations, when south, be denoted by the letter S (for the convenience of mariners) instead of the negative sign.

20. The Committee recommend that the several monthly lists of *Phenomena*, usually given in the first page of each month in the Nautical Almanac, be inserted *altogether* at some convenient part of the work: that the conjunctions of the fixed stars with the moon (as usually given) be wholly discontinued: that the conjunctions in future be confined to the planets with the moon, and with such of the fixed stars as may afford any interesting results, and to the planets with each other: that such conjunctions be expressed in *right ascension* (and not in longitude as heretofore,) to which should be added the difference of declination to the nearest minute: that the other phenomena which should be noted, be the times when the planets are in quadrature, conjunction, opposition, perihelion, aphelion, and nodes; as well as when stationary and at their greatest elongation and heliocentric latitude, with the amount of the former expressed to the nearest minute: also the time of the sun being in perigee and apogee; the time of the greatest brilliancy of Venus, of the maximum and minimum of the light of Algol and other variable stars, the maxima of the moon's libration, as well as notices of any remarkable phenomena that may be expected to take place, such as the transits of Mercury, the re-appearance of comets, &c. &c. And that at the end of this list there be given the elements for determining the geocentric form of Saturn's ring; together with elements for determining the illuminated portion of the discs of Venus and Mars.

21. The Committee likewise recommend the insertion of four tables, which may occasionally be found extremely useful and necessary to navigators and others, and which will not occupy much space; viz. 1st. A table for determining the latitude of a place by observations of the pole-star at any hour of the day: 2d. A table of the longitude and latitude of the principal observatories, from the latest information: 3d. A table of the mean time of high-water at London Bridge for every day in the year; and also at the principal ports, at the time of new and full

* This List will be inserted at the conclusion of the Report.

moon: and, 4th. Errata from time to time discovered in the principal logarithmic and other tables of repute. Together with notices, from time to time, of important geographical information, comprising newly determined positions, magnetic variations, phenomena of the tides, &c.

22. Reverting to those articles of the Nautical Almanac which usually *precede* the monthly parts, the Committee recommend that the "Ember days" be discontinued: and the following days be subjoined to the "Moveable feasts," or united with them under some other title: viz. Epiphany, Good Friday, King Charles's restoration, Gunpowder-plot, St. George, St. Andrew, St. Patrick. King's birth-day, accession, proclamation, and coronation, Queen's birth-day, Lady-day, Midsummer-day, Michaelmas-day, and Christmas-day, together with the commencement of the Jewish and of the Mohammedan year, and particularly the commencement of the fast of Ramadân (which may be occasionally useful to officers cruising in the neighbourhood of Mohammedan states,) and such other days as the superintendent of the Nautical Almanac may think advisable.

23. In this part of the Nautical Almanac also is usually inserted the account of the *solar and lunar eclipses*. The Committee recommend that in the account of the solar eclipses, there should be given the elements employed in the computation of the line of the moon's umbra across the earth, together with a diagram of the same; and generally more particulars relative to the phenomena, as in the Berlin Ephemeris.

(To be continued.)

Calculations relating to the Equipment, Displacement, &c. of Ships and Vessels of War. By JOHN EDYE. London. S. and J. Hodgson. 1832.

This work, dedicated by permission to His Majesty, contains the dimensions of the numerous classes of ships in our navy, with their light and load draughts of water. The weight of every article belonging to the equipment of a ship for service at sea, as well as of the number of the crew and their effects, that could influence her displacement, has been considered. To naval officers, this work will be a valuable acquisition, in not only giving them the dimensions of the masts, yards, and sails of every class of ship, but will put them in possession of much useful information, from which they may make experiments in the sailing qualities of their vessels, by altering the position of the centre of effort of the sails. There is, besides, much information in it on the expense attending the various component parts of a ship, and her stores and furniture, all of which cannot fail to be useful to the architect and ship-owner. The dimensions of the new ships Vernon, Castor, and Snake, are also given. Mr. Edye professes his object to have been that of producing "a work which will give to the sailor a thorough and scientific knowledge of the structure, powers, parts, qualities, uses, and contents, (detail and aggregate,) of his ship, and of every element and material in and belonging to her;" in which he has fully succeeded.

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

The proceedings of the experimental squadron at Cork, under the orders of Vice-Admiral Sir Pulteney Malcolm, and of that off the Tagus, under the command of Rear-Admiral Warren, form the principal features in nautical affairs at the present moment. The former of these consist of the Donegal, Dryad, Vernon, Castor, Nimrod, Tyne, Trincolo, Snake, Oynx, and Dee steam-vessel. The new vessels are reported to sail well. Of the Vernon, it is said, that she answers every expectation that had been formed of her superior sailing qualities in fine or heavy weather. Incidents attending a new ship, newly fitted, have interfered with the experiments of her sailing. The squadron off the Tagus, necessary for the protection of British interests at Lisbon during the present struggle for the throne of Portugal, consists of the Asia, Britannia, Caledonia, Revenge, and Stag. The Britannia is expected to come home, on being relieved by the Talavera, which ship has just returned from St. Petersburg, whither she had conveyed Lord Durham and his suite.

In the address presented to his excellency, the Marquis of Anglesea, on his recent visit to Cork, a request was made for the restoration of that harbour, the only naval establishment that Ireland possessed. His excellency expressed his feelings as perfectly consonant with such a measure, but gave no hopes of its being realized.

We regret to state that Mr. Coulthurst, who left this country in January last for the purpose of travelling in Africa, has fallen under the effects of the climate. From the Gambia he proceeded to Fernando Po, and from thence to the Calabar river. Duke Ephraim forwarded him as far as the Eboe country, from whence he was compelled to return, and he died on

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his way to Fernando Po, in April last, on board of the Agnes. It is remarkable that his journey into Africa had long been the subject of his thoughts. From his infancy his heart was set on African enterprise. His family is still in the possession of some of his Eton school-books, in which maps of Africa, with his supposed travels in the interior, are delineated, and where, at Barbadoes, he used to take long walks in the heat of the day, in order to season himself for the further exposure which he never ceased to contemplate. The forthcoming journal of the Geographical Society, contains all the particulars at present known of this event.

The immense number of 5215 emigrants are stated, on the Exchange books at Quebec, to have arrived there from England on the 2d of June.

A new chapel for the use of mariners, which has been lately erected by subscription at Quebec, was consecrated on the 3d of June by the bishop of that place, under the name of St. Paul's Chapel.

It is with great pleasure that we observe the commanders of our Quebec traders vying with each other in gaining the estimation of their passengers by that generous attention which characterizes the British sailor. Mr. J. A. Sharman, commanding the brig Venus, and Mr. P. Murphy, commanding the brig Recovery, have received letters expressive of the warmest thanks from their passengers; and Mr. James Greig, commanding the ship Caroline, in addition to a similar letter, has been presented with a handsome silver cup, with the following inscription on it:—"To James Greig, Esq. this is presented, as a memento of regard by his passengers, for his kind, liberal, and disinterested attention to them during their happy voyage to

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Quebec, on board the *Caroline*, in 1832.' A cup of sufficient value could not be had at Quebec, and measures were taken for obtaining it in London.

A Trinity House notice, which will appear in our next number, announces that the lights on Nash Point, in the British channel, will be commenced on the 1st of September, to be continued afterwards from sunset to sunrise.

It may be satisfactory to those persons who, from amusement or otherwise, employ themselves in making experiments for the improvement of naval architecture, and the numerous matters connected with ships in general, to know that their labours are likely to be submitted in future to the opinion of a committee of experienced naval officers, to be convened periodically for that purpose. The committee will give an impartial decision on the merits of any invention, the model of which may come before that body, and it will be adopted or not, accordingly. We believe that this excellent measure was suggested entirely by Captain Symonds, the present surveyor of the navy.

Mr. Douville, lately returned from his travels in Africa, is meditating another journey into that country. It is his intention to land on the west coast in about 14° S. lat. from whence he will travel as far as 25° E. long. from Paris, between the parallels of 13° and 15° S. From this point he proposes to take a north-east direction, and to return to Europe, if possible, by Egypt, or at least through Mozambique.

Information has been received from General Miller, of the Peruvian service, that a ship under American colours, belonging to the Sandwich Islands, has discovered three coral

islands in the Pacific ocean, not laid down in the charts. They lie in lat. 15° 5' S. long. 141° 3' W.; lat. 16° 24' S. long. 141° 24' W.; lat. 16° 38' S. long. 141° 0' W. No landing was effected on either, but large fires were seen on the latter.

By the Admiralty order of the 17th August, in our present number, establishing the rates of passages by H. M. packets, a considerable reduction will be found, which is not unworthy the attention of travellers.

We have noticed in another part of our present number, the departure from our shores of the *Quorra*, the first steam-vessel built entirely of iron. The *Lord William Bentinck*, constructed also of the same material, at the establishment of the Messrs. Maudsley, was launched in the latter end of July. This vessel is 125 feet long with 22 feet beam, and when launched, her draught of water was 11 inches. She is one of a series which are to be constructed for the East India Company, destined for the navigation of the Ganges. The thickness of the iron varies from one-fourth to three-eighths of an inch.

The results of the late scientific expeditions of the French will shortly be published by the Depot de la Marine, at Paris. They consist of the surveys of M. La Place, *Capitaine de frigate*, who has fully examined the Anambas Islands, in command of the corvette *La Favorite*; those of M. Barral, *Lieutenant de Vaisseau*, commanding the corvette *L'Emulation*, of the river La Plata, and the island St. Catherine; and also those of M. Berard, *Lieutenant de Vaisseau*, commanding the *Loiret*, who is still employed in surveying the coasts of the kingdom of Algiers. One of the charts of this officer's survey, we understand, is already published.

NAVAL INTELLIGENCE.

FLAG-OFFICERS IN COMMISSION IN COMMAND OF STATIONS, FLAG-LIEUTENANTS, AND SECRETARIES.

Stations.	Flag-Officers and Commanders.	Date of Appt.	Flag-Lieutenants.	Secretaries.
Nore	<i>Vice-Admiral Sir John Poo Hereford, Bart.</i> K. C. B.	a 30 July 30	{ John Wash- ington. }	William Christy
Portsmouth ...	<i>Admiral Sir Thomas Foley, G. C. B.</i>	b 22 April 30	Charles Gayton ..	James Pinhorn
Plymouth	<i>Admiral Sir Manley Dixon, K. C. B.</i>	c 22 April 30	Mathew Foot ..	Thos. Woodman
Particular Service	<i>Vice-Admiral Sir Pul- teney Malcolm, K. C. B.</i>	d 9 May 32	Rich. Morgan (a)	Joseph Edye
Mediterranean ..	<i>Vice-Admiral Hon. Sir Hen. Hotham, K. C. B.</i> G. C. St. M. and G. ...	e 30 Mar 31	Joseph F. Stirling	John Irving
West Indies ..	<i>Vice-Admiral Sir E. G. Colpoys, K. C. B.</i>	f 30 Feb 30	{ Hon. A. W. Monckton. }	Edward Lawes
Halifax and Newfoundland	<i>Rear-Admiral Sir Thos. Baker, K. C. B.</i>	g 9 Jan 29	John Bazeley ..	Alexander Kant
South America ..	<i>Vice-Admiral Sir John Gore, K. C. B.</i>	h 16 Dec 31	{ Wm. Chesel- den Brown }	Richard Haig
East Indies	<i>Rear-Admiral William Parker</i>	i 9 Sept 31	Wm. Hen. Jervis	Richard Halliday
Lisbon	<i>Rear-Admiral Fred. Warren</i>	k 5 Aug 31	Rd. L. Warren ..	John P. Lamey
Cape of Good Hope and Coast of Africa				

THE ROYAL NAVY IN COMMISSION.

*. S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

- ACTÆON, 26—Hon. F. W. Grey, July, at Tripoli.
- ÆTNA, S. V. 6—Com. E. Belcher, August, Gibraltar.
- AFRICAN, St. V. 1—Lt. J. Harvey, 16th June, Falmouth.
- ALBAN, St. V.—Lieut. H. Walker, (a) 23d Aug. at Portsmouth.
- ALERT, 18—Com. J. C. Fitzgerald, Pacific.
- ALFRED, 50—Capt. R. Maunsell, 25th July, at Alexandria.
- ALLIGATOR, 28—Capt. G. R. Lambert, 16th Feb. arrived Cape Good Hope; 22d Feb. sailed for India.
- ALGERINE, 10—Com. Hon. J. F. P. De Roos, at C. Frio.
- ARACHNE, 18—Com. W. G. Agar, 2d June, at Bermuda.
- ARIADNE, 28—Capt. C. Phillips, July, at Jamaica.
- ASIA, 84—Capt. P. Richards. Flag Ship, (i) Tagus.
- ASTREA, 8—Capt. W. King, Falmouth.
- BADGER, 10—Com. G. F. Stowe, 10th May, at Mauritius.
- BARHAM, 50—Capt. H. Pigot, May, at Constantinople, 25th July.
- BEACON, (late METEOR.)—Com. R. Copeland, 31st July, sailed for Mediterranean.
- BEAGLE, 10—Com. R. Fitz-Roy, 11th June, at Rio Janeiro.
- BELVIDERA, 42—Capt. Hon. R. S. Dundas, 21st July, at Tripoli.
- BLANCHE, 46—Capt. A. Farquhar, K. H. C. B. 10th July, Barbadoes.
- BLOSSOM, S. V. 16—Com. R. Owen, 7th Aug. at Halifax.
- BRISK, 3—Lt. J. Thompson, May, at Accra.
- BRITANNIA, 120—Capt. P. Rainier, Tagus.
- BRITON, 46—Capt. J. D. Markland, C. B. Tagus.
- CALEDONIA, 120—Capt. J. Hillyar, Tagus.
- CASTOR, 36—Capt. Sir R. Grant, Kt. Exper. squadron.
- CHALLENGER, 28—Capt. C. H. Freemantle, 30th Nov. Singapore, from Madras.
- CHAMPION, 18—Com. Hon. A. Duncombe, Plymouth.
- CHARYBDIS, 3—Lieut. R. B. Crawford, Benin.
- CHILDERS, 18—Commander R. Deans, at Oporto.
- CLIO, 18—Com. J. J. Onslow, Pacific.
- COLUMBIA, St. V. 2—Lt. R. Ede, Tagus.
- COLUMBINE, 18—Com. O. Love, 4th July, at St. Thomas's.
- COMET, 18—Com. A. A. Sandilands, 4th Feb. at Singapore.
- COMET, St. V.—Woolwich.
- CONFIANCE, St. V. 2—Lieut. H. F. Belson, Woolwich.
- CONFLICT, 12—Lieut. G. Smithers, Sierra Leone.
- CONWAY, 28—Capt. Eden, 29th June, sailed from Madeira.
- CORDELIA, 10—Com. C. Hotham, June, Archipelago.
- CRACKER, 1—Lieut. J. J. Morgan, Jersey.
- CROCODILE, 28—Capt. J. W. Montagu, Trincomalee.

- CRUIZER**, 18—Com. J. Parker, China seas.
CUBAÇA, 26—Capt. D. Dunn, Mauritius.
CURLW, 10—Com. H. D. Trotter, May, in Simon's Bay.
DEE, St. V.—Com. R. Oliver, Experimental Squadron.
DISPATCH, 18—Com. G. Daniell, Chatham.
DONEGAL, 74—Capt. J. Dick. Flag Ship. (d) Experimental Squadron.
DRUID, 46—Capt. G. W. Hamilton, C. B. June 20th, Pernambuco.
DRYAD, 42—Capt. J. Hayes, C. B. Exper. Squadron.
DUBLIN, 50—Capt. Rt. Hon. Lord J. Towns- end, April, at Valparaiso.
ECHO, St. V.—Lieut. Otway, 15th June sailed for Mediterranean.
FAIRY, S. V. 10—Com. W. Hewett, surveying North Sea.
FAVOURITE, 19—Com. J. Harrison, 7th June, at Gambia.
FIREBRAND, St. V.—Lieut. T. Baldock, 12th August, sailed for Mediterranean.
FIREFLY, 2—Lieut. J. M'Donnel, Bahamas.
FLAMER, St. V.—Lieut. R. Bastard, Wool- wich.
FLY, 10—Com. P. M'Quhae, 10th May, at Port Royal.
GANSET, 18—Com. M. H. Sweeney, 4th May sailed from Port Royal, Jamaica.
HARRIER, 18—Com. H. L. S. Vassal, 2 April arrived at Madeira: 3d, sailed for India.
HERMES, St. V.—Lieut. R. Bastard, 17th July, at Falmouth.
HORNET, 6—Lieut. F. R. Coghlan, Chatham.
HYACINTH, 18—Com. W. Oldrey, 6th June, arrived at Bermuda.
IMOGENE, 18—Capt. P. Blackwood, April, Trincomalee.
INVESTIGATOR, 16—Mr. G. Thomas, Downs.
ISIS, 50—Capt. J. Polkinghorne, Flag Ship. (k) Mauritius in May.
JASEUR, 18—Com. F. Harding, 25th April arrived at Mauritius.
JUPITER, *Troop Ship*. Mr. R. Easto, 21st July, Cork.
KANGAROO, 3—Lieut. J. Hookey, Ba- hamas.
LEVERET, 10—Lieut. W. F. Lapidge, 10th July, arrived at Plymouth.
LIGHTNING, 18—Com. T. Dickinson, 21st June, at Rio.
LIGHTNING, St. V.—Woolwich.
MADAGASCAR, 46—Capt. E. Lyons, 28th July, at Malta.
MAGICIENNE, 14—Capt. J. H. Plumridge, Feb. arrived at Bengal.
MAGNIFICENT, 4—Lt. J. Paget, Port Royal.
MASTIFF, 6, S. V.—Lieut. J. Graves, 2d August, arrived at Gibraltar.
MELVILLE, 74—Capt. H. Hart, 5th April sailed from Cape for East Indies. Flag- ship.
MESSENGER, St. Transp.—Lieut. B. Aplin, 13th July, Portsmouth. Sailed.
METEOR, St. V.—Lieut. Symons, 20th July, Malta.
MINX, 3—Lieut. J. Simpson, Bahamas.
NAUTILUS, 10—Com. Rt. Hon. Lord G. Pau- lett, off the Douro.
NIMBLE, 5—Lieut. J. M. Potbury, July, Havana.
NIMROD, 20—Com. Lord E. Russell, Ply- mouth.
NORTH STAR—Capt. Hon. G. W. Trefusis, 4th July, St. John's.
OCEAN, 80—Capt. S. Chambers. Flag-ship, (a) Sheerness.
ONYX, 10—Lieut. A. B. Howe, Exper. Squad.
ORESTES, 18—Com. W. N. Glascock, 12th Aug. sailed for Oporto.
PALLAS, 42—Capt. W. Walpole, 3d July, sailed from St. Kitt's.
PEARL, 20—Com. R. Gordon, 10th July, Port Royal, Jamaica.
PÉLICAN, 18—Com. J. Gape, 4th June, at Patras.
PELORUS, 18—Com. R. Meredith, Ascen- sion.
PHILOMEL, 10—Com. W. Smith, 10th of August, at Gibraltar.
PICKLE, 5—Lieut. E. Stopford, Bahamas.
PIKE, 12—Lt. A. Brooking, Cork station.
PINCHER, 5—Lt. W. S. Tulloh, Bahamas.
PLUMPER, 12—Lieut. T. Cresser, Gold- coast, July.
PLUTO, St. V.—Lieut. G. Buchanan, Bight of Benin.
PYLADES, 18—Com. E. Blankley, 24th April, at Pernambuco.
RACEHORSE, 18—Com. C. H. Williams, July, at Halifax.
RAINBOW, 28—Capt. Sir J. Franklin, Knt. 14th June, at Patras.
RALEIGH, 18—Com. A. M. Hawkins, 21st July, Napoli di Romania.
RAPID, 10—Com. C. H. Swinburne, 30th July, Malta.
RATTLESNAKE, 28—Capt. C. Graham, Valpa- raiso, May.
RAVEN, S. V. 4—Lieut. W. Arlett, 11th Aug. arrived at Portsmouth.
RECRUIT, 10—Lt. T. Hodges, Bermuda.
REVENGE, 78—Capt. D. H. Mackay, Tagus.
ROMNEY, *Troop Ship*, Tagus.
ROVER, 13—Com. Sir G. Young, Bart., Chatham.
ROYALIST, 10—Lieut. R. N. Williams Oporto.
St. VINCENT, 120—Capt. H. F. Senhouse, 21st July, Napoli di Romania. Flag- ship. (e)
SAMARANG—28, Capt. C. H. Paget, 22d June, at Bahia.
SAN JOSEF, 110—Capt. R. Curry, Plymouth, Flag-ship. (e)
SAPPHIRE, 28—Capt. Hon. W. Wellesley, July, Bermuda.
SCOUT, 18—Com. W. Hargood, Chatham.
SCYLLA, 18—Com. Hon. G. Grey, July 21, at Tripoli.
SKIPJACK, 5—Lieut. W. Shortland, Ba- hamas.
SNAKE, 16—Com. W. Robertson, Exper. Squad.
SOUTHAMPTON, 52—Capt. J. M. Laws, 20th Jan. at Singapore. Flag-ship. (h)
SPARROWHAWK, 18—Com. Currie, act. 6th July, at New York.
SPEEDWELL, 5—Lt. W. Warren, June, Ha- vana.
STAG, 46—Capt. Sir T. Trowbridge, August, Oporto.
SULPHUR, 8—Com. W. T. Dance, Van Diemen's Land.
SWAN, 10—Lieut. J. E. Lane, North Sea.
SYLVIA, 1—Lieut. T. Spark, Jersey.
TALAVERA, 74—Capt. S. Brown, at Ply- mouth.
TALBOT, 28—Capt. R. Dickinson, C. B. at Mauritius.

TRINCULO, 18—Com. R. Booth, Experimental Squadron.
TWEED, 23—Com. A. Bertram, 9th July, at Jamaica.
TYNE, 28—Capt. C. Hope, Experimental Squadron.
UNDAUNTED, 46—Capt. E. Harvey, May left Cape for Mauritius.
VERNON, 50—Capt. Sir F. Collier, Knt. Exper. Squad.
VICTOR, 18—Com. R. Russell, 18th March, arrived at Bermuda.
VICTORY, 104—Capt. H. Parker. Flag-ship (b) Portsmouth.
VIPER, 6—Lieut. H. James, off Tagus.
VOLAGE, 28—Capt. Right Hon. Lord Colchester, Valparaiso 20th June.

WARSPITE, 76—Capt. C. Talbot. Flag-ship. (g) 20th June, at Rio.
WINCHESTER, 52—Capt. Rt. Hon. Lord W. Paget, 20th July, at Bermuda. Flag-ship. (f)
WOLF, 18—Com. W. Hamley, 21st. Feb. arrived at Ceylon.
ZEBRA, 18—Com. D. De Saumarez, 6th Dec. at Sydney.

Paid off into Ordinary.

MAIDSTONE, 42—at Portsmouth.
SERINGAPATAM, 46—at Sheerness.
ROSE, 18—Chatham.

Commissioned.

COCKATRICE—at Plymouth, packet.
ROVER, 18—at Chatham.
SCOUT, 18—at Chatham.

The Right Hon. the Lords of the Admiralty, viz.:—Rear-Admiral Sir T. M. Hardy, Bart. G.C.B.; Rear-Admiral the Hon. G. H. L. Dundas, and John Barrow, Esq. Second Secretary, arrived at Portsmouth on 19th August at the George Hotel, on an official visit; Sir James Graham, First Lord, having arrived there two days previously. On Monday, at an early hour, their Lordships commenced visiting the several departments of the Dock-yard, accompanied by Rear-Admiral Sir F. L. Maitland, K. C. B. Superintendent of the establishment, Capt. Parker, of the flag-ship, Capt. Lillicrap, Superintendent of the Ordinary, Capt. Hastings, of the Excellent, &c. after which their Lordships retired to the School of Naval Architecture, where a general muster of the workmen, &c. took place. Their Lordships also visited H.M.S. Victory, on leaving which they were saluted by seventeen guns. In the evening, Sir Thomas Foley, Commander-in-Chief, entertained the Board, and the heads of the several departments, to dinner. Tuesday, being a holiday, nothing was done. On Wednesday their Lordships inspected the works of the new Victualing Office and Haslar Hospital, and on Thursday, at an early hour in the morning, their Lordships visited H.M.S. Excellent, and remained some time witnessing the exercise and practice in Naval gunnery, during which many shots were fired with great precision. Their Lordships quitted the Excellent about eleven o'clock, and proceeded to the Prince, Capt. Lillicrap, where the Admiralty flag was hoisted, and a general muster of the ordinary took place. On Friday morning Sir James Graham, First Lord, held a levee

of Naval Officers at the George Hotel, which was most numerously attended; and on Saturday their Lordships inspected the Royal Marines in their barrack square, in heavy marching order. Their Lordships will leave this port for Plymouth in the Lightning steamer, accompanied by Rear-Admiral Sir F. Maitland, K.C.B. Superintendent of this Dock-yard.

The Lords Commissioners of the Admiralty having given permission to Mr. Henry Abbinett, of Gosport, by letter of 30th May last, to raise the wreck of the Boyne, at Spithead, Mr. Abbinett intends to recommence in a few days his proceedings upon the wreck, having engaged the services of Messrs. J. Dean, sen. and Brier, from North Yarmouth, where they are at present employed in raising the wreck of the Guernsey Lily, armed transport, lost off Yarmouth in the year 1799.

Mr. Charles Anthony Deane, who has volunteered to explore the wreck of the Royal George, is descended from Sir Anthony Deane, who in 1663 improved the building of the 60 and 70 gun ships, and whose son, (the great great-grandfather of the present experimentalist,) in 1699, was sent to Moscow, to assist Peter the Great in the construction of a Navy, and from whom some interesting communications will be found in Pepy's Memoirs, vol. xi. Mr. Deane, on the 20th of August, descended in 11½ fathoms water, to inspect the Royal George; he alighted on her, and immediately slung a gun, but the purchase in his vessel (the Albion) was not sufficient to hoist it up; he then cleared a fisherman's cable, the stone, which had been used for an anchor, having got down what Mr.

Deane conjectured to be the main hatchway. It having blown too hard on the 21st and 22d to enable him to do any thing, Mr. D. proceeded to Cowes, and, in the presence of several distinguished visitors there, descended, and brought up two baskets of stones and other articles, to shew the facility with which he can manage himself under water. On Thursday he unbent a cutter's cable from her anchor, let her adrift, and brought her anchor from the bottom to his own vessel; he is now again at anchor over the Royal George's wreck.

The Medina yacht, appropriated to the use of the Governor of the Isle of Wight, is to be sold out of the service, or broken up.

Lieut. Morgan and the crew of the Cracker cutter are ordered to be turned over to the Seaflower cutter.

The Neptune, 120, building in Portsmouth Dock-yard, will be launched on the 27th of next month.

The Civil Departments of the Navy, formerly called the Admiralty, Navy Office, and Victualling Office, are now consolidated in Somerset House, and doors of communication have been made from one office to another, and controlled, not as heretofore, by three boards (the Admiralty, Navy, and Victualling), but by the Lords of the Admiralty, assisted by five superior officers or heads of department, called Accountant General, Surveyor of the Navy, Storekeeper General, Physician General, and Comptroller of Victualling and Transports. This consolidated office is called the Admiralty, but is divided into the "Admiralty" as formerly existing, and the "Admiralty, Somerset House." With the consolidation of the duties of Navy, Victualling, and Admiralty, a portion of the duties of the Navy Pay Office has also been consolidated, namely, all remittances, either of half-pay, widows' and other pensions (except Greenwich out-pensions), seamen's wages, &c.; all prize claims and duties, except the actual payment of prize money; all claims to the wages of petty officers of the navy, seamen, and marines, &c.; in short, all duties except the receipt and payment of money. This arrangement has not been extended to the Greenwich out-pension department, which being carried on in a separate

office at Tower Hill, and being of a peculiar nature, and the arrangements well adapted to the particular class of persons for whom it was established, has not been disturbed. There is every reason to believe that these arrangements will be highly beneficial, infuse new vigour into the whole Navy, and, by greater simplicity in the details of the general business, produce greater despatch. Moreover, the accounts will in future be kept on the mercantile plan, be regularly audited by the Audit Office, and an annual balance sheet be laid before Parliament, showing whether the sums voted under each head of service have or have not exceeded the votes of Parliament for each specific head. There is another advantage resulting from this arrangement—the business will be done with fewer hands, and we hear that a saving may be hoped for of nearly £27,000 per annum; but as the pensions to reduced officers will amount to £20,000, the immediate saving will be only £7,000 a year. It is sincerely wished this arrangement may ensure every possible success, and there is little doubt of it. It is the first effort in this country to carry the mercantile principle into the public accounts, and in no distant period it will be applied to other departments—the Navy leads the van.—It is ultimately intended to have but one pay-office for the Navy, Army, and Ordnance; this will effect a great saving—the Army Pay Office has never been looked into, and the moneys for the army are always voted "in the aggregate," while those for the Navy are voted "separately;" thus one branch of the service has been thoroughly sifted, and the other has not been inquired into; under the new arrangement, it is impossible for any cashier to become a defaulter. Public Naval letters are always to be addressed to the Secretary of the Admiralty, but the name of the service on which the letter is written is to be marked on the left-hand lower corner, such as "Navy Pay," "Victualling," "Medical."

Sir W. Burnett, K. C. H., the Physician General of the Navy, is now at Portsmouth on his annual visit of inspection to the ships and hospital at Haslar. In this establishment, he has opened a ward for the first reception of lunatic patients, in order to ascertain if

gentle restraint and medical treatment will have a useful effect, without at once plunging an unfortunately weak intellect into the society of confirmed lunatic subjects.

Sir Pulteney Malcolm's squadron, including the *Vernon*, *Dryad*, and *Snake*, with the *Dee* steam-frigate, is ordered to assemble in Torbay, where it will be visited by the Admiralty Board. The *Snake* had tried her rate of sailing with the squadron, on a wind, and had fairly beat them all; the *Castor* in this trial was second: it must be observed that the *Vernon* was not present.

Fire at Cove.—The rendezvous of the Fleet in Cove Harbour, on Wednesday night, 25th July, very fortunately saved a considerable part of that extremity of Cove near the Fort from destruction by fire, and if it should be said of its occupants, "they had little to lose."—we must yet remember that that little was their all. There are three lines of houses parallel, crowded together, and rising over each other. In the centre of the middle line, at between 10 and 11 o'clock at night, a fire broke out. Sir Pulteney Malcolm, with his characteristic promptitude and vigilance, sent, not only the boats of the *Donegal*, but those of the other ships, well manned, and the fire engines of the fleet, and by the prompt and judicious assistance that was rendered, the fire was got under with the loss only of two houses. This we learned from an old fisherman, one whose house had been saved, abridging, we admit, his narrative. But we give the conclusion in his own words.—"And sure, Sir, 'tis well they *all* deserves of us—didn't the Admiral send his boats, and put down the fire before they on the *Bache* know'd a word about it, and the Officers off with their coats and slaved like any body; and the men, every one with his bucket, the craturs! dragging them up that hill, filled with *say* water, because they wouldnt trust to the chance of finding water ashore."—We certainly do not desire a fire, to enable our friends to exercise their humanity in our behalf; but if the misfortune should come to our doors, we would be very glad to have such friends as Sir Pulteney and his followers at hand.—*Cork Southern Reporter*.

The *York* transport sailed on 13th August, for New South Wales, with con-

victs from the hulks at this port, under the superintendence of Dr. M'Ternan.

The following ships are ordered to be sold out of the service, viz:—The *Desirée*, *Lennox*, *Grinder*, *Deal lugger*, *Ontario*, *Espiegle*, *Rosario*, *Sheerwater*, and *Vigilant*, ketch.

The following ships are fitting out at Chatham: *Dispatch*, 18, Com. Daniel; *Rover*, 18, Com. Sir G. Young, Bart; *Scout*, 18, Com. Wm. Hargood; and His Majesty's schooner *Hornet*, Lieut. Coghlan.

The Petty Officers and ship's company of His Majesty's Ship *Dryad*, on being paid wages, lately made a present of a silver call, with chain and plate, to Mr. James Beer, Boatswain of that ship; as a testimony of the good feeling they entertain towards him, for the conciliatory manner in which he discharges his duty.

Extract of a letter from an officer on board H.M.S. *Imogene*, dated April 4, 1832, four miles from Trincomalee:—
"When we left the Cape, it was blowing hard, which towards four in the afternoon increased to a heavy gale, the waves running mountains high. The *Alligator* sailed at the same time with us. It was a noble sight, with enough of danger to render the scene highly exciting. The breakers being not far distant on our starboard bow, the lightning running down the mast, and at times covering the whole ship. One poor fellow fell over board and was drowned, the sea being too violent to admit of our rendering him any assistance. For a fortnight the weather was most wretched, cold and rainy every day. On the 27th of last month, I witnessed an instance of heroism of which I think an Englishman is alone capable. Rowe, a fore-top man, was standing on the main-yard, when he saw a man of the name of Wilson, fall off the bowsprit. The ship was going at the rate of nine knots. Without saying a word, Rowe plunged in after him, and by his presence of mind and exertions encouraged the poor fellow so effectually, that, much to the surprise of all, they were both picked up alive and uninjured. The ship had passed over Wilson, and this is perhaps the first instance in which a man has been saved under similar circumstances, for, on rising to the surface, the head generally comes in contact with

the bottom of the vessel, and the person is immediately stunned."

The respective officers of the Ontario and Rosario are turned over to the Cheque, their vessels being ordered to be sold out of the service.

Mr. Thomas, Commander of H. M. S. Investigator, with a party of his men, had a narrow escape from the effects of lightning on the 3d of August. Being employed in taking angles near the North Foreland, Mr. Thomas and his party had retreated for shelter from the storm to the Lighthouse; and at five P.M. as they were standing in the porch, both of the doors being shut, a violent explosion, resembling that of a 64-pounder, took place. It was generally supposed that the Lighthouse was blown up. The porch was filled with the electric fluid, which escaped under the door, knocking down the whole party, consisting of five persons, in its way. A theodolite also, which Mr. Thomas had been using, was forced from its stand, but happily the people received no injury, although they lost the use of their legs for a minute or two. It appeared that the electric fluid had struck the Lighthouse, and was conveyed by its conductor to the ground near the porch.

The occasion of a British squadron assembling at Cork, is celebrated in the following lines, written in the true spirit of Irish hospitality. We have taken them from the Dublin Evening Mail:—

PADDY FROM CORK'S WELCOME
TO SIR PULTENEY MALCOLM'S
SQUADRON.

You're welcome—you're welcome,
Vice-Admiral Malcolm!
To anchor your squadron at Cove;
And moreover—the stronger
Your force, and the longer
Your stay—the more welcome, by Jove.

Let the *Donegal* cast her
Sheet anchor—the faster
And deeper—the more 'twill delight us;
And you, Captain FANSHAW!
We'll all, to a man, show
Your eighty-six guns don't affright us.

The *Jupiter*, too,
Who, beside her own crew,
Has a regiment of soldiers aboard her,
Is as welcome as May;
And we'll coax her to stay—
With the best that all Cork can afford her.

The *Castor*, likewise,
Tho' a frigate, we prize;
And we'll show that we hold her in honour;

And the *Nimrod* shall feel,
From Mast-head to her keel,
The favours we'll lavish upon her.

The *Trinculo* here,
Shall find *lashings* of cheer,
With her jolly comrade, the *Orestes*;
And the *Hamoaz* lighter,
Altho' she's no tighter,
Shall count the time spent here her best days.

The *Messenger*, steamer—
Right welcome we deem her
With the power of her two hundred horses!
So you're heartily welcome,
Vice-Admiral Malcolm!
With your ships and your land and sea forces.

It is said that the *Fernon*
Is steaming her stern on;
And the *Dee* making straight for our port;
That the gallant *Prince Regent*
Will add to the pageant
And hold at *Hawlbowlie* his court.

That his Majesty's ship!
The *Britannia* will dip
Her bows in the harbour Corconian;
That the brave *Talarera*
Comes hither to share a
Salute with the stout *Caledonia*.

Come, jolly tars, come!
You'll find plenty of room—
Fresh water—good victuals—Cork whiskey;
And, if you delight in
A breakfast of fighting—
Occasions enough to be friskie.

So you're welcome—you're welcome,
Sir Pulteney Malcolm!—
And you too, Lord *Thingumbob* Russell!
Your coming will set
The *cabal* in a fret—
And the Harbour of Cork in a bustle.

The late Captain Burdett, R. N.—At Lewes Assizes, on Tuesday, Edward Heath, chemist, aged 22, was placed at the bar, charged on the Coroner's inquisition with killing and slaying Captain Burdett, at Brighton, on the 18th of May last. He was also tried on a bill found by the Grand Jury. The facts of this sad case were published at the time. The Jury acquitted the prisoner.

Diving.—There is a small cutter now lying in our (Yarmouth) roadstead, belonging to a man named Bell. Her crew consists of six men, several of whom are singularly expert in diving. She sails about from place to place, to offer assistance to recover lost treasure, &c. She has arrived for the purpose (by permission of the Admiralty) of endeavouring to obtain a portion of the treasure lost in the Guernsey Lily transport, which got on the Cross Sand, floated off, and afterwards foundered in the centre of the Yarmouth-roads in forty-three feet water, coming with

stores, &c., from Holland, after the Duke of York's expedition in 1799. The transport was laden with horses, ammunition, along with twenty-five brass field-pieces, a stock of wine, &c. The method these divers use is curious:—The cutter is first placed immediately over the wreck, the diver then, habited in an India-rubber air-tight dress, having a tube attached at the back of the neck to receive the air (which is constantly kept pumping in,) descends from a rope ladder, and gives signals for certain things to be sent down by a small line, which is attended to by those on the deck of the cutter; by this line, baskets and other utensils are sent down for the use of the diver, and sent up again with wine, &c., taken from the wreck. The diver's head-dress is curious; it is composed of copper, and is a complete covering, made much after the manner of the ancient helmet, only that it is much larger than the head, and has in its upper part three glass windows; it weighs 50lbs. He has two other dresses on besides that above-mentioned. He carries down with him 120lbs of lead in two bags. With all this weight, he declares, that when in the water, he appears perfectly free from weight or incumbrance of any sort. There has already been brought up a large quantity of wine, (the bottles curiously tattooed with large and small oysters, which have been tasted, and are excellent,) some copper, iron handles of chests, pieces of gun-carriages, &c. They hope soon to be in possession of the brass guns, valuable plate, and the dollars, which it was known the transport had on board for the purpose of paying the troops employed in the above-mentioned expedition. The Admiralty, we understand, has handsomely given permission to Captain Bell to make what use he pleases of the articles found, only conditioning that the brass guns (if recovered) shall be given up, for which they will return their value. Great numbers of persons from different parts of the country have been off, to view this novel and singular undertaking. Boatmen are in constant attendance, to take off, at moderate charge, those persons who wish to witness this effort of human ingenuity and enterprise. The diver, when under

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water, finds his strength so increased, that he can bend the ends together of the large iron crow-bar, (of $3\frac{1}{2}$ feet long, and $2\frac{1}{2}$ inches in size,) which he takes down with him, to part the wreck. These divers go down alternately about twice a day, but are compelled to take advantage of the tides, when it is slack water. The first descent was on Saturday and has been repeated every day since, which has proved a great treat to numbers of all ranks, who have attended to observe this surprising, perhaps unequalled exhibition.—*Norwich Mercury.*

Port of Liverpool.—The arrival of vessels during the past week has been numerically greater than any previous week since the opening of the port, namely, 190 foreign vessels, and 296 coastwise; making a total of 494 vessels. The duties received at the Custom-house, and the tonnage at the dock-office, are unprecedented in amount.

We regret to have to state the total loss of the *Shannon* whaler, Capt. Davey, from Hull, by having struck on an iceberg in the northern sea, with a fearful destruction of human life. The following extracts from a letter received by the owners, Messrs. Spyvee and Cooper, from the Captain, *via* Hamburgh, will best explain the nature of this fearful calamity; it is dated Davis's Straits, June 13, 1822.—“On Thursday the 26th of April, at 3 p.m., we were running under double-reefed topsails, with a strong wind and sleety weather, when the ship ran stem on to an iceberg. There were three in the fore-castle at the time, but they were not aware of its proximity till the shock knocked them down. The starboard bow was entirely knocked in, the main stem broke, the bowsprit rose, and the cook's coppers thrown as far as the foremast. In short, the vessel was knocked into pieces, and forced along the iceberg, which she struck again with the starboard quarter, damage unknown. The vessel was immediately hauled to, with her head to the north-eastward, and a topsail was got out of the line-room, to put in the hole, and both pumps were set to work; but all to no purpose, for in about 10 or 15 minutes the ship filled and turned over on her broadside, on which some of the crew got for safety, while others were drowning before their eyes. I was washed

3 c

from the main-chains, and caught hold of the main-top. I had not been there long, when they cut away the lower rigging, and the fore and main-masts broke, and the ship righted a little, so that the starboard side of the fore-castle was dry, and fortunately I reached the ship again. When we counted our men, there were seventeen men and two boys missing. We then rigged a tent to shelter us from the sea. Every thing was washed off the deck, and the sea, making a fair breach in, soon began to break up every thing. Boats, bed-cabins, bulk-heads, and every thing in between decks, broke up, and came up the hatchways, but not one single article could be saved. There were two ships in company on the preceding night, but the weather being thick, they were never seen after. We made many attempts to get some provisions, but the sea ran so high, we could get nothing but a cask of flour, caught hold of in the hatchways, so that the people had nothing to eat and drink, but flour, raw beef, and salt-water, for seven days and six nights. Many of the crew were out of their minds, and two died on the morning of the 2d of May, on which day, to our great joy, two vessels were seen coming towards us, which proved to be two Danes, bound to Davis's Straits, with goods and passengers. I, the mate, and twelve men, went on board of one of them, the *Navigation*, Captain Bang; the doctor and twelve men went on board the other, the *Haralfsken*, Captain Grain. Two men died on board our vessel, and five on board the other; they were all out of their minds, and in a shocking state. We have been into one port, and are now in a second, and have another to go into, in Lat. 62 degrees N., whither we have sent the mate and another, to have a leg taken off each, as our doctor went there with the other vessel. If I am spared, I hope to get home in August. There are only twenty of us left."—*Leeds Intelligencer*.

Murder on the High Seas.—A most atrocious murder has been committed on the high seas. Captain Eves, of the brig *Matilda*, bound from Liverpool to St. Thomas, was brutally assaulted on the 10th of April, when in

lat. 37. 42. lon. 15. 46. W. by Robert Chemanes, the ship's carpenter. The man had manifested feelings of insubordination for some days previous, declining, on one or two occasions, to obey orders. On the day of the melancholy catastrophe, he did not appear on deck, and the captain ordered the mate to ascertain the reason. He pleaded illness; and Captain Eves immediately went forward to ascertain his complaint, and, while going down the fore-castle, found himself murderously attacked by Chemanes, who was armed with an adze. The captain received a desperate cut in his thigh, which laid it bare to the bone. The whole was the work of an instant. The mate and others were down the ladder in a few seconds, and they found the unfortunate master lying bathed in blood.—The wretch was instantly disarmed and placed in irons, and his victim languished in torments till the 15th, when death terminated his sufferings. The command of the vessel devolved upon the mate, Peter Johnstone, and he steered for Madeira, where, in consequence of the unfavourable state of the weather, he did not arrive until the 17th. He immediately went on board his Majesty's ship, the *Stag*, Captain Sir Thomas Trowbridge, in order to have his directions respecting the removal of the murderer to England. Sir Thomas referred the mate to the English consul, but the health-officer would not allow any communication with the shore, without bringing the vessel to anchor; she in consequence proceeded to St. Thomas, with the prisoner on board in irons.—Captain Eves was a man most highly respected, was in the employment of Messrs. Ripley, of Liverpool, and has left a wife and five children to deplore their loss.—*Hull Paper*, 26th June, 1832.

The negro colony of Liberia continues to prosper in a surprising manner, and has already given occasion to its founders, the enterprising people of the United States of America, to boast of it as "the most important event that has occurred since the declaration of their independence." A correspondent of Mr. Cusson's, a gentleman of Philadelphia, who has taken great

interest in the colony, thus describes the town of Monrovia, which he had visited: "All the colonists appeared to be in good health; all my expectations in regard to the aspect of things—the health, harmony, order, contentment, industry, and general prosperity of the settlers—were more than realized. There are about two hundred buildings in the town of Monrovia, extending along the Cape of Messurado not much less than a mile and a quarter; most of them are good substantial houses and stores (the first story of many of them being of stone), and some of them handsome, spacious,

painted, and with Venetian blinds. Nothing struck me as more remarkable than the great superiority in intelligence, manners, conversation, dress, and general appearance in every respect, of the people, over their coloured brethren in America. I know of no place where the Sabbath appears to be more respected than in Monrovia." Several free people of colour, as well as blacks, have lately joined the colony from the United States, and every thing seems to indicate the commencement of a new era to the African.—*Morning Herald.*

PROMOTIONS AND APPOINTMENTS.

From the Naval Papers.

ÆOLUS—J. Kane, *Gunner*.
ÆTNA—J. A. Legarde, *Lieut.*
ALBAN, St. V.—A. Kilroy, *Assist. Surg.*
AMAZON, 46—R. Cox, *Carpr.*
ASIA, 84—Wm. Picking, *Com.*
ATHOL, 28—J. Riley, *Carpr.*
BRITON, 46—Pred. Patten, *1st Lieut.*
CHAMPION, 18—W. B. Borham, *Purser*;
 C. Denny, *Assist. Surgeon*; W. Hatch, *Gunner*.
COCKATRICE, 6—T. R. Badge, *Master*.
COLLINGWOOD—T. Bowman, *Carpr.*
CONQUESTADOR—W. Davis, *Boatswain*.
CRACKER, 1—Thos. B. Stewart, *Male*.
CURLEW, 10—D. Quinton, *Master*.
DEFENCE, 74—J. Fisher, *Carpr.*
DELIGHT, 6—Nicholson, *Gunner*.
DONEGAL, 78—G. A. Acheson, *Surg.*
DRYAD, 42—Joseph M. Motley, *Lieut.*;
 George J. Fox, *Surg.*
EMERALD, 42—Henry Hall, *Gunner*.
EXCELLENT, 58—J. E. Bingham, *Lieut.*;
 J. T. Brown, *Supern. Gunner*.
FERRER, 10—John Tucker, *Gunner*.
FLAMER, St. V.—R. Bastard, *Lieut.*
FORTH, 46—M. Hogan, *Carpr.*
HARLEQUIN—R. White, *Carpr.*
HAVOCK, 12—Thos. Oliphant, *Gunner*.
HAZARD, 18—J. R. Gage, *Carpr.*
HAWK—J. Williams, *Boatswain*.
HERMES, St. V.—A. Kennedy, *Lieut.*
HORNET, 6—J. Keeling, *Lieut.*;
 Caught, *Master*.
HYPERION, 42—W. Ellis, *Carpr.*
LAPWING, 6—John Langdon, *Master*.
MAIDSTONE, 42—Jas. Campbell, *Lieut.*
METEOR, St. V.—H. D. R. Henning, *Assist.*
Surg.
MINOTAUR, 74—W. Goldie, *Carpr.*
MUTINE, 4—J. M. Valence, *Assist. Surg.*
ORDINARY—W. C. Hillier.
POWERFUL, 84—T. Wells, *Carpr.*
RACER—W. C. White, *Carpr.*

RANGER, 28—J. Card, *Carpr.*;
 J. W. Dowers, *Mate*.
REVENGE, 78—G. Carver, *Gunner*.
RINGDOVE—S. Rawle, *Carpr.*
ROVER, 18—Sir George Young, *Bart. Com.*;
 J. A. W. Hill, *Lieut.*;
 J. F. Birch, *Lieut.*;
 G. Clarke, *Purser*.
SEAFLOWER—J. Morgan, *Lieut.*
SYLVIA, 1—T. W. Jewell, *Assist. Surg.*
TENEDES—J. Lambert, *Boatswain*.
THUNDERER, 84—J. Stride, *Carpr.*
TRIBUNE, 42—J. Singleton, *Carpr.*
VICTORY, 104—Dr. David Thompson, *Superintendent Assist. Surg.*
WASP, 18—A. Knight, *Carpr.*
WINCHESTER, 50—G. L. Campbell, *Lieut.*
WOLVERINE—J. Hinton, *Carpr.*
HASTE HILL, *Semaphore*—C. M. Chapman, *Lieut.*
COM. SUPER.—*Lieutenants* N. Kortright, J. Campbell; *Surgeon* C. J. Cox.

ROYAL MARINES.

WOOLWICH DIV.—W. J. Hunter, *Assist. Surg.*;
 2d *Lieut.* J. Buchanan.
PORTSMOUTH DIV.—2d *Lieut.* R. Nutford.

Retired Commander William Keppel, from the list of 1830, to the upper retired Commander's list.

Mr. J. Sheffield, late of the School of Naval Architecture, is appointed Foreman of Chatham Dock-yard, vice Edye, promoted to the Navy Office.

Mr. R. Peel, *Gunner*, from the lakes of Canada, is ordered to be borne on the cheque at Portsmouth.

Mr. John Browne, late *Gunner* of the *Procris*, is ordered to be borne on the cheque at Portsmouth.

Messrs. D. R. G. Walker, and Dr. D. Thompson are appointed *Assistant-Surgeons* at Plymouth Hospital.

MOVEMENTS OF TRANSPORTS.

AMPHITRITE—*Lieut.* Cooley, Aug. Jersey.
INDUSTRY—20th Aug. sailed for Lisbon.
LEONIDAS—*Lieut.* Woolridge, 9th July spoken in lat. 46 N. 28 W. by the *Perseverance*.
MARSHALL BENNET—*Lieut.* Ward, Woolwich.

ORESTES—*Lieut.* Garret, 2d July, arrived at Quebec.

PRINCE REGENT—*Ionian Islands*.

WANDERER—*Lieut.* Young, Valparaiso.

WILLIAM HARRIS—*Lieut.* Stevenson, Halifax.

**NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR THE
PRESENT YEAR.**

Reported to 20th June.				Reported to 20th July.			
VESSEL.	RIG.	TONS.	WHERE BUILT	VESSELS.	RIG.	TONS.	WHERE BUILT
Adonis	Schooner	80	Milford.	Alexander	Schooner	70	Elie.
Alice	Brig	155	Milford.	Alice	Brig	155	Milford.
Blackwater	Snow	231	Maldon.	Brilliant	Schooner	102	River Thames.
Bristol	Schooner	98	Sunderland.	Bristol	Schooner	98	Sunderland.
Chieftain	Barque	333	Leith.	Brothock	Barque	142	Arbroth.
Edwin	Snow	—	Limekilns.	Cesar	Brig	265	Sunderland.
Emblem	Brig	221	Sunderland.	Celt	Brig	216	Greenock.
Fanny	Brig	196	Belfast.	Gleaner	Sloop	33	Biddeford.
Fruiterer	Schooner	58	Livingstone.	Hannak	Schooner	66	Shields.
John	Schooner	250	Selby.	Jack	Snow	259	River Thames.
John & Eliza	Sloop	45	Leith.	Jane and Ann	Smack	66	Pullhelly.
Margaret	Sloop	60	Duubar.	John Peat	Brig	162	Maryport.
Ocean Queen	Barque	267	Whitby.	John Souckay	Barque	234	Liverpool.
Peru	Barque	203	Isle of Man.	Kate	Brig	161	Scilly.
Quayside	Schooner	234	Sunderland.	Lark	Schooner	55	Aberiatwith.
Rosabell	Schooner	93	Dartmouth.	Lawrence	Barque	276	Harrington.
Sally	Sloop	63	Spey.	Lord Althorp	Brig	233	Whitehaven.
Stuart Mon-				Mary	Schooner	117	Newcastle.
teath	Smack	53	Dumfries.	Mary Ant	Schooner	60	Hull.
Superb	Schooner	128	Ipswich.	Medora	Schooner	154	Yarmouth.
Thomas Rich-	Brig	150	Stockton.	Rosewall	Schooner	99	Biddeford.
ardson				Sarah	Brig	188	Yarmouth.
William	Snow	164	Lerwick.	Superb	Ship	353	Leith.
Hamley				Thomas Rich-	Brig	150	Stockton.
				ardson			
				Westmore-	Barque	508	Lynn.
				land			

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 332.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
252 Alcides	Fearon	Pernmbco.	Falmouth	Pernambuco	2 June	6764 Cargo lost.
253 Alciope		Liverpool	Miramichi	Bks. Newfd.		6767 Ro.f.of.cw. a.
254 Ann	Atchison	Hull	Wybourg.	Bornholm	15 July	6766 Crew saved.
255 Beaver		S.John N.B	Londondr.	47 N. 33 W.	4 July	6770 Waterlogged.
256 Carleton						run f. of, Cw. ad.
257 Elizabeth	M'Dowall	Halifax		45 N. 56 W.	June	6767 Bottom up.
258 Enterprize	Whaler	Larne		Off Cornwall	26 July	6764 Crew saved.
259 Friends	Walker	Newcastle	Limerick	I. Mocha		6768 Crew saved.
260 Harriet	Buckle	Sydney		not said		6765
261 Hopewell	Simpson	Leith		Fenning's Is.	not said	6767 Whaler.Cw.ad
262 John Bull	Whaler	not heard	of since	Hauslev Rks.	14 Aug.	6770 Crew, &c. ad.
263 Meredith	Frederic	Bristol	Labradore	May, 1830		6769
264 Paragon	Boyd	Demerara	Glasgow	Labradore	31 Nov.	6767 Crew saved.
265 Prince of				Barbadoes	5 July	6768 Crew saved.
Waterloo		Cork	Quebec	Atlantic	4 Aug.	6767 Fullwtr.cw.ad
266 Princess						
Victoria				Off C. Sweet-	July	6766 Master and
				nose		crew saved.
267 Reaper	Snow			C. Holland	21 July	6764 Off Geste-
268 Rhine	Hart	London				dorf, doubtful.
269 R. Rimmer				Poster Bank	27 July	6764 Mstr.prt.cw.a.
270 Shannon	Davy	Hull	Davis' Strt.	Charles River		6767 To be sold.
271 Tartar	Hall	Gothenburg	London	58 N. 42 W.	25 April	6766 Struck an iceb
272 Wellington		Worlington		45 N. 28 W.	July	6770
273 William IV.		Havana	Guernsey	54 N. 21 W.	30 July	6769 Waterlogged.
				32 N. 67 W.		6767 Crew arrived
						at Charleston.
274 Wilton	Purdy	Quebec	Clare	52 N. 20 W.	July	6765 Ro. f. of, abd.

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Delaford		Liverpool	Quebec	Dundrum By.	4 Aug.	6767 On sh. off Belf.
Elbe		Limerick	London	Tarbert	20 July	6762 Aground.
Fanny	Majundie	Haiti	Cowes	Virginia	20 June	6766 Dam. & leaky.
Mobile	Forrest	Matanzas	Petersburg	Copenhagen	17 July	6762 Run foul of.
Nancy	Stormont	Archangel	Hull	Spurn Point	23 July	6763 Got off 29th.
Rachael	Irvine	Leith	Quebec	Cork	19 July	6762 Lky. To disch.
Sir G. Murray	Beverley	Liverpool	Quebec	Arichat	20 May	6766 Lky. To disch.
Spraycombe		Glo'ster	London	Salcombe	24 July	6763 Run foul of, and damaged.
Waterloo	Addison	Bengal	London	Mauritius	17 April	6767 Leaky. To heave down.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
Abeona		Belfast	Quebec	Off C. Race	25 June	6762
Acton		Limerick	Quebec	G. St. Lawren.	22 June	6763
Alexander		London	Madras	7 N 23 W	1 June	6762
America		Liverpool	New York	49 N 31 W	22 July	6768
Ann	M'Farlane	Demerara	Quebec	Off Barbadoes	12 June	6762
Ann and Mary		Cork	Quebec	46 N 31 W	26 June	6762
Aquatic		Liverpool	Quebec	47 N 60 W	13 July	6768 Making for nearest port.
Ariel	Thompson	Glasgow	St. Andrw's	53 N 21 W	11 July	6762
Arundel		London	N. S. Wales	4 N 21 W	18 June	6768
Baltic Merchant	Crow	Dublin	Quebec	51 N 46 W	2 July	6768
Berwickshire		China	New York	12 S 30 W	2 June	6768
Capricorn		Liverpool	New York	37 N 38 W	17 July	6768
Catherina	Whaler	Leith	Outward	25 S 42 W	15 May	6762
Chiefan		Sunderland	Halifax	47 N 44 W	5 July	6762
Columbus		Cork	Trieste	46 N 52 W	30 June	6763
Cornwall		Liverpool	Off Cape St. Vincent	Off Cape St. Vincent	16 July	6763
Daah	Farrant	Liverpool	Salonica	Off C. Algiers	5 July	6763
David Milne	Cook	Newcastle	Off Cape St. Vincent	Off Cape St. Vincent	17 July	6763
Douglas		Sunderland	Philadelph.	47 N 24 W	25 July	6763
Eliza		Off St. Paul's	Off St. Paul's	Off St. Paul's	24 June	6763
Elizabeth		Greenock	Quebec	48 N 33 W	17 July	6763
Eveline	Sorel	London	St Domingo	20 N 64 W	7 June	6763
Flora		Liverpool	Halifax	47 N 30 W	26 July	6763
Frances		Clyde	Mauritius	39 N 14 W	7 July	6764
Funchal		Clyde	Newfoundld	30 July	6769	
George and James		Plymouth	Pernambuc	8 N 23 W	24 June	6768
Halifax		Liverpool	Halifax	46 N 49 W	17 July	6768
Isabella		Oporto	N. Brunsw.	44 N 37 W	6 July	6763
Jane and Mary		Aberdeen	New York	52 N 22 W	9 July	6762
Julius Caesar		Quebec	Quebec	46 N 41 W	27 July	6769
Lady Douglas		Liverpool	Africa	47 N 12 W	17 July	6763
Lapwing		Lisbon	Smyrna	Off C. de Gat.	2 July	6764 Of Liverpool.
Longford		Quebec	Near Gaspe	Near Gaspe	11 July	6768 Refused adm. to St. John's, N.B.
Nelly		Whitehavn.	Quebec	37 N 37 W	11 July	6768
Orontes	Baker	London	Madras	2 N 87 E	7 March	6768
Oxford		Glasgow	Bermuda	51 N 40 W	29 June	6762
Perseus		London	Chaleur	40 N 52 W	10 July	6768
Pitt		Ayr	Leghorn	54 N 12 W	12 July	6762
Reform		Liverpool	Off Cape St. Vincent	Off Cape St. Vincent	16 July	6762
Roscius		Newcastle	Bermuda	40 N 31 W	15 July	6768
Ruby Castle		Guernsey	New York	44 N 41 W	15 July	6768
Shannon		Messina	Rio Janeiro	Off Malaga	10 July	6768
Sharp		Cromarty	Quebec	50 N 34 W	15 July	6768
Terioldale		Liverpool	Gaspe	49 N 33 W	29 July	6768
Trial		Londerry.	Quebec	42 N 39 W	1 July	6762
Vibelia		London	Quebec	49 N 11 W	3 Aug.	6768
Wharfinger		London	Quebec	45 N 30 W	13 July	6768
York		Liverpool	New York	42 N 53 W	22 July	6768

ADMIRALTY, } ADMIRALTY ORDERS.
17th AUGUST, 1832. } PEACE ESTABLISHMENT

Rates of Passages by H. M. Vessels employed for the Conveyance of Mails.

	STATIONS.	VOYAGES.	CABIN.	STORAGE.		
Steam Vessels.	LISBON.	To or from Falmouth and Lisbon or Oporto . . .	£15 0 0	£8 0 0		
		MEDITERRANEAN.	From Falmouth to Cadiz or Gibraltar . . .	21 0 0	12 0 0	
			Ditto to Malta . . .	34 0 0	19 0 0	
			Ditto to Corfu . . .	42 0 0	24 0 0	
			To or from Gibraltar and Malta . . .	16 0 0	9 0 0	
			To or from Gibraltar and Corfu . . .	26 0 0	14 0 0	
			To or from Malta and Patras . . .	10 0 0	6 0 0	
			To or from Malta and Corfu (Via Patras) . . .	12 0 0	7 0 0	
			To or from Malta and Corfu direct . . .	10 0 0	6 0 0	
			From Corfu to Falmouth . . .	42 0 0	24 0 0	
			From Malta to Falmouth . . .	34 0 0	19 0 0	
			From Gibraltar or Cadiz to Falmouth . . .	21 0 0	12 0 0	
Sailing Vessels.	BRAZILS AND BUENOS AYRES.		From Falmouth to Madeira . . .	28 0 0	15 0 0	
		Ditto to Teneriffe . . .	30 0 0	16 0 0		
		To or from Falmouth and Pernambuco . . .	55 0 0	28 0 0		
		To or from Falmouth and Bahia . . .	58 0 0	30 0 0		
		To or from Falmouth and Rio Janeiro (Via Pernambuco and Bahia) . . .	65 0 0	35 0 0		
		To or from Falmouth and Buenos Ayres (Via ditto) . . .	80 0 0	43 0 0		
		To or from Falmouth and Rio Janeiro direct . . .	60 0 0	32 0 0		
		To or from Falmouth and Buenos Ayres by Rio Janeiro direct . . .	75 0 0	40 0 0		
		To or from Buenos Ayres and Rio Janeiro . . .	20 0 0	12 0 0		
		Sailing Vessels.	NORTH AMERICA.	From Falmouth to Halifax . . .	35 0 0	20 0 0
From Falmouth to Bermuda (Via Halifax) . . .	45 0 0			25 0 0		
To or from Halifax and Bermuda . . .	12 0 0			7 0 0		
From Bermuda to Falmouth (Via Halifax) . . .	40 0 0			22 0 0		
From Halifax to Falmouth . . .	30 0 0			16 0 0		
Sailing Vessels.	WEST INDIES, CARTHAGENA, AND MEXICO.			From Falmouth, to Barbadoes, St. Vincent, Grenada, St. Lucie, Martinique, or St. Domingo . . .	43 0 0	22 0 0
				to Dominica or Guadaloupe . . .	44 0 0	23 0 0
				to Antigua or Montserrat . . .	46 0 0	25 0 0
				to Nevis or St. Kitts . . .	47 0 0	26 0 0
				to Tortola, St. Thomas, or Jamaica . . .	48 0 0	27 0 0
		to Carthagena, or Honduras . . .	55 0 0	30 0 0		
		to Vera Cruz or Tampico . . .	60 0 0	32 0 0		
		From St. Thomas' to Falmouth . . .	50 0 0	28 0 0		
		Jamaica or Havana to Falmouth . . .	60 0 0	32 0 0		
		Carthagena to Falmouth . . .	66 0 0	35 0 0		
Vera Cruz to Falmouth . . .	70 0 0	38 0 0				

N.B. All former rates of passages to be cancelled.
 Intermediate passages, not mentioned, to be paid proportionably with the above, in reference to time and distance.
 Female servants to pay two-thirds of the cabin passage money.
 Men servants as steerage passengers.
 Children under three years of age to go free—under nine years of age to pay as steerage passengers—and above nine years, as cabin passengers.
 Each passenger allowed to carry any weight of linen, wearing apparel, and books, not exceeding 40lbs.
 Passengers not proceeding after taking their passage, forfeit half the passage money.
 Bedding, in sailing packets, to be found by the passengers.
 The passage money to be so paid as to realize the amount sterling in England.
 No carriages to be carried in sailing packets.
 Any Commander of a packet demanding more than the above authorized rates will incur the high displeasure of the Lords Commissioners of the Admiralty.

By Command of their Lordships,
 GEORGE ELLIOT.

ADMIRALTY ORDERS, &c.

(Circular.)

No. 78, substituted for Circular of same No. which is cancelled.

“By the Commissioners for executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, &c.

“Whereas we have had under our consideration the scale of Powder and Shot allowed by art. 10, sec. 4, chap. 6, of the Naval Instructions, to be used on board His Majesty's ships for exercise, and also our circular Memorandum, No. 62, of the 22d July last, on the same subject, we hereby desire and direct, that the allowance of Powder for exercise shall in future be issued according to the following scale, viz.:

Single Shotted for each Gun.

In the first six months after being commissioned 12 rounds.
In the second six months after being commissioned 9 —
In every subsequent six months 7 —

Musket Cartridges, as many as will furnish one half of the seamen, and all the marines of the complement, half blank, and half with ball, for each man, &c.

In the first six months after being commissioned 10 rounds.
In the second six months after being commissioned 20 —
In every subsequent six months 20 —

“The whole or any part of this quantity to be fired without shot, should the situation of the ship, or other circumstances, require it.

“The Cartridges used in this exercise are never to be filled with more than the reduced charge of Powder.

“In addition to the above allowance for exercise, all ships are to be allowed for each of their two lightest Guns on the Forecastle, or for each of their two Bow Guns, where there is no Forecastle, the following quantities to be used for ‘Short Practice,’ that is for

exercising at a Target hung from the Fore Yard-arm, or Fore Rigging, viz.:

1st and 2d Rates	85 rounds.
3d Rates	70 —
4th Rates	60 —
5th Rates	30 —
All other Vessels	10 —

And for this practice the scaling allowance of powder only is to be used.

“During the first six months a ship is in commission, four rounds of blank cartridges for each gun, in addition to the above quantities, filled with the allowance for scaling, may also be expended in exercise.

“The Powder and Shot allowed for exercise are not to be fired away at one or two exercises, but the allowance is to be divided during the six months into such proportions as may keep the men in constant practice, not exceeding two rounds and half per week, unless by permission in writing of the senior officer.

“Given under our hands this 1st day of June, 1832.

“S. J. BROOKE PECELL,
G. BARRINGTON.

“To all Commanders-in-chief, Captains, and Commanding Officers of His Majesty's Ships and Vessels.

“By command of their Lordships,
“JOHN BARROW.”

PATTERN OF THE SWORD ORNAMENTS INTENDED FOR THE OFFICERS OF THE ROYAL NAVY.

Admirals, see Fig. 1.—Scabbard black leather, top locket 4 inches long, middle locket 3 inches, with loops and rings, chape 6½ inches, engraved with oak bands and threaded scrolls; the intermediate spaces matted dead gold, with honeysuckle ornament at bottom of chape.

Captains, &c. see Fig. 2.—Scabbard black leather, top locket 4 inches long, middle locket 3 inches threaded, with loops and rings, chape 6½ inches, with horse-shoe and honeysuckle ornament engraved at bottom, agreeable to pattern.

Births.

On the 23d of July, at High Wycombe, the lady of Lieut. Huffam, R.N. of a daughter.

On the 2d of August, at His Majesty's dock-yard, Sheerness, the lady of Captain A. King, of the Ordinary, and superintendent of that dock-yard, of a daughter.

On the 29th of July, at Bath, the lady of Lieutenant H. Brett, R.N. of a daughter, (still born.)

On the 27th of July, at Bath, the lady of Captain Lysaght, R.N. of a son.

On the 29th of July, in London, Lady Sarah Ingestrie, of a son.

On the 5th of August, in East Emma Place, Stonehouse, the lady of Captain Cammilen, R.N. of a daughter.

At Mid Lavant, the lady of William Webber, Esq. R.N. of a son.

On the 19th of August, at Hemerdon, near

Plymouth, the lady of Captain George Woolcombe, R.N. of a son.

At Southsea, on the 19th inst., the lady of Captain Clements, R.M. of a son.

On the 18th inst., the lady of Lieut. White, R.M. of a son.

Marriages.

On the 25th of July, at All Saints Church, Chichester, by the Rev. Lionel W. Fraser, of Horsham, Captain Charles Fraser, R.N. of Ashling, to Miss Mary-Elizabeth Fraser, of that city.

At Kenton, Lieut. Reynolds Rogers, R.N. Dawlish, eldest son of Capt. Reynolds Rogers, R.N. of Plymouth, to Elizabeth Arcott, daughter of Mr. Arcott of Exeter.

On the 4th of Aug., at Portsmouth Church, Captain Gilmore, R.N. to Mrs. Harding of Portsmouth.

At St. Mary's, Mary-le-bone, Mr. John Lander, (the youngest of the two African travellers,) to Mary, fifth daughter of Mr. Livett, of Wyndham-street, Bryanston-square.

At Weymouth, on the 9th of August, by the Rev. W. Brapsey, Mr. P. P. Inskip, R.N. of Plymouth, to Elizabeth, eldest daughter of the late James Saunders, Esq., Alderman of that place.

On the 15th of August, at St. Mary's, Bryanston-square, by the Rev. T. S. Hodges, John Harvey Boteler, Esq., Commander, R.N. to Helen Agnes, fifth daughter of the late James West, Esq. of Bryanston-square.

On Tuesday the 21st inst., at Alverstoke, by the Rev. Thomas Phillips, A.M., Samuel-Young-Henderson Harding, Lieutenant in the Royal Marine Corps, to Elizabeth Bower, both of Alverstoke.

Deaths.

On Thursday the 2d of August, at his residence at Ham-street, Plymouth, after a lingering illness, which he sustained with a truly christian fortitude and resignation, Sir Israel Pellew, K.C.B. Admiral of the Blue squadron, and brother to Lord Viscount Exmouth. Sir Israel entered the naval service at a very early age. In 1783 he commanded the Resolution cutter, and captured a Dutch privateer, after a smart action of an hour and a half; he was soon after promoted to the rank of Commander, and served as a volunteer on board La Nympe, when she captured La Cleopatra, in 1793, and was, in consequence, promoted to the rank of Captain. He commanded the Squirrel, and subsequently the Amphion, and was in his cabin, at dinner, on board the latter, when she unfortunately blew up, in Haroaze, and one of the few that was providentially saved. In 1804 he was appointed to the Conqueror, and commanded her in the glorious and memorable battle at Trafalgar. In 1810 he was promoted to the rank of Rear-Admiral: in the ensuing year he was appointed Captain of the fleet to his brother in the Mediterranean, where he continued until the peace. In 1819 he was advanced to Vice-Admiral, and in 1830 to Admiral. Sir Israel was nominated a Knight Commander of the Bath in 1815.

At his lodgings, in King-street, Portsea, aged 50 years, the Rev. John Taylor, Chaplain, R.N.

At Edmonton, a few days since, Lieut. W. Taylor, R.N.

On the 23d of July, at Southampton, at the house of his son-in-law, Captain Stephens, R.N. Mr. Richard Comber, aged 79, many years chief Mate of the Swan and Stork, revenue cruisers, leaving a large family of children, grandchildren, and great-grandchildren, to lament his loss. His remains will be carried to Coway for interment.

On the 5th of August, at the house of his brother, Henry Little, Esq., Lieut. Edward Little, R.N. (1828.)

Lately, Joseph White, R.N., (1815,) of the coast-guard service, Ireland.

At his house, Patcham-Field, on the 5th of August, aged 63, John Rains, Esq., retired Commander, R.N.

On the 7th of August, in George-street, Devonport, of cholera, aged 25, Mr. Smith of His Majesty's dock-yard.

At Portsea, on the 8th of August, aged 61, Mr. Thomas Monk, carpenter R.N.

On the 11th of August, at Alresford, after an illness of only two days, much respected, Captain Harry Hopkins, R.N. aged 52 years.

At St. John's, Newfoundland, on the 27th of June last, Captain G. W. Blamey, R.N. late of Plymouth.

In April last, at the Cape of Good Hope, on his way to the East Indies, Mr. W. M'Leod, aged 48, Carpenter of H.M.S. Melville, leaving a widow and four children to mourn the loss of an excellent husband and father.

June 23, off Lisbon, Mr. W. Pope, clerk of H.M.S. Revenge, eldest son of William P. Pope, Esq.

Lately, Second-Lieut. John Gwinnell, of the Royal Marines.

Lieut. Charles Taylor, R.N. and Lieut. the Hon. E. R. Curzon.

In the 38th year of his age, Mr. Charles O. Davies, purser R.N.

On the 21st of July, at Haste Hill, Semaphore station, Lieut. J. Bramwell, aged 47, after a long and severe illness.

On the 27th of July, at Knowle Cottage, Kingsbridge, Thomas Darracott, Esq., Lieut. R.N. and out-pensioner of Greenwich Hospital, in the 70th year of his age, after having been sixty years in the service of his king and country, and engaged in nine severe actions, the last of which was the memorable battle of the Nile, in which he was wounded.

At Bath, aged 80, Mr. John Mallet. He was one of the few that escaped the wreck of the Royal George, Admiral Kempenfelt, off Spithead, July 28, 1782; and probably the last survivor of those who were saved.

In Russel-street, Plymouth, Mr. Barker, superannuated Boatswain.

In Limerick, deservedly lamented, Richard Franklin, Esq. Surgeon. Mr. Franklin commenced his professional career in the naval service of his country; having served as an Assistant-Surgeon on board the Valiant, 74, on the 12th of April, 1782, which ship bore so distinguished and gallant a part in the celebrated naval action and victory gained by our fleet (under the command of Admiral Lord Rodney) over the enemies of Britain.

Conn. G. M. Keith, R.N.

Mr. Miller, Boatswain of the Sheer hulk, Woolwich.

Lieut. H. Watling, R.N. killed by a fall from a gig.

Lately, at Chester, Captain John-Murray Northey, R.N. aged 65.

On Thursday, at Southampton, Lieutenant Chaproniere, of the Royal Marines, of a disease contracted in the pestilential island of Fernando Po.

THE
NAUTICAL MAGAZINE,
&c.

OCTOBER, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

59. SOUNDINGS IN THE ATLANTIC.

LIEUT. A. SAINTHILL, R.N. commander of the ship 'Beaufort,' lately returned from Jamaica, informs us, that on the 3d of August last, when in lat. $42^{\circ} 37'$ N. and long. $41^{\circ} 45'$ W. he observed the water to be discoloured; in consequence of which he tried twice for soundings, and found rocky ground at the depth of one hundred fathoms. Lieutenant Sainthill is also of opinion, that soundings might be found from the meridian of 20° W. to the banks of Newfoundland.

We look on this as a discovery of very great importance to navigation; and as such, we are anxious to impress on the minds of seamen, that no opportunity should be lost in following it up, by trying for soundings in this part of the Atlantic Ocean. That the bottom found by Lieutenant Sainthill is connected with the great bank of Newfoundland, and probably at no very considerable depth, appears next to certain, from a glance at the chart; and, as a matter of mere curiosity only, it would be exceedingly desirable to ascertain how far soundings might be found to the eastward. Were a good set of soundings obtained from the meridian of 20° W., which Lieutenant Sainthill is of opinion might be done, the result would be highly useful, as the intelligent seaman will at once perceive that it would afford him the means of correcting his longitude in crossing the Atlantic. Soundings have been obtained at very great depths, even at upwards of a thousand fathoms, by Captain Ross, in Baffin's Bay, and at 683 fathoms by Captain Vidal, on the bank on which the British Islands are situated. So

great a depth, however, would probably be only within the reach of the means possessed by His Majesty's ships; but we are satisfied, that, besides naval officers, there are others in command of British vessels, whose attention will be devoted to the investigation of this important question.

60. REPORT OF CAPTAIN D. ROSS, HON. E. I. C. MARINE, ON THE SAND HEADS, AND ENTRANCE OF THE RIVER HOOGLY.

On a recent examination of the lower part of the river, by order of the Government, to ascertain if the South Channel were again navigable, I have to report, that in consequence of the Long Sand, joining the Fisherman's Flat, above Ingeller Creek, and having only $1\frac{1}{2}$ fathoms on it, at low water, there is no channel thereabouts fit for ships; and Lloyd's Channel continues to be the best, and only fit crossing between Saugor and Kedgerree, although I observed in one part we had as little as 2 fathoms, at low water.

Thornhill's Channel was also examined, and found clear; it possesses a great advantage over the old channel; for by being under the lee of the reef in the S.W. Monsoon, the heavy swell that is met with in the old channel, and which frequently prevents a ship tacking, is avoided by using Thornhill's Channel; and with the wind at S.W. a ship will lay through it on her starboard tack, and proceed directly to sea. The depth in the channel, at low water, spring tides, varies from 3 to $3\frac{1}{4}$ fathoms, and four buoys have been laid down, to mark its extent, as follows:—

A red buoy on the reef, named Reef Head Buoy. It lies on the western side of the south entrance, in $2\frac{1}{4}$ fathoms, at low water, and in a direction about N.E. $\frac{3}{4}$ E. distant from it $1\frac{1}{2}$ mile. There is a black buoy lying in $3\frac{1}{4}$ fathoms on the south-west spit of the Gaspar Sand; it is named Lower Buoy of Thornhill's Channel, and the depth between the two varies from 3 to $3\frac{1}{4}$ fathoms, and deepest near the Black Buoy. The northern part of the channel is marked by a Red Buoy, placed near the edge of the Long Sand, in $3\frac{1}{4}$ fathoms, at low water, and named North West Buoy of Thornhill's Channel. And about east from it, distant $1\frac{1}{2}$ mile, there is a Black Buoy lying in about 3 fathoms, at low water, on the N.W. end of the Gaspar Sand; it is named the Upper Buoy of Thornhill's Channel. The depth between these two buoys varies from 3 to $3\frac{1}{4}$ fathoms, and is deepest about mid channel.

The following are the bearings from the Reef Head Buoy:—

The Spit Buoy bears	.	.	.	.	S. 12° 56' E.
Upper Floating Light Buoy	.	.	.	.	S. 39 00 E.
Lower Middle Ground Buoy	.	.	.	.	S. 75 33 E.
Lower Buoy of the Gaspar, distant $3\frac{1}{4}$ miles	.	.	.	.	N. 68 27 E.
Upper Middle Ground Buoy	.	.	.	.	N. 39 48 E.
Lower Buoy of Thornhill's Channel	.	.	.	.	N. 22 30 E.
Upper Buoy of do.	do.	dist.	$6\frac{1}{2}$ miles	.	N. 1 5 W.
N. W. Buoy of do.	do.	dist.	$6\frac{1}{4}$ miles	.	N. 16 30 W.
The Tripod on Edmonston's Island	.	.	.	.	N. 61 24 E.
The large Tree on Middleton Point	.	.	.	.	N. 2 9 E.

From the N. W. Buoy of Thornhill's Channel.

The large Tree on Middleton Point bears N. 21° 33' E. dist. $6\frac{1}{10}$ miles.
 The Upper Buoy of Thornhill's Channel, N. 89° 42' E. distant $1\frac{1}{4}$ miles.
 The Tripod on Edmonston's Island, S. 82° 47' E.

The Lower Buoy of Thornhill's Channel, S. $28^{\circ} 8'$ E. distant $5\frac{1}{2}$ miles.

From the Upper Buoy on Thornhill's Channel, the large Tree on Middleton's Point bears, N. $5^{\circ} 38'$ E. distant 6 miles, and the Upper Buoy of the Gaspar, S. $78^{\circ} 26'$ E. distant $2\frac{1}{4}$ miles.

From the Upper Buoy of the Gaspar.

The S.-W. extremity of Saugor Island bears N. 18° W.

The large Tree on the Point, N. $14^{\circ} 2'$ W. distant 6-10 miles.

The Tripod on Edmonston's Island, S. $82^{\circ} 52'$ E. distant $7\frac{1}{4}$ miles.

Upper Middle Ground Buoy, S. $42^{\circ} 28'$ E. distant $2\frac{1}{4}$ miles.

And the Lower Buoy of the Gaspar, S. $15^{\circ} 52'$ E. distant $4\frac{1}{4}$ miles.

The above are all true bearings; and to obtain the magnetic bearings, allow 2 degrees easterly variation.

It has been said, that the extremities of the Sands, at the entrance of this river, have a tendency to the southward, and, by the direction of the Marine Board, I examined the Eastern Reef and Saugor Sand, and found the end of the former in $20^{\circ} 59' 36''$ N. lat. and in $88^{\circ} 12' 8''$ E. long.; the end of the latter is in $21^{\circ} 2' 9''$ N. and $88^{\circ} 20' 57''$ E. being in the meridian of Fort William Flagstaff. The Lower Floating Light Buoy is in $21^{\circ} 7'$ N. and $88^{\circ} 12' 40''$ E. From it the south end of the Reef bears S. $\frac{1}{2}$ W. distant $7\frac{1}{2}$ miles, and the end of Saugor Sand E. by S. $\frac{1}{2}$ S. $9\frac{1}{2}$ miles.

By referring to Captain Maxfield's chart of the Sand Heads, it will be seen that my observations place the end of the Reef $1' 36''$, and the end of Saugor Sand $2' 9''$ more northerly than is marked thereon. The Floating Light Station I also make 4 miles to the northward of the situation assigned it on the chart. In regard to the longitude, I differ considerably from the chart.

My observations place the end of the Eastern Reef $9' 22''$, and the end of Saugor Sand $15' 30''$ more westerly, which difference partly arises from the meridian of Fort William being erroneously said to be $88^{\circ} 28'$ E. of Greenwich, whereas, by observations taken at the Observatory, and many lunars reduced to the Flagstaff, gives $88^{\circ} 20' 57''$.

The small difference in our latitudes is not likely to produce much inconvenience to navigation; but the great difference in the longitude may perplex the navigator considerably; for, if by departing from Madras, or any other well-determined meridian, with good chronometers, he is in possession of the correct longitude, and shapes his course according to the chart for the Floating Light in $88^{\circ} 25'$ E. he will assuredly find himself $12\frac{1}{2}$ miles to the eastward of its true position, and be steering into Lacan's Channel.

The present position of the Floating Light is well chosen, as she serves both to mark the eastern channel, and also for deep ships to cross over the eastern reef by her bearings. I beg leave to suggest, that she should not be removed, or suffered to quit her station, and cruise about, being (in her proper station) a well-determined object, by which the navigator may examine his chronometer, after a long passage down the river, as well as to depart from.

The Reef Buoy bears, at present, about N.W. b W. $\frac{1}{2}$ W. from the Floating Light, distant about 5 miles, one buoy being distinctly visible from the other.

The Spit is in $21^{\circ} 18'$ N. and long. $88^{\circ} 0' 27''$ E.; it bears from the Floating Light N. 46° W. distant $15\frac{1}{4}$ miles.

The following observations were made by myself while down the river:—

Diamond Harbour Flagstaff, lat. $21^{\circ} 11' 14''$ N. and $9' 52''$ W. of Fort William Flagstaff.

Rangofulla Obelisk . $22^{\circ} 01' 00''$ N. $8' 10''$ W. Fort William Flagstaff.

Kedgere Post Office . $21\ 52\ 34$ N. $22\ 06$ W. Ditto.

Kedgere Lighthouse $21\ 60\ 18$ N. $23\ 58$ W. Ditto.

Large Tree on Middleton's Point, (place of the intended Lighthouse on Saugor,) is placed on Maxfield's chart $21^{\circ} 37' 54''$ N. $18^{\circ} 47''$ W. of Fort William Flagstaff.

Tripod on Edmonston's Island . . .	$21^{\circ} 30' 46''$ N.	$10' 40''$	} West of Fort William Flag- staff.
Tripod at New Anchorage . . .	$21 43 48$ N.	$17 57$	
Silver Tree Obelisk . . .	$20 57 52$ N.	$12 15$	

The differences of longitude were measured by four excellent chronometers, under favourable circumstances, three times between Fort William Flagstaff and Kedgerree Post Office, and five times between the latter and Floating Light Buoy. The latitudes are the results of several observations, taken at a short distance on each side of noon, and reduced thereto by Dr. Young's method. I therefore hope, that the positions which I have given to the different points will be found correct, as every care was observed to obtain the same.

(Signed)

DANIEL ROSS, Marine Surveyor General.

61. ON THE TEMPERATURE OF THE MEDITERRANEAN.

It is gratifying to find that the example of our countrymen, in furnishing us with experiments on the temperature of the ocean in various parts of the globe, is followed by our neighbours the French, with their usual readiness in promoting the interests of science. We have to record some interesting experiments of this description, recently made by M. Bérard, Lieut. De Vaisseau, commanding a surveying vessel in the Mediterranean, in the year 1831:

On the 23d Nov. while the temperature of the air was 59° , and the surface 58° , that at 750 fathoms was 55° .

The result of these experiments agrees exactly with those made by M. D'Urville, in the same sea, in 1826, who, at the depth of

200 fathoms, he found	-	-	-	-	54°
250	-	-	-	-	57
300	-	-	-	-	54
600	-	-	-	-	54

It appears then, that in the western parts of the Mediterranean, below 200 fathoms, the temperature of the water is nearly uniform at 55° Fah^t, or temperate. This is a much higher temperature than the waters of the ocean, which in northern latitudes, below 400 fathoms, seem to reach the temperature of 40° , the greatest density of sea water; while between the tropics it requires a depth of 1000 or 1200 fathoms to obtain this temperature, as shewn by Captains Sabine and Wauchope. This higher temperature of the Mediterranean is probably owing to the narrowness of the Straits of Gibraltar preventing the entrance, in large quantities, of the polar waters, the coldness of which must have great effect on the temperature of the Atlantic ocean.

DATE.	WHERE.	AIR.	SURFACE.	TEMP.	DEPTH.
26 June	Betw. Minorca and Algiers	75°	69½°	55° at 1200 Fms.	
	Same place, nearly	74	73½	55 .	600
15 Nov.	Betw. Columbretes and C. St. Martin	60	67	55 .	Not given.
23 Nov.	Not given	59	58	55 .	750

We trust that experiments of this nature will be continued ; and that every sailor, who has an opportunity, will contribute his observations towards the investigation of this interesting subject.

62. PORT EDGAR, *W. Falkland Island. Cape Eden, the South Cape of the Entrance to Port Edgar, is in Lat. 52° 0' 42" S. Long. 60° 17' 12" W. Variation at the Port, 19° 30' E. in 1830.*

H.M.S. *Eden*, commanded by Capt. W. F. W. Owen, was forced into Port Edgar by stress of weather, when on her way from Cape Horn to Rio Janeiro, in the month of March. Captain Owen describes it as a beautiful port, having many advantages for a settlement, with abundance of water, peat, good soil, and stock. The depth of water, in the middle of the entrance, is eighteen fathoms, and the general depth in the port is from ten to seventeen fathoms, excepting where the appearance of weed indicates less. The entrance of the port, between the two points, Leven and Eden, is 210 fathoms across, but 150 only clear of the weed off each point, and there is a depth of four fathoms alongside these points. No current of tide was observed during the last three days of the moon's first quarter, and a rise and fall only of three feet.

Captain Owen further observes, that a convenient port is much wanted on the southern coast of the West Falkland Island; for ships are frequently caught in furious southern gales, in rounding the Horn, and sometimes suffer much injury. Such a port as that of Edgar would not only afford such shelter, but is convenient to start from with the first of a north or north-west wind, which would carry them clear round. It would answer much better as a private speculation in the hands of an independent company, and being a free port, than as a public concern. There is no timber to be seen; but Captain Owen is of opinion that English woods would grow in the sheltered valleys and on the northern and eastern slopes of the hills.

The *Eden* was overtaken by a furious gale, between Beauchene and Porpoise Point, with thick snow and hail storms, when, not being able to weather Beauchene, nor to see around, Captain Owen was obliged to seek a port. Two days afterwards, the *Durance*, a French frigate store-ship, was placed in similar circumstances, and

just weathered Beauchene. On quitting Port Edgar, for Rio, Captain Owen obtained the following latitudes and longitudes. The land about Porpoise Point could scarcely be seen between the squalls, but it was made in

	Lat. 52° 22' 0" S.	Long. 59° 8' 0" W.
Western part of Beauchene, seen, ..	52 38 0 S.	.. 48 43 0 W.
Cape Eden, S. Cape of Port Edgar, ..	52 0 42 S.	.. 60 17 12 W.
Albemarle Island, highest rock, ..	52 13 0 S.	.. 60 25 0 W.
Cape Meredith, south extreme, ..	52 19 0 S.	.. 60 35 0 W.

The latitude of Cape Eden was obtained from twenty circum-meridian altitudes in the artificial horizon, and the longitude is the mean of two chronometers agreeing very nearly with the longitude assigned to Cape St. John, in 63° 47' W. which Captain Owen passed at noon the day before he arrived at Port Edgar. Captain Owen observes, that the delineation of the West Falkland Island appears good in the details, but has been very much distorted and misplaced in charting.

The following extract from Captain King's Directions for the Straits of Magellan, mentioned in a former number, will give the reader a correct idea of the dangerous nature of kelp, which is found at Port Edgar:—

“With day-light and clear weather, a vessel may close the shore without risk, because the water is invariably deep, and no rock is found, which is not so marked by sea-weed (or kelp, as it is generally called) that, by a good look-out at the mast-head, its situation is as clearly seen as if it were buoyed. By avoiding kelp, you are sure of having sufficient water for the largest ships on any part of this coast. At the same time, it must be remembered, that kelp grows in some places from a depth of thirty fathoms, and that on many parts of this coast, you may pass through thick beds of sea-weed without having less than six fathoms water. Still it is always a sign of danger, and, until the spot where it grows has been carefully sounded, it is not safe to pass over it in a ship. As an instance:—after sounding a large bed of this weed, in one of the Beagle's boats, and thinking it might be passed safely, a rock was found, not more than four feet in diameter, having only one fathom water over it.”

The above may be considered as a sufficient warning to seamen to *avoid kelp every where.*

63. NAVIGATION OF THE BRISTOL CHANNEL.

Notice to Mariners.

“Trinity-House, London, 23d August, 1832.

“Notice is hereby given, that in conformity with the intention expressed in the advertisement from this house, bearing date the 2d ultimo, the Lights in the Two Light Houses which have been erected by this Corporation upon the Nash Point, in the county of Glamorgan, will be exhibited on the evening of Saturday, the 1st day of September next, and thenceforth continued every night from sunset to sunrise, for the greater facility of navigation.

“Further particulars, with sailing directions, will be forthwith published.

“By Order,

“J. HERBERT, Secretary.”

64. NASH LIGHTS.

*“ Notice to Mariners.**“ Trinity-house, London, 6th September, 1832.**“ Notice is hereby given :—*

“ That the Light Towers recently erected upon the Nash Point, in the County of Glamorgan, are situated from each other, S. 58° E. and N. 58° W. distant 1000 feet; and that the Lights exhibited therein are fixed or stationary,—the Eastern, or Upper Light, burning 167 feet, and the Western, or Lower Light, 123 feet, above the level of the Sea at High Water; the brilliancy of which, respectively, will be visible,—the High Light, from S. E. b. S. to N. W. $\frac{1}{4}$ W.—and the Low Light, from S. b. E. $\frac{1}{4}$ E. to N. b. W. $\frac{1}{4}$ W. but in particular states of the atmosphere, and when not distant from them, they may be seen faintly beyond those bearings.

“ Masters of Vessels and others, sailing up the Bristol Channel in the Fairway, will make these Lights as Two separate and distinct Lights, and to prevent the possibility, under peculiar circumstances, of mistaking them for those upon St. Ann's Point, it may be well to observe, that in making the Lights upon the Nash Point from the South Westward, the High Light will be seen to the right, or Southward, of the Low Light; whereas, in making the St. Ann's Lights from the same quarter, the High Light will be observable to the Left, or Northward, of the Low Light.

“ These Lights in a Line, lead to the Southward of the Sands lying to the Westward of the Nash Point; but from the proximity of the Nash Sand to that Point, they must, of a consequence, carry near the South-eastern Part of that Sand, and at the distance of Half a Mile from the Point, not more than a Cable's Length from it.

“ Masters of Vessels are therefore cautioned, to keep the High Light open to the Southward of the Low Light, when approaching the Nash Point; and in proceeding to the Eastward, the High Light upon a Bearing of N. W. $\frac{1}{4}$ N. will lead clear of the Foul Ground off Breaksea Point, and between the One Fathom Bank, and Culver Sand, until the Flatholm Light is brought upon a Bearing, to enable them to steer to the Eastward, as heretofore.

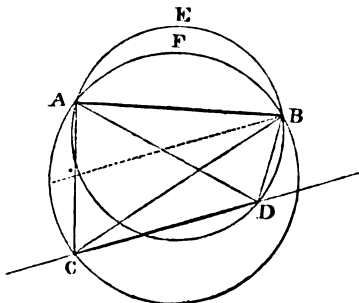
*“ By Order,**“ J. HERBERT, Secretary.”*

PROBLEM.

THE following little problem, presented to us by Lieut. O. Stanley, R.N., may interest some of our intelligent navigators, to whom it is further recommended by its peculiar simplicity and usefulness :

Sailing along a coast of which A and B were two points whose bearings and distance from each other were well known, in order to determine the positions of the ship at two points of her course, C and D, the following observations were made : At C the angle ACB was observed, the distance CD was measured by patent-log, (or otherwise,) and at D the angle subtended by AB was

again taken ; the inclination of the course CD to AB was found by taking the difference between the course steered and the bearing of B from A. Required from the above data to determine the position of the ship at C and D.



Solution.

On AB describe the circle AED, whose segment AEB shall contain an angle equal to twice the angle observed at D, and also the circle AFC, whose segment AFB shall contain an angle equal to twice the angle observed at C. Then, by Euclid, book III. p. xxi. any angle in the segment ACB subtended by the arc AB must be equal to the angle observed at C, and in the segment ADB any angle must be equal to the angle observed at D. Taking the distances CD in the compasses, and placing the points on the circumferences of the circles ADB and ACB, so that the line CD may be inclined to the line AB, as found by the difference between the course and the bearing of B from A, the points C and D will be the positions of the ship at the times the angles were taken.

Example.

$\angle ACB = 52^\circ$	distance from A to B 36 miles.
$\angle BDA = 79$	distance from C to D 34 miles.
Inclination of } 22	B bore from A East.
CD to AB }	Course steered from C to D . N. 66 E.
The arc AEB contains 158°	
AFB ——— 104	

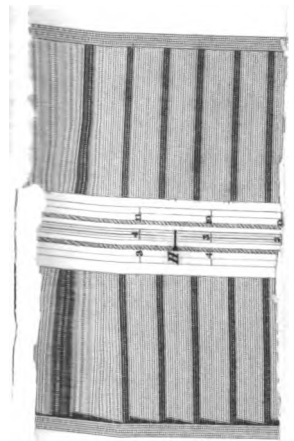
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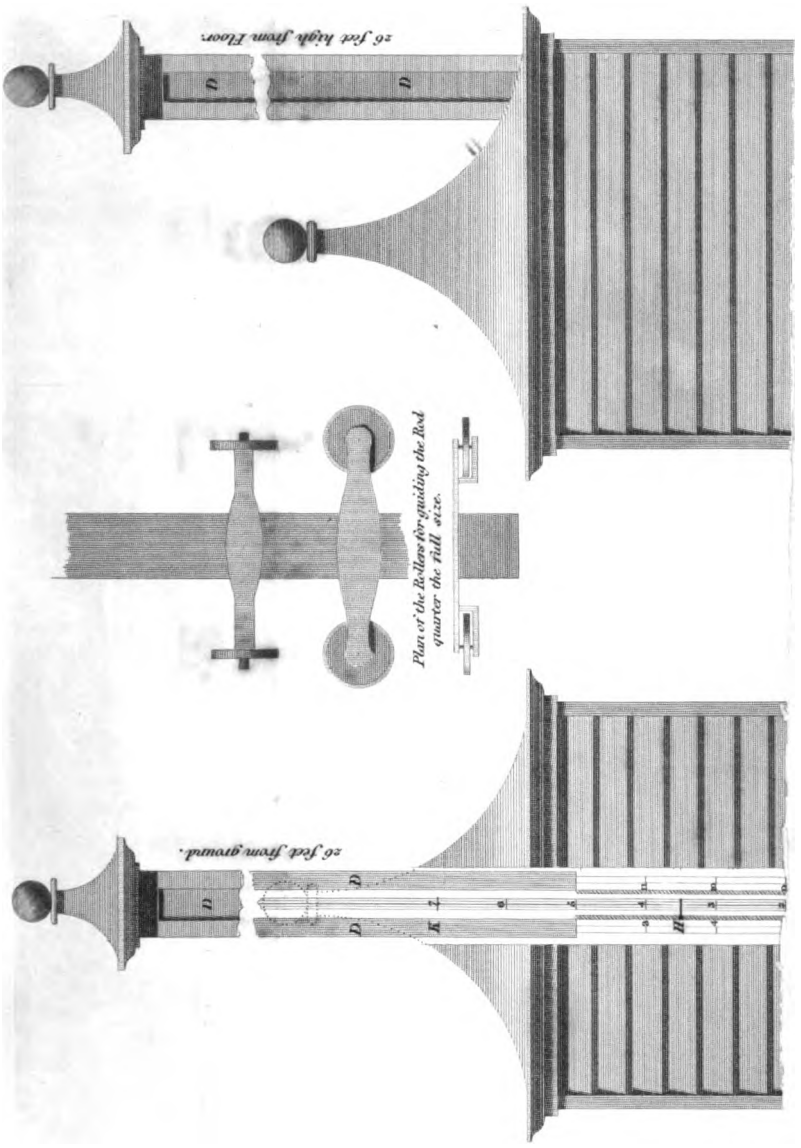
GEOGRAPHICAL COLLECTIONS.

BLACK SEA.

	Lat.	Long.		Lat.	Long.
Port of Balaklava	44° 29' N.	33° 34' E.	Cape Tchavdar	45° 0' N.	35° 52' E.
Cape Ala	44 25	33 38	Cape Opouk	45 2	36 18
Cape Saritche	44 22	33 44	Cape Takli	45 4	36 27
Cape Aitodor	44 24	34 5	Ambelaki Anchorage	45 18	36 26
Cape Aloudag	44 33	34 20	Kertche Town	45 21	36 28
Alousta Village	44 40	34 26	Yenikale Town	45 21	36 36
Soudag Fort	44 49	34 57	. . . . . Light*	45 23	36 40
Cape Meganom	44 47	35 6	Cape Panaghia	45 9	36 37
Theodocia Town	45 2	35 23	Sevastopol Great Road		
. Cape	45 1	35 26	(middle)	44 37	33 31

* May be seen 18 miles distant.





26 feet high from Floor.

*Plan of the Beams for guiding the Rock
quarter the full size.*

26 feet from ground.

FOUNDED 1827

VOYAGES AND MARITIME PAPERS.

I. THE TIDE GAUGE AT SHEERNESS.

THE drawing at the commencement of this number presents a plan of the Tide Gauge in H. M. Dock-yard at Sheerness, which, being the most perfect machine of the kind that we know of, a description of it may not prove unacceptable to our readers :—

A—Is the elevation in profile of the tide-gauge house, which stands on a small wharf at the S.W. angle of the Boat Basin, open to the sea.

B—A front view of the same, shewing as much of the machinery as can be seen from the door-way.

C—A wooden trunk, two feet square, and twenty-six feet long, reaching to the bottom of the basin; the lower end bored with holes, to admit freely the ebb and flow of the tide, without being affected by the waves.

D—A long wooden tube, six inches square, and twenty-six feet high, from the top of the wharf, to protect the gauge-rod.

E—A copper float, or buoy, fixed at the lower end of

F—A moveable gauge-rod, of light wood, one foot and a quarter square, and twenty-six feet long, guided by friction rollers at the top, and sliding inside the trunk against a fixed scale, divided to tenths of an inch; the divisions on the scale being numbered upwards, on the right-hand side of it, to shew the rise of the tide, and on the left-hand side, downwards, to shew its fall. Between the scale and the moveable rod, on each side is a groove, containing a sliding vernier bearing a catch, G and H, both of which project over the face of the rod: the catch on the right hand,

G—Is caught by a projecting nail, I, on the lower part of the rod, and is carried up during the rise of the tide: while that on the left,

H—Is brought down (by another nail, K, fixed on the upper part of the rod) as the water falls; the distance between the two nails, or I and K, being exactly fourteen feet.

When the sea is at its mean level at Sheerness, which has been found from the mean of several years' observations, (and which corresponds exactly with the mark "eighteen feet" at the entrance of the basin,) the O mark, or zero, on the rod is made to agree with seven feet on the two scales, as is represented in the plan. Now, should the tide flow to cause the nail at I to raise the catch G with its vernier, to 8 ft. on the scale; and again fall, till the nail K on the upper part of the rod bring the catch H, with its vernier, on

the left-hand side down to 8 ft. it is evident that the tide has ranged sixteen feet; which, with the time, the observer must note down, and set the verniers afresh.

Again, supposing the rising tide to carry the catch G up to 11 ft. on the right-hand scale, and the falling tide to bring H down to 5 ft. on the left-hand scale, the tide has still ranged sixteen feet; but it is plain that the rise has far exceeded the fall, and that either a strong wind or some other cause has prevented the ebb of the water. This arrangement of the indices is perfectly simple, and no mistake in reading off can be made by the commonest observer.

Yet, notwithstanding the correctness of this gauge in giving the rise and fall of tide, it requires an observer at high and low water to watch for the time. By night, no attendant is on the spot; by day, too, he is sometimes absent; and even when present, the most watchful observer often cannot tell the precise time from five to twenty minutes; as the water is at times stationary, or nearly so, for more than half an hour; moreover, sometimes it falls a few inches, and rises again. To meet these difficulties, it occurred to the civil engineer at that dock-yard, Mr. Mitchell, to cause the tide-gauge to register itself, which is done in the most ingenious, and at the same time in the simplest manner, by the application of a little machinery, as follows:

A sheet of paper is divided by lines into twenty-four equal parts, for hours, on the scale of 0.5 of an inch to an hour, and these lines are crossed at right angles by twenty-four other lines, to shew the range of the tide in feet, on the scale of 0.4 of an inch to a foot.* The paper (S) so prepared is wrapped round a cylinder or roller of wood, the circumference of which is exactly equal to the twenty-four divisions of time; the roller is then supported horizontally, and so connected with a clock, (R,) that it makes one revolution in twenty-four hours.

By means of three wheels, (LNO,) the vertical motion of the gauge-rod is communicated horizontally to a sliding bar of brass, Q, (in which is fixed a pencil, P,) causing it to traverse across the paper as the tide rises and falls parallel to the axis of the cylinder;† the pencil at the same time tracing a line indicated by the

* The principle of this tide-gauge is the same as that mentioned in Mr. Lubbock's valuable paper on "tides" in the Companion to the British Almanack for 1830; but the plan and execution are solely those of Mr. Mitchell, of the Dock-yard.

† The vertical motion of the gauge-rod is thus communicated:

L—Is a wheel twelve inches in diameter, with a grooved edge to receive M, a small cord which passes round L, in the direction of the arrows, and is attached to a spring at each end of the gauge-rod; which springs, as well as the tightening pulley, T, always keep the cord at an equal tension; as the rod rises, the cord will make the wheel revolve in the direction of the arrows: as, also, another wheel, N, of four inches diameter, on the same axis which communicates motion by an endless cord to O, a wheel of twelve inches diameter, on the axis of which is a brass pinion which causes the rack, or toothed bar, Q, with the pencil in it, to move to and fro, as the tide rises or falls, in proportion as the divisions on the paper are to each foot of the gauge-rod.

Combined motions of the clock and the gauge-rod : this line is the tidal curve, and, as far as the nature of the materials employed will admit of, is strictly correct;* entirely obviates the necessity of an observer, excepting once a fortnight, at full and change of moon, to replace the sheet of paper, and shews, on inspection, not only the rise and fall, and time of high and low water, but also every, even the most trifling irregularity which may have occurred at any time during the lunation.

Such is the plan of the self-registering tide-gauge at Sheerness; a wind-gauge will shortly be added to it, that will shew both the force and direction of the wind, and thus render it the most complete thing of the kind in Europe. May we not hope, now that such attention has been shewn to the subject of "*Tides*;" in proof of which we may allude to the able "*Paper on Tides*" read by Mr. Lubbock at the late "*Solemn Session of Science*" at Oxford; may we not hope, that ere long we may see such establishments formed at all our principal sea-ports; the diagrams and observations from which would enable us, by comparing them, to throw some light on the irregularities of the tides, irregularities which are proved by the following instance not to depend solely upon the direction of the wind: *e.g.* the greatest spring-tide yet measured at Sheerness, viz., 20 feet, and the least range of neap, 7 feet 9½ inches, both occurred with a strong S.W. wind.

The expense of an establishment similar to that at Sheerness would not be great; from 50 to £100 would complete the tide-gauge at Portsmouth, and erect one at Plymouth: and surely such a sum is not worth consideration, more especially in a country rendered by its sea-girt shores so essentially maritime as Great Britain. Indebted to the ocean, as we are, for our very existence as a nation, surely it ill becomes us to be indifferent, or inattentive, to the striking phenomena which that ocean daily presents to us, in the unceasing ebb and flow of its tides.

There are other means by which persons who, having the opportunity, might with great facility be enabled to register the phenomena of the tides, and the following is perhaps as simple and certain as any.

Let a leaden pipe be obtained, at one end of which a rose similar to that of a watering pot is to be fixed. Let this, as the outer end, be placed in the water, sufficiently deep to be always well below the level of the lowest spring tides. In placing it, care should be taken that no weeds, sand, or mud should prevent the water from passing through the rose into the pipe; and a situation where the water is deep should be preferred, so that the rose, with its face downwards, while it is below the level of the low-water of spring-tides, should be at the same time well above the bottom. The pipe

* A check is always kept by an observer, and in no case has this machine ever been at fault since it first came into use in September, 1831.

may be continued to any distance from the sea-side to the place where it is intended to make the observations in the apartment of a building, but great care must be taken that in this extent it be lower than the level of lowest springs, so that the water may always have a free passage through it. Having led the inner end of the pipe to the place desired, it should then be turned up in a vertical direction, and the end of it left open at any convenient height above the level of the highest spring-tides. A long thin rod of light wood, one end of which should be fixed in a piece of cork to answer as a float, being introduced into this end of the pipe as the cork rests on the surface of the water, the rod will always rise and fall with the motion of the tide. A scale, with two sliding verniers, one for high and the other for low water, similar to those adopted at Sheerness, to be acted upon by two catches in the rod, may then be placed close to it, or the rod may be graduated instead, into feet and inches. The exact time must be observed when the verniers reach their highest and lowest places on the scale, or that of the greatest rise and fall of the rod, and the verniers should always be displaced from the position on the scale in which they may be left by the last high and low water, in order to be ready for the next. The times of high and low water being noted, with the direction and force of the wind, the gauge will give the actual rise and fall in feet, and a series of valuable observations will be thus obtained by very simple means. Should there be any vibratory motion in the water within the pipe, so as to produce an unsteady jumping movement of the rod, it may be readily overcome in the same manner as that of the mercury in a marine barometer, by merely flattening it in any part between the lowest range of the rod and the rose at the outer end of the pipe. Any sudden motion in the water, is thus counteracted, while it has a free access to the inner end, although through a smaller channel. Several other little details will readily present themselves to an ingenious mind when the gauge is in operation.

There are many convenient situations on our coasts, where naval officers and other persons are residing, at which a tide-gauge of this nature might be placed, the expense of which would not be more than the value of the leaden pipe and the rose. And we will venture to say, that to many it would afford a most interesting amusement, while the information thus obtained by them would bring to light many secrets arising from general and local causes, and shortly enable us to explain all the laws which influence and regulate this most interesting phenomenon.

II. ON THE STOWAGE OF SHIPS.*

By the stowage of a ship, is meant the disposition of the ballast and stores. The great effect produced by different modes of stowage renders this subject one of the most important connected with naval architecture. Most of the properties of a ship depend in some manner on the situation of the centre of gravity, which is determined by the disposition of the moveable weights on board. The great difference found to exist in the qualities of the same ship at different times, arises principally from alterations in the stowage and trim. The astonishing improvements sometimes said to be made in ships by the removal of small weights, might perhaps appear questionable; but as the present state of this branch of the science of naval architecture is not sufficiently known to fix with certainty the best sailing trim, the numerous facts related on the authority of men of experience are to be received with the greater credibility; if not admitting the degree, yet as establishing the principle.

This subject has received the attention of many eminent scientific men, as well as experienced naval officers, through whose labours very valuable information has been obtained. In France, the best memoir on the stowage of ships was several times made the subject of a prize by the Royal Academy of Sciences. Daniel Bernoulli received the prize in 1757. M. L. Euler divided the prize of 1759. M. Groignard, *Constructeur des Vaisseaux du Roi, à l'Orient*, composed two memoirs, to contend for the prizes in 1759 and 1765. M. l'Abbé Bossut and M. J. A. Euler divided the prize of 1761. M. Bourdè de Villehuet obtained the prize in 1766. Many other excellent memoirs on this subject were presented at the competition for prizes.

As the situation of many of the weights in a ship are unavoidably fixed by circumstances, the advantages to be derived from an investigation of the stowage of ships can relate only to the moveable weights: the ballast, and *part* of the stores.

The *quantity* of stores and ballast in a ship is the first consideration in the stowage. The number of months for which vessels should stow provisions depends on their class and general service. No ship should, however, be incapable of stowing four months' provisions with the ordinary complement of stores.

The quantity of ballast is dependent on some of the qualities of the ship; chiefly the stability and the lateral resistance opposed to falling to leeward. An increase of ballast must always produce

* From the papers on Naval Architecture by Messrs. Morgan and Creuze. The importance of most of these papers, arising from their excellence, and the continual interest of the subjects on which they treat, has determined us to transfer some of them into our own pages: a measure in which we consider ourselves the more justified, as the above valuable work, which we regret to find has been discontinued, is now no longer to be had.—Ed.

one disadvantage, an increase of the area of direct resistance, which, *cæteris paribus*, would reduce a ship's velocity in the water. By the increase of ballast, however, judiciously stowed, the stability of a ship is frequently increased, so that she will carry so much more sail, that the moving power is increased more than the resistance, and, consequently, the velocity of the ship is increased. The question arising from this consideration is, whether the advantage produced by an increase of ballast could not be obtained by other means, without an equal attendant disadvantage? The stability could be increased in a ship to be built by an increase of breadth preserved above and below the water's surface, as far as the immersion and emersion caused by the inclination, and extending considerably forward and aft. The lateral resistance, to prevent the ship's falling to leeward, might be increased by the form below, and forward and abaft. By these means it would not be necessary to increase the quantity of ballast so much as is frequently done. This substitution of form for an increase of ballast cannot, however, probably be carried so far, but that a considerable quantity of ballast will be necessary. To what extent the quantity of ballast in ships might be reduced, might probably be ascertained by experiment.

The properties of a ship which are chiefly affected by the stowage are, the stability, rolling, pitching, holding a steady course, ardency or tendency to fly up to the wind, going about, action of the rudder, and the strain of the materials. The manner in which the stowage influences these properties will be best seen, by considering them, as far as is possible, independently of other circumstances.

1. The Stability. The disposition of the weights of a ship determines the position of its centre of gravity, which, *cæteris paribus*, increases or diminishes the stability according to its being lower or higher in the ship. This is as well known in practice as clearly demonstrable by science. The distribution of the ballast as low as possible is therefore always necessary when the stability is required to be increased. The nearer the middle of the ship, in the full parts of the body, the ballast is stowed, the lower it will be, and consequently the greater the stability. This, in almost all cases, is good stowage in relation to the stability of a ship, as the case is rare when the lading of the ship is of such great specific gravity as to render it necessary to raise the weights, by putting articles of less specific gravity under.

2. Rolling. In estimating the influence of the stowage on the rolling of a ship, it must be considered independently of the stability. The permanent inclination caused by the force of the wind depends entirely on the stability; but the vibratory action of rolling depends on other causes, some of which are unconnected with the stability. Two ships of equal stability are frequently known to possess very

different qualities in this respect: the one may roll slowly and easily, the other quickly and uneasily.

The rolling of a ship is caused by waves striking a ship's side; it is generally deepest either when a sudden change of wind takes place, and the ship, sailing free, is struck on the side by the waves, which continue to run in the direction of the wind before the change; or in a calm, when the swell of the sea gives the body of the ship a constant disposition to incline, without any inclining force of wind to keep the ship steady.

The rolling of a ship is sometimes considered analogous to the vibrations of a pendulum. Supposing some point below the ship to be the point of suspension, the length of the pendulum is measured by each particle into the square of its distance from the centre of suspension, divided by the whole body into the distance of the centre of suspension from the centre of gravity. The length of the pendulum would therefore be increased by removing the weights as far as possible from the centre of suspension. The disposition of the moveable weights in a ship according to this consideration, therefore, to increase the length of the isochronal pendulum, would be to place them as far as possible from the vertical and longitudinal plane passing through the centre of gravity. By the increase of the length of the pendulum, the time of the oscillation is increased, so that the ship's rolling would be proportionally slower.

The analogy, however, between the oscillations of a pendulum and the rolling of a ship cannot be considered strictly correct.

An easier manner of considering the effect of the weights on the rolling of a ship is, simply, by estimating their resistance to rotatory motion by their inertia. As the inertia of any weight is measured by each particle into the square of its distance from the centre of suspension, the placing these weights furthest from the centre of suspension, would most increase their resistance to motion. In a ship, the centre of suspension must be considered to coincide with the centre of gravity; so that the further the weights are removed from the centre of gravity, the greater would be the resistance to quick and uneasy rolling.

The practice of "winging the weights," as it is technically called, suggested by these principles, is found to be fully justified by experience. Care should, however, be taken that the centre of gravity of the weights may not be raised by this disposition, that the stability may not be diminished by it.

Quick and violent rolling is frequently found to be very injurious to the hull and masts of a ship. Many modes of security of the beam-ends and ship's sides have been adopted, which have been of great advantage in sustaining the strain caused by this action. Due consideration to form and *good stowage* are, however, always found greatly to reduce the violence of a ship's rolling.

3. Pitching. When a ship is so far passed over a wave that the forepart is unsupported by the water, the mean vertical direction of the water acting abaft the centre of gravity, causes the bows to pitch forward into the hollow of the waves. This motion, as far as it is influenced by the distribution of the weights, is subject to the same laws as the rolling. The further the weights are from a vertical transverse plane passing through the centre of gravity, the greater will be their inertia, and consequently the slower and deeper the pitching. These two motions are, however, to be considered very differently, as to their effect on the ship. The advantage of increasing the time and depth of the rolling has been considered in diminishing the strain of the hull and masts; but the effect of deep pitching must, on the contrary, be considered as disadvantageous, by retarding the velocity of the ship's motion, and rendering it uncomfortable to the men, by the waves breaking over it.

When a ship has passed a wave, the after-part falls into the hollow of the waves, by the mean vertical direction of the water acting on the fore side of the centre of gravity. This action, which is called scending, is affected by the disposition of the weights similarly to the pitching.

The form of the fore and after parts of a ship determines, in a great degree, these actions of pitching and scending; but as other circumstances frequently require a form not the best calculated to regulate them, it becomes the more necessary that the best disposition of the moveable weights should be made for this purpose. It is therefore necessary to bring as many of the moveable weights as possible near the middle of the ship, to reduce the depth of the pitching and scending.

4. Holding a steady course. When a body moves through any fluid, it is necessary that the lateral resistance abaft the centre of gravity should be greater than before it, to prevent the body having a continual tendency to turn round. This disposition in a ship to turn from the direct course, is technically called yawing; it increases the difficulty of steering, and retards the sailing. To prevent this bad quality in a ship, the weights should be so placed that their centre of gravity may be before the middle of the ship's length, by which the moment of the lateral resistance abaft the centre of gravity will be increased, and the moment forward diminished.

5. Ardcency. The ardcency of a ship, or its tendency to fly up into the wind, depends on the mean direction of the water, the ship sailing by a wind, and the position of the centre of effort of the sails. When a ship is fully stored and properly trimmed, the mean direction of the water passes a little before its centre of gravity. By the loss of the consumable stores, the trim may, by improper stowage, be so much altered, that a ship which at first

possessed a weatherly quality in a proper degree, may either lose it altogether, or have it altered so much as to destroy the excellency of this important quality. The stowage should therefore be so disposed, that the consumable stores should be taken in such proportions from the fore and after parts of a ship, that the good qualities at first possessed may be retained when lightened. This requires great acquaintance with the qualities of the ship to be stowed, as well as great judgment in the disposition of the ballast and stores.

6. Tacking. The resistance a ship experiences in coming about, depends on the lateral resistance of the parts before and abaft the centre of gravity. This resistance will be proportional to the squares of the lengths of the parts before and abaft the centre of gravity, which will be a minimum when the centre of gravity is in the middle of the length.

7. Action of the rudder. As the rotation of a ship must always be referred to the axes that pass through the centre of gravity, the momentum of the power of the rudder to turn a ship is proportional to the distance of the centre of the mean resistance of the rudder from the centre of gravity. This consideration would lead to the moveable weights being placed so that the centre of gravity of the ship should be before the middle of the length.

8. Strain of the materials. The inequality between the weights in different parts of a ship, and the vertical pressure of the water at the corresponding parts, causes a continual strain on the ship longitudinally, which produces an arching, sometimes technically called hogging. To equalize these two actions is the mode immediately suggested by the consideration of the cause of arching, as the best method of preventing it. Circumstances, however, prevent the establishment of this equilibrium; great weights will always necessarily be at the extremities of the ship, and the buoyancy of the corresponding parts of the body must always be very inadequate to their support, from the leanness of the fore and after parts of the body. As far, however, as circumstances will admit, the principle should be attended to, of placing the weights where the buoyancy of the body is best able to sustain them. This requires the ballast and heaviest stores to be placed in the full parts of the body, towards the midship section; reserving, however, the immediate vicinity of the main-mast free from the heaviest weights.

These are the principal considerations on the stowage of ships; and it happens, fortunately, that the modes of stowage required by a due attention to the qualities influenced by it, are generally compatible with one another. The stability requires the greatest weights as low as possible, which is agreeable to concentrating them towards the middle of the ship's length, which is required to produce the best effect on the pitching, tacking, and strain of the materials.

Holding a steady course, and the action of the rudder, require the weights to be placed so that the centre of gravity of the ship may be before the middle, but not so much as to be *practically* opposed to the consideration of its being very near to the middle, which reduces the resistance to coming about. The rolling requires the weights to be winged, which may be done by judgment and attention, without raising their centre of gravity, which would diminish the stability.

The result of these observations is, that the moveable weights in a ship should be so disposed that its centre of gravity may be low, and a little before the middle of its length; and that they should be winged as much as possible without raising their centre of gravity.

Chapman says, in his *Treatise on Ship-Building*, that the centre of gravity of a ship should be between the limits of $\frac{1}{30}$ and $\frac{1}{100}$ the length before the middle. This proportion he most probably determined by calculations made on different ships in the Swedish service. The centre of gravity of ships of 74 guns, stowed according to the English method, as to the height of its situation, is generally from about six to nine inches above the load-water line.

These principles govern the stowage of ships; but the manner and degree to which they should be carried into practice, must be ascertained by experiment. A course of experiments on the quantity of ballast, and the best disposition of weights on every class of ships, would be very valuable to the science of naval architecture. By determining the proper trim of the different classes of ships, much valuable information would be obtained for the naval architect, in making designs. Many calculations which are made by assuming the set of the ship in water, but which it is afterwards found necessary to alter, would be made with much greater certainty than at present. It is by a combination of theoretical and experimental knowledge in this subject, as in most others connected with naval architecture, that this science will arrive at excellence.

M.

III. ON THE BLACK SEA.

(Continued from page 356.)

THE early history of the Black Sea, and its shores, is involved in tradition. If we can attach any credit to the opinions of men who have directed their attention to this subject, it would appear that the Sea of Azof, at the present day so inconsiderable, and which is hourly receding, was formerly an extensive lake, of which the Caspian and Black Seas were only gulfs: the immense sinking of the lands of which the Caspian is the centre, and which extends on one side to the table-land of Thibet, and on the other towards the Oural

Chain, and seems to prolong itself to the lakes of Siberia, all this might have formed the Palus Meotides. Connected, perhaps, with the White and the Baltic Sea, these waters might again have made a perfect island of our European continent, gradually evaporating and accumulating, in the basin at present formed by the Black Sea, and arrested by the mountains of Hæmus, Taurus, Caucasus, and the Crimea, on a level much higher than that of the Mediterranean, a level, the traces of which are yet evident; an earthquake, a volcano, or any other violent cause, suddenly breaking down this dyke, the waters, it is supposed, traversed the Bosphorus, and, under the name of the Deluge of Deucalion, inundated the lower parts of Egypt, and escaped through the Straits of Gibraltar, at the same time that the Greek and Asiatic islands, which were at first submerged by the torrents, gradually reappeared. This is the theory of several authors, ancient as well as modern; a theory that we shall leave to science, as its province, to reject or maintain.

During the flourishing ages of Greece and Rome, the shores of the Black Sea were but little frequented by vessels, because the supposed dangers attending them, and the wild and predatory character of the people who inhabited them, were sufficient to deter the most enterprising navigators. In a commercial light, therefore, these regions assumed no importance until the period when the source from which Carthage and Corinth had derived so much, became dried up by the wars of the Saracens. The current of treasures then flowed back on Constantinople by two different routes, both of which terminated in the Black Sea; first, by the Indus, the Oxus, the Caspian, the Kour, and the Phocis; secondly, by the Persian Gulf, the Tigris, the Euphrates, and Trebizonde.

Here was the scene of the commercial rivalry that was so long and so fiercely carried on between the Genoese and the Venetians. The former prevailed, and profited by the indolent fatuity of the Greeks to engross the whole commerce of the East. More than one ruin on the coast still attests their former greatness, and their enterprise opened a new route to the productions of India by the Caspian and the Volga, from whence they were transported, by a short overland route, to the Don, which river they descended to the entrepot at Caffa. At length the Turks appeared, and all was obscurity. During the three centuries that Turkish ignorance enshrouded the Black Sea, almost all recollection of the navigation of the Italians was lost, and the utmost confusion in its geography prevailed in Europe. Thus, for a long time, even after the treaty of Kainardji, it was universally believed that this sea had lost nothing of its traditional dangers. A thousand romantic stories were in circulation, about the miraculous force of the currents, the number of rocks and shoals, and the barbarous cruelty of the natives. In fact, it was the very sea, of all others, from which

materials for a second book of the Voyages of Sinbad the Sailor might be gathered.

It is to France that Europe was first indebted for correct information of these regions. Antoine Baron de St. Joseph, the founder of the French commerce in these latitudes, gave the signal; and some French vessels, blockaded in 1806 by our English cruisers, have subsequently dissipated the ill-grounded fears which, till then, were entertained of the dangers of the Black Sea. Mr. Taitbout de Marigny, an officer of the French navy, has just published in Paris his description of the shores of this sea, an invaluable acquisition to nautical science, remarkable not less for the minuteness than the fidelity of its details, and which puts us in possession of a mass of valuable information on regions, many of which still exist amid the revolutions of ages.

We shall conclude our observations with an extract from this useful work, but we must not omit to mention the valuable information which we have derived from the recent visit of H.M.S. Blonde to this part of the world. The opportunity thus afforded to Captain Lyons, her commander, of contributing to the improvement of our charts and directions, was seen in all its importance; and the surveys and pencil productions of Mr. C. J. Tyers, and Mr. S. Brock, midshipmen of the Blond, under the direction of Captain Lyons, are likely to prove a valuable acquisition to the navigator.

In 1772, Mr. Bellin constructed a chart of the Black Sea, which, although very erroneous, was long the only resource of navigators, and has even been used as late as ten years ago by them. A chart of this sea was next published in Russia, in 1804, and another afterwards, that of Lieut. Boudistchev, in 1807. Arrowsmith also, in 1818, published one full of errors; and in France, where Mr. Lapie had also constructed one, Captain Gautier was commissioned to make one: this appeared in 1820, and is the best now in use, although it is by no means free from errors.

The present limits of the Black Sea extend from lat. $41^{\circ} 6' 30''$ to lat. $46^{\circ} 37'$ N. between the meridians of $27^{\circ} 25'$ and $41^{\circ} 46'$ East; its greatest width, which is from the little gulf of Penderaklia to the Dnieper, being 330 geographic miles; and its greatest length, from the gulf of Bourgas to Poti, 629 miles. In this extent there are but few rocks; and, on nearly all parts of the coast, is good anchorage.

The southern coast of the Crimea, as also that of Natolia and Circassia, being formed of high mountainous country, presents good marks for seamen. In Romelia, the only two considerable capes are Kalis-Akri, and Emona. The mouths of the Danube, and all the coast between them and the northern part of the Crimea, are dangerous, in consequence of being low, and therefore not to be seen, until closely approached.

The currents of this sea are only found to be of importance at a

short distance from the coast. That which is produced by the Don, after leaving the sea of Azof, runs to the south-west along the south coast of the Crimea, to a certain distance off the Cape Khersonese. Those from the Dnieper and Dniester which set to the south, join it, as well as the waters of the Danube, and run together towards the channel of Constantinople, which receives only a part of it. The eddy produced by it carries the rest along the coast of Asia to the east, and continues to the northward by Mongrelia and Circassia. This general course of the currents in the Black Sea is sometimes varied, in particular parts, in consequence of prevailing winds, or other local causes.

North-east winds bring clear weather in the Black Sea, and in winter time are accompanied by cold. Those from the north-west, on the contrary, as well as from the west, are attended by fogs and rain. Towards the middle of the summer, northerly winds generally prevail in this sea, and are succeeded very late in the year by those from the south, which again blow in January, February, and March. Vessels coming from the Mediterranean are frequently detained by northern winds whole months in the Dardanelles and strait of Constantinople, which they may easily pass in a couple of days with a favourable wind. The proximity of the coast of Europe and Asia renders the current so rapid there, that it is scarcely possible to get through by tacking; and this inconvenience is severely felt by merchant vessels trading to the Black Sea, but which might be surmounted, if the Turkish government would adopt the means. This same current, however, is of great utility to vessels returning from the Black Sea, should they meet with the wind from the south. The coast of Asia Minor is seldom exposed to the violence of northern winds, as they generally assume an east or west direction, according to that of the mountains. Light winds generally prevail on this coast, and the same frequently occurs on the coast of Circassia, where the wind will be from the west or south-west, while, on the south coast of Crimea, it will be from the south-east.

The winter is generally severe in the Black Sea, but more so on the northern shores of it, at which time, ships covered with ice are managed with difficulty. The months of December and January may be stated as the least dangerous of this season. The mouths of the Dnieper, the Dniester, sometimes that of the Danube, and the port of Odessa, the borders of the strait Kertche, and the sea of Azof, are more or less frozen over every winter.

IV. EXTRACTS FROM A JOURNAL:—MALTA, CORFU, PREVESA.

AFTER a passage of eighteen days from Falmouth, in one of His Majesty's steam packets, we entered the magnificent harbour of Valetta, in the island of Malta. The sight of a steam-boat was yet a novelty, and the fortifications were crowded with spectators, to

witness our arrival. Malta and its harbour are well known, but the Lazaretto, which I was destined to visit, is better known perhaps to those who have experienced that most irksome of all delays, quarantine within its walls. Accordingly, soon after our arrival, I was conducted to the quarantine harbour, and, having landed, was ushered into a large quadrangular building, enclosing a spacious court-yard, from which a flight of steps led up to a narrow gallery. This gallery, which is continued round the interior of the building, forms the general outlet to the various chambers fitted for the reception of those who are to endure the misery of quarantine. Some huge iron rings suspended by bolts fastened in the wall about ten or twelve feet above the stone floor, convey to the unfortunate occupant of each of these chambers all the horrors of a prison; and the bare whitewashed walls, boasting no other ornament, besides these, than the ill-carved names and poetic effusions of those who had preceded them, are little calculated to relieve him from the constant inclination he feels to ask of himself, what have I done to be thus incarcerated? Among other inscriptions, one in particular attracted my notice. It was the conjugation of the verb "to get out," preceded by the negative. It ran thus: "I can't get out—Thou can'st not get out—He, she, or it, can't get out," &c. This was carefully written in French, Italian, Spanish, German, Romain, and Arabic, and in most of these languages most perseveringly conjugated through moods and tenses. A wooden bedstead, an old table, and a stool which had stood the brunt of many a day's ill-treatment, were supplied for my use by the clerk of the lazaretto, a most obliging character, who welcomes the arrival of any unfortunate stranger with the secret satisfaction of profiting by him in the hire of his furniture. But, for my own part, I put great faith in the effects of a note which I had taken care to send to the superintendant of quarantine, and trusted that my acquaintance with my kind keeper would be of short duration.

My companions in the lazaretto consisted of two officers of the British regiment quartered at Corfu, and two gentlemen from Constantinople; but each of us being apprehensive of incurring the penalty of a longer confinement by coming in contact with the other, our communication was distant, though courteous, and our approach to each other no nearer than the whole space which separated the doors of our respective cells. A solitary supper was followed by a night of ill repose. At length the morning came; it was serene and beautiful: the sounds of boats passing and repassing, the distant voices of sailors busy among the shipping, and now and then the noise of a solitary footstep in the gallery, bespoke the business of the day to be already begun, as I lay on my wooden couch speculating on the time I should have to pass in this dismal abode, shut up from the world and scenes in which I longed to

take a part. The lines of Lord Byron were running in my mind,

“ Adieu, thou — quarantine
That gives me fever and the spleen.”

and I had already experienced sufficient to convince me of the justness of the noble author's observation, when a messenger knocked at the door of my cell, and brought me the welcome intelligence that my application had been successful, and that a few hours would set me at liberty. I had felt as a prisoner, and could not help looking on the intelligence as a reprieve. The thoughts of being so soon released recompensed me for a hasty breakfast; and when the happy moment arrived, I took a *distant* farewell of my companions, not without exciting their surprise at my good fortune in leaving the lazaretto so soon.

Having entered on the duties of a new appointment, the few days we stayed at Malta were devoted to them, at the expiration of which we left it for Corfu. A light breeze favoured our departure, but we had left the island only a short distance in our wake, when the hollow sound of the sails flapping against the masts gave signs of the calm which shortly ensued. A calm seldom lasts very long here; and so it was with us, for, in the course of the night, a breeze again favoured our progress, and in the morning, Cape Passaro, the south-east point of Sicily, and the snow-clad heights of Etna, were distinctly seen, lit up by the first rays of the sun. A dangerous rock was reported to lie about sixty miles west of Cape Sparta Viento, and we took the opportunity of proving its non-existence. We passed exactly over the place where it was said to be, and saw nothing of it.

A little after noon of the following day, we descried the snowy mountains of Albania, distant about seventy miles. The weather continued remarkably fine, but the wind being light and variable, our progress was slow, and the noon of another day found us passing between Fano and Salmostrata into the north channel of Corfu.

With the following bearings we passed over a shoal of six fathoms and three quarters, on which there might be less water. The centre of Merlene, E. N. E. Salmostrata north point S. E. by E. the small island to the S. E. just opening to the eastward. We shoaled the water suddenly and deepened it equally so.

Continuing our course for Corfu, we passed close to Cape St. Catherine, to the eastward of which the ruins of the ancient town of Cassiope are still visible from the sea. On the opposite shore of the Morea are also seen the remains of Batholemie, on the heights above which Ali Pacha has built a fort for the protection of a village seated in a little bay. We observed a Turkish brig of war at anchor there as we passed.

A lighthouse has been very judiciously erected on the small island of Tignoso, which is of great service to vessels frequenting the intricate passage between it and Corfu.

At nine in the evening we anchored in the bay of Corfu. Our progress as we entered the bay having been slow, gave us ample time to witness the operations going forward on the little island of Vido. The incessant reports from the blasting of rocks in all parts of the island produced a strange effect, and conveyed an idea of military proceedings in reality. These, however, were in some measure preparative for them, as we found that, in consequence of its importance, although commanded by the citadel of Corfu, it was to be fortified as strong as art could render it, and considerable progress had already been made in the foundations of the forts.

A lapse of six years has produced some improvements in Corfu, but this seems to be confined to the fortifications alone, for the streets are still narrow, and the houses in as miserable and dilapidated a condition as ever. Considering that the island is the principal of the Ionian Islands, and the key of Greece, such solicitude is well bestowed. At the time of our visit, it was garrisoned by four British regiments, the 11th, 88th, 95th, and 18th; the latter of which having just arrived from Santa Maura, was inspected on the esplanade by General Woodford in the evening after our arrival.

The palace, a large gloomy-looking building, completed about seven years ago, is any thing but ornamental to the town. It is built of the porous stone of Malta, which becomes much discoloured by exposure to the weather, and, as it easily admits water, the wood-work connected with it becomes rotten, and is constantly requiring repair. An elegant and graceful fountain ornaments the head of the esplanade, and the trees which have been planted on its southern side afford a cool and pleasant promenade.

To a person accustomed to the glare and reflected heat from the stones at Malta, Corfu affords some relief in the natural fertility and beauty of the island. The town, however, is by no means situated so as to receive the full advantage of the sea-breeze, being seated at the back of the island with high mountainous land immediately contiguous to it. The heat is therefore very great at times, and, during our visit, the theatre was closed in consequence. At Corfu may be seen Turks and Greeks familiarly mingled together, the latter displaying in their appearance a low cringing demeanour, the effects of the arbitrary oppression which has been exercised over them. Corfu is at present but ill supplied with water, and it is in contemplation* to convey this by pipes from a place called Beaitza, distant nine miles.

An excellent race course affords much amusement to the amateurs of that sport, and a few of the principal houses boast the possession of a billiard table. From the constant and regular intercourse with the continent, the manufactures of France and Italy are cheaper and more abundant here than at Malta. A communication

* This measure has since been carried into effect, and a branch pipe enables vessels to complete their water with much expedition.

is also maintained with Otranto, by which the mail is forwarded overland weekly to England. The quarantine laws impose much restraint, and are very minutely observed. The coast of Albania, the nearest part of which is about four miles from Corfu, presents an enticing appearance, but a quarantine of fifteen days, on his return, is imposed on the unlucky wight, who, in pursuit of pleasure, should happen to land there.

Taking advantage of a light favourable breeze, we shaped our course for Santa Maura, where we anchored, after a few hours' sail. In passing between the island of Paxo and the lofty shore of Albania, we were becalmed at a short distance from the little town of Parga, which is built partly on a bluff promontory projecting a short distance into the sea. The steep declivity of this promontory forms a natural defence to the town, which the dilapidated state of the citadel on its summit is ill calculated to improve.

A boat expedition, to perform a certain duty on which we were particularly employed, was resolved on the next day; and having prepared for it, we left Santa Maura, to proceed to the islands of Meganisi and Kalamos. The channel that separates Santa Maura from the Grecian shore abreast of the fort is so narrow and shoal that it may be almost forded. A narrow strait, in some parts not more than a quarter of a mile wide, which continues to the southward for three miles, is guarded by military stations on the side of Santa Maura by Anglo, and on that of the continent by Turco-Greeks. Beyond this, abreast of the castle of St. George, the channel opens considerably, and forms a magnificent basin, the shores of which on both sides are mountainous; that on the west only being cultivated, or bearing signs of a habitation, while, in the distance, to the southward, lay the islands of Kalamos and Meganisi. The Castle of St. George on the Grecian shore stands on a commanding position, but is in itself a curious specimen of fortification. An extensive battery of a circular form faces Santa Maura, and is flanked to the northward by one of a hexagonal form, and to the southward by another, which is circular. We put into a small bay on the south-west part of Kalamos, and made preparations for staying the night there. We found nothing but goats and wood-pigeons on the island, both of which were in abundance, and afforded our companions ample employment for their fowling-pieces. The island is very hilly, and a species of wild pear was seen in great plenty. On the next morning we visited Formica, lying to the south-west of Kalamos, and afterwards proceeded to Meganisi. Off the south-east point of the latter island is a small bank of red coral, which is frequented by fishermen from Naples for the purpose of obtaining the coral. These banks are not uncommon, but whether they are all open to those who may choose to come for the coral, or whether they are private property, we were unable to ascertain. While passing between

Formica and Meganisi, at one in the afternoon, we observed a remarkable appearance in the clouds, which, being the first of the kind that we had seen, left a considerable impression on us. The prismatic colours were all vividly displayed on the edge of a dense body of *cumulus* about half way between the sun and the horizon, the altitude of the former being then about sixty degrees. The violet colour was next to the sun, then the yellow, followed by the green. It extended over an arc of about twenty degrees, and the edge of the cloud on which they were seen was of a circular shape. Below it were light bodies of *cirrus* and *cirrocumulus* floating about. A calm prevailed at the time, the heat was very oppressive, and a considerable haze, which prevented distant objects from being seen, produced the same sort of floating mirage which is common with the Sirocco. The sky at the same time bore the resemblance of being swept. There was, besides this, something unnatural and foreboding in the appearance of every thing round us. One of our party had heard that these appearances generally preceded the earthquakes which are so common in this part of the world, and on the following day his prediction was confirmed by one, though of a slight description.

On our return to Santa Maura, we found that the colonial steam-vessel had arrived from Cephalonia on the day of our departure, in her route to Corfu. She waits an hour generally for despatches.

As the important service with which we were entrusted was likely to be much inconvenienced by the unsettled condition of Greece, arising from the continual wars which were going forward, it was resolved by the advice of our consul that we should make a formal visit to the Bey of Prevesa. The hostile parties consisted of Osmanlees, Albanians, and Greeks, each endeavouring to supplant the other, the Albanians being more favourable to the Greeks than the Turks. We accordingly directed our course to the entrance of the gulf of Arta, and in the afternoon of the same day anchored before the town of Prevesa, off Fort St. Salvador, which had formerly been the harem of Ali Pacha. On landing, we immediately proceeded to the residence of the Bey, accompanied by the consul and vice-consul. Passing a very neat mosque, a short walk from the consulate brought us to the palace of his Excellency. It is a building of a quadrangular form, bearing some pretensions to notice on account of its size, which surpasses that of the rest, and from differing but little in its external appearance from some of the modern edifices of England. It was built by Ali Pacha when he captured the town about thirty years ago, and is constructed of stone, or rather stones of every shape and size, the interstices between them being filled up with mud. When its external covering of whitewashed plaster was yet new, it might have been a respectable dwelling even for a Turkish Pacha; but the rude effects of war, and the lapse of years, had left ravages

which indicated a rapid decay. A large flight of stone steps, in the interstices of which, some long grass was flourishing in great luxuriance, conducted us to the grand entrance, which is not, as with our buildings, on the ground floor. Having passed this, we found ourselves in a dirty corridor, the floor of which being formed of planks, in several places completely worn through, and in others nearly so, it required some care to obtain a firm footing, and this, at best, was far from being secure. Happily, the floor was not very lofty, so that a fall through it, although it might have hurt our dignity, would not have risked our lives. We were glad to get off it at first to a wooden staircase which led us up to the grand apartments, but even this was so rickety, and worn down by age and ill-usage, that we did not consider ourselves safe until we had got into the ante-chamber. This we found filled with guards, who, seeing us preceded by the Dragoman, and that we were persons of consequence, did us the honour to rise, as we passed on to the apartment of the Bey. On entering, we found His Excellency seated, in the usual Turkish style, on an ottoman in the middle of the room, surrounded by about a dozen of his guards. The Bey rose to receive us, and returned our English bow by passing his hand over his mouth, forehead, and breast, after which we took our seats. He welcomed the arrival of our vessel, but would not agree to returning our salute, until he had received permission from the Pacha at Yanina. Our principal object was to enter the gulf of Arta; but this was not allowed, for the like reason; and we were moreover requested not to enter the harbour till the arrangements for our reception were concluded. This was provoking; but there was no avoiding it, and we had nothing to do but wait. Although by no means possessing that noble and commanding air so common to his countrymen, and generally found in a Turk of rank, the manner of Tchako (the name of the Bey) was mild, and his language complimentary and polite. Our conversation was carried on through the Consul in Romaine, the Bey being an Albanian. His dress was neither rich, nor becoming his situation; in fact, it would scarcely be called decent. He wore neither stockings nor slippers, and the turban was even laid aside; a liberty which we were informed afterwards was allowed by a recent regulation of the Porte. The principal attraction in his dress was a belt richly embroidered with gold, containing a dagger and pistols, which were also beautifully ornamented with embossed silver.

Coffee was served during our conference, which lasted about an hour; the French expedition to Algiers being the principal topic of conversation, and on which the Bey evinced much anxiety. The guards whom we found in the apartment with the Bey, and those whom we had passed in the ante-chamber, closed round us during our conversation, and expressed in their looks the curiosity and interest which we excited. They were a motley group, and in

their strange Turkish dress, with their daggers and pistols in a belt similar to their master's, seemed fit for 'deeds of darkest hue.' The room in which we had assembled was spacious. Two sides of it were occupied by an ottoman, and a third by a bench for the use of the guards. These accommodations, and that on which the Bey was seated, formed the whole furniture and ornaments of the room; the walls of which, instead of being hung with silken drapery, had lost most of their plaister, and displayed their original nakedness in many places.

In returning from the palace, from which we were ushered out with much ceremony, we had more leisure to look at the fort through which we had passed. Certainly the Turks have their own rules of fortification, but to convey a correct idea of this, all description must fail. All regularity of lines, and height of walls, is entirely unheeded, and an embrasure is placed where fancy dictates. Such things as bastions, curtains, and all the established etceteras of the art, are looked for in vain; and, instead of these, walls constructed without any plan whatever, enclose a space in which may be seen trees, shrubs, plants, and flowers; while horses, cows, pigs, and every variety of animal life, are mingled together with their rusty ordnance in endless confusion. Besides the dreadful state of war, anarchy, and misgovernment, to which this unhappy country has been continually exposed, the effects of repeated earthquakes are every where visible, and help to create that confusion in surrounding objects which the spirit of man is ever working among his fellows.

V. THE GENERAL SHIP OWNERS' SOCIETY.

THE interest of British Shipping in general is one of those pillars on which the stability and safety of our country so materially depend, that it cannot be regarded with too much solicitude. While the energies of our seamen are lulled into repose by the security of peace, and their valuable services are no longer required to meet the maritime forces of foreign countries, whither shall they look for employment? or, in the event of another war, where should they be sought for with more propriety than among that numerous class of vessels engaged in forwarding the commerce of their country? In this employment the seaman pursues his profession, gaining fresh knowledge and experience in it every day; and as it is well known that he is fit for no other, unless he has recourse to it when discharged from the service of Government, he may be considered as lost to his country; for he will assuredly be found either on shore, where he becomes unfitted for his profession, or following it in the service of a foreign state.

Although a supply of seamen to man her fleets, in case of need, may be considered as one of the principal advantages which a large mercantile navy affords to a country like Great Britain, there are

yet many others which involve her prosperity, and all of them tending to increase the necessity of watching over, and protecting the interest of her shipping. Under this impression, it is with considerable satisfaction that we find a society has been formed in London for this express purpose, entitled the 'General Ship Owners' Society;' and we shall proceed to lay before our readers some particulars relating to it.

At a general meeting of ship owners held in London on the 9th of June, 1831, it was unanimously resolved,

"That the continued and increasing depression of the British Shipping Interest rendering it more than ever essential that a General Association should be formed of the Ship Owners of the United Kingdom, for the effectual preservation, protection, and support, of their great and common interests; the recommendations of the provisional committee appointed on the 10th of April, 1828, for the formation of such an association, be forthwith adopted."

In pursuance of the foregoing resolution, the society has been organized on a basis which it is believed will ensure an efficient and constant attention to all questions in which British maritime interests are involved, and the following regulations have been instituted for its government:—

"All Ship Owners, or other persons interested in British shipping, subscribing fifty guineas, or upwards, in one sum, to be members of the society for life; those subscribing five guineas, or upwards, in one sum, together with not less than one guinea annually, and those subscribing one guinea, or upwards, annually, to be members so long as their annual subscriptions shall continue to be paid.

"The members to be entitled to vote at all ballots, according to the following scale, viz.

Members for Life; those subscribing Twenty-five Guineas, or upwards, in one sum, together with Five Guineas, or upwards, annually; and those subscribing Ten Guineas, or upwards, annually, to have Three Votes.

Members subscribing Fifteen Guineas, or upwards, in one sum, together with Three Guineas, or upwards, annually; and those subscribing Five Guineas, or upwards, annually, to have Two Votes.

Members subscribing Five Guineas, or upwards, in one sum, together with One Guinea, or upwards, annually; and those subscribing One Guinea, or upwards, annually, to have One Vote.

"The Ship Owners of the out-ports to be invited to co-operate with the society, by the formation of district associations, to be governed by their own rules. An annual contribution of £50, from any such association, to entitle the port from which it is received to the annual appointment of a respectable individual usually resident in London as a member of the general committee; an annual subscription of £100, to entitle to two; and of £200, to three members: but in no case to any greater number. Any smaller annual contribution than £50, from any association, to constitute the association from which it is received a part of the general society, and entitle it to enter into correspondence with the general committee. All such associations, whether having elected any individual as a member of the general committee, or not, to be

recommended to make such communications as from time to time may be found advisable to promote the general objects and advantage of the British shipping interest.

"The affairs of the society to be managed by a committee in London, consisting of twelve members, to be chosen by ballot at a general meeting of the society, to be annually convened in London for that special purpose, and of the individuals elected at such out-ports as may be entitled to the privilege under the preceding regulation. Such four of the said twelve members, as shall have least frequently attended during the first year, to go out at the expiration thereof, and to be replaced by an equal number by ballot, as above; the same course to be pursued at the expiration of the second year, with respect to such four of the original members as shall have least frequently attended in that year; and in all subsequent years, one-third of the said number to go out annually by rotation, and not to be eligible for re-election for twelve months. In the event of any vacancy occurring in the committee, by resignation or casualty, the individual standing next in number of votes, on the balloting list of the last previous election, to become a member of the committee for the remaining period of the time during which the party occasioning the vacancy would have continued therein.

"The chairman or deputy-chairman of any association subscribing to the funds of this society, or any member thereof who may be specially deputed to attend in London upon any occasion before the Parliament, or other important occasion, to be honorary members of the general committee during the period that they shall remain in London.

"The committee to nominate by ballot, at the first meeting after their appointment, a chairman and deputy-chairman, from their own body, for one year; the latter to become chairman for the following year; and the committee for the second, and each succeeding year, to nominate by ballot at the first meeting after their appointment, a deputy-chairman, who shall succeed in rotation to the chair. The committee to appoint a secretary and such other assistants as may be requisite for conducting the business of the society. Five members to be a quorum, except at the meetings for appointment of chairman or deputy-chairman, at which the attendance of not less than one half of the members of the committee to be indispensable.

"The funds to be under the control and management of the committee, who are annually to lay before a general meeting of the members a detailed statement of the receipts and expenditure of the society, together with a report of their proceedings during the preceding year."

The following gentlemen form the Committee for the present year:—

G. PALMER, Esq. chairman.

G. F. YOUNG, Esq. deputy-chairman, elected at North Shields.

J. W. BUCKLE, Esq.

H. BLANSHARD, Esq.

JONATHAN CHAPMAN, Esq.

JOHN CHAPMAN, Esq.

R. CARTER, Esq.

N. DOMETT, Esq.

C. ENDERBY, Esq.

T. FORREST, Esq. elected at South Shields.

R. FENWICK, Esq. elected at Sunderland.

A. GOULD, Esq.

H. NEILSON, Esq.

J. PIRIE, Esq.

J. D. POWLES, Esq.

W. TINDALL, Esq. elected at Scarborough.

N. W. SYMONDS, Esq. Secretary.

Committee-Room, 72, Cornhill.

, Such is the constitution of this valuable society, one which has large claims to the patronage of merchants and ship-owners of the United Kingdom, not only for its endeavours to maintain the character of British shipping in general, but for the anxious attention which it has devoted to various questions of deep importance to the shipping interest, that were brought under the consideration of Parliament during the last session.

To Mr. Gould, one of the gentlemen of the above committee, we are indebted for the original notes on the river St. Lawrence in our last number, to which we may again refer. They had been drawn up for the use of masters of vessels bound to the different establishments at the entrance of that river, the coasts of which are as imperfectly known as the interior of the country adjacent to them. In acknowledging our obligation for them, we would suggest, among other points worthy the attention of the committee, that of imparting correct information, which may be received in future, of a similar nature.

Such a measure cannot fail to be beneficial to navigation; and while, on our parts, we shall exert ourselves constantly in promoting the same object, we hope to acquit ourselves of a duty which we are peculiarly called on to fulfil.

VI. *Historical View of the Progress of Discovery on the more Northern Coasts of America, from the earliest period to the present Time.* By PATRICK FRASER TYTLER, Esq., F.R.S. and F.S.A. *With Descriptive Sketches of the Natural History of the North American Regions.* By JAMES WILSON, Esq., F.R.S.E. and M.W.S. *Edinburgh.* Oliver and Boyd. 1832.

THE present volume bids fair to be received with as much patronage from the public as its companion, containing the 'Narrative of Discovery and Adventure in the Polar Seas and Regions,' and forming the first volume of this valuable series of little books. Our very limited space requires us to be brief in our observations; but we will devote all we can command to an extract from it, as a specimen for our own readers. We have selected this from the account of the first journey of Capt. Sir John Franklin, R.N.; a narrative of such deep interest, even as an historical record, that it cannot fail at any future period to command attention. Our readers will remember, that, after enduring the utmost extremities of human suffering, the party of Dr. Richardson joined that of Captain Franklin at Fort Enterprize, and found them in equally as deplorable a condition as themselves. They were then in hopes of succour arriving from Mr. Back, who had been previously des-

patched for that purpose. Some time had elapsed, and none appeared ; the rest shall be told by the work before us :—

“Still the hopes and cheerfulness of Franklin did not desert him. From his knowledge of the places mostly frequented at that season by the Indians, he was sanguine as to the likelihood of their being found ; and their speedy arrival formed a constant subject of conversation. At length, on the evening of the 29th, when talking of this long-looked-for relief, and sitting round the fire, Peltier suddenly leaped up, and uttered a joyful exclamation, imagining he heard the bustle of the Indians in the adjoining room. It was not the Indians, however, but Dr. Richardson, and Hepburn, who came in, each carrying his bundle. The meeting was one of mingled joy and sorrow. Poor Hood’s absence was instantly perceived, and their saddest anticipations were confirmed, by Dr. Richardson declaring that this young officer, and Michel, were dead, and that neither Perrault nor Fontano had reached the tent, or been heard of. Such news could not fail to create despondency. All were shocked at the emaciated countenances, and hollow voices, of Dr. Richardson and his companion ; while Captain Franklin, and his fellow-sufferers, having become gradually accustomed to the dreadful effects of famine upon each other, were not aware that, to the eyes of their friends who had just arrived, the alteration upon themselves was equally melancholy. “The Doctor,” says Franklin, “particularly remarked the sepulchral tone of our voices, which he requested us to make more cheerful, if possible, not aware that his own partook of the same key.”*

“The arrival of these friends, however, was soon attended with a favourable change. Though greatly reduced, they were still in a better condition than their unfortunate companions, and it was not long till Hepburn shot a partridge. Dr. Richardson speedily tore off the feathers, and, having held it for a few minutes at the fire, divided it into six pieces. Franklin, and his companions, ravenously devoured their portions, ‘being the first morsel of flesh that any of them had tasted for thirty-one days ;’ and Dr. Richardson cheered them with the prospect that Hepburn might possibly bring in a deer in his next expedition. The counsels and example of this pious and intelligent man produced the best effects on the spirits of the party. He had brought with him his testament and prayer-book ; and, by reading portions of scripture appropriate to their situation, and encouraging them to join in prayer and thanksgiving, he led them to the only source whence, under the awful circumstances in which they were placed, they could derive hope or consolation. He taught them the necessity of exertion, whatever pain it might at first cost ; roused them to pay some attention to the cleanliness of their apartment, and insisted particularly, that, during the day, they should roll up their blankets, which they had been in the practice of leaving beside the fire where they slept. Their several tasks were now allotted to each : Hepburn and Richardson went out in search of deer ; while Franklin, being unable to walk far, remained nearer the house, and digged under the snow for skins, which, during their former happy winter residence at this station, when they killed and ate abundance of game, were thrown away as useless, but now in their putrid state formed their principal support. The cutting of fire-wood was intrusted to Peltier and Samandré ; but both were so weak and dispirited that it was generally performed by Hepburn, on his return from hunting ; as for Adam, his legs were still so severely swollen that he kept his bed ; though an operation performed by Dr. Richardson gave him some ease. In the midst of these necessary cares, all seemed for a while

* Franklin’s Journey, p. 447.

to dread approaching the subject of Hood and Michel's death ; but, at length, one evening, on the return of the Dr. from hunting, and after having despatched their usual supper of singed skin and bone-soup, they requested him to relate the particulars ; and a more afflicting, or, in some respects, a more terrific story, as it appears in his published narrative, could not well be conceived.

"He stated, that, after being left by Captain Franklin, they remained beside the fire as long as it lasted. Having no tripe de roche, they supped on an infusion of the country tea-plant, which was grateful from its warmth, but afforded no nourishment, and retired to rest. Next day proved stormy, and the snow being so deep that a fire could not be kindled with the green willows, they lay in bed, reading some religious books with which the party had been furnished before leaving England by the affectionate and pious care of a lady. 'They proved,' says Richardson, 'of incalculable benefit to us. We read portions of them to each other as we lay in bed, in addition to the morning and evening service, and found that they inspired us on each perusal with so strong a sense of the omnipresence of a beneficent God, that our situation in these wilds appeared no longer destitute ; and we conversed not only with calmness but with cheerfulness, detailing with unrestrained confidence the past events of our lives, and dwelling with hope upon our future prospects.'*

"The weather clearing up, Dr. Richardson went out in search of tripe de roche, leaving Mr. Hood in bed, and Hepburn cutting willows for a fire ; but the rocks were covered with ice and snow, and he was unsuccessful. On his return he found Michel the Iroquois, who delivered the note from Franklin.† All were surprised to see him alone ; but he stated that Belanger had separated from him, and, as he supposed, lost his way ; he himself having wandered far from the straight road. They had afterwards good reason to suspect the truth of this story, but believed it at that moment, and were rejoiced to see him produce a hare and a partridge ; an unlooked-for supply, which they received with humble thankfulness to the Giver of all good. Franklin's note advised them to advance to a little wood of pines which would afford better fuel ; and to this they removed, under the guidance of Michel, who led them straight to the spot.

"As he had declared himself so little acquainted with the country as to lose his way, it seemed strange that he should at once conduct them to the thicket. This roused their attention, and made them feel rather uneasy as to his honesty ; and various circumstances occurred to increase their suspicions. He requested the loan of a hatchet, when any other hunter would have taken only his knife. He remained abroad all day without any definite employment. He brought them some raw meat, saying it was part of the carcass of a wolf ; but which they had afterwards reason to believe was a portion of the bodies of Belanger and Perrault, whom they suspected him to have murdered. He shunned the society of Dr. Richardson and Mr. Hood, refusing to sleep in the tent, and preferring to lie alone at the fire. On going out with the purpose of remaining a whole day, he often returned abruptly, and, when questioned, gave vague answers. In a few days he began to regret that he had left Captain Franklin's party, refused to take any share in the labour of cutting wood, talked in a surly and insolent manner, and could scarcely be prevailed upon to go out and hunt at all. These symptoms of gloomy dissatisfaction increased ; he resisted all entreaties, and when Mr. Hood, who was now reduced by famine to the last extremity, remonstrated with him, he flew into a violent passion, and exclaimed, 'It is of no use hunting ; there are no animals ; you had better kill and eat

* Franklin's Journey, p. 449.

† Ibid. p. 449.

me.' He afterwards, however, consented to go out, but returned upon some frivolous pretence; and on the succeeding day that dreadful catastrophe took place, which will be best given in the words of Dr. Richardson's Journal.

"In the morning," says he, "being Sunday, October 20th, we again urged Michel to go a-hunting, that he might, if possible, leave us some provision, to-morrow being the day appointed for his quitting us; but he showed great unwillingness to go out, and lingered about the fire, under the pretence of cleaning his gun. After we had read the morning service, I went about noon to gather some tripe de roche, leaving Mr. Hood sitting before the tent, at the fireside, arguing with Michel. Hepburn was employed cutting down a tree at a small distance from the tent, being desirous of accumulating a quantity of firewood. A short time after I went out I heard the report of a gun, and about ten minutes afterwards Hepburn called to me in a voice of great alarm to come directly. When I arrived I found poor Hood lying lifeless at the fireside, a ball having apparently entered his forehead. I was at first horror-struck with the idea, that, in a fit of despondency he had hurried himself into the presence of his Almighty Judge by an act of his own hand; but the conduct of Michel soon gave rise to other thoughts, and excited suspicions which were confirmed, when, upon examining the body, I found that the shot had entered the back part of the head, and had passed out at the forehead, whilst the muzzle of the gun had been applied so close as to set fire to the nightcap behind. The gun, which was of the longest kind supplied to the Indians, could not have been placed in the position to inflict such a wound except by a second person. Upon inquiring of Michel how it happened, he replied that Mr. Hood had sent him into the tent for the short gun, and that during his absence the long gun had gone off, he did not know whether by accident or not. He held the short gun in his hand at the time he was speaking. Hepburn afterwards asserted, that, previous to the report of the gun, Mr. Hood and Michel were speaking to each other in an elevated angry tone: he added, that Mr. Hood, being seated at the fire-side, was hid from him by intervening willows; but that, on hearing the report, he looked up, and saw Michel rising up from before the tent-door, or just behind where Mr. Hood was seated, and then going into the tent. Thinking that the gun had been discharged for the purpose of cleaning it, he did not go to the fire at first; and when Michel called to him that Mr. Hood was dead, a considerable time had elapsed. * * Bickersteth's Scripture Help was lying open beside the body, as if it had fallen from his hand, and it is probable he was reading it at the instant of his death.*"

"Such was the melancholy fate of Mr. Hood, a young officer of the highest promise, who, by his conduct, had endeared himself to every member of the expedition, and whose sufferings, as they were more intense from the peculiarity of his constitution, were borne with a placid and unpretending fortitude, which it was impossible to contemplate without emotion. Both Dr. Richardson and Hepburn were convinced he had met his death from the hands of Michel; but to have accused him at that moment would have been the extremity of rashness. They were so reduced by famine that he could easily have overpowered both. His appearance showed that he possessed secret supplies of food; he was of great bodily strength, and was armed to the teeth, carrying, besides his gun, a brace of pistols, an Indian bayonet, and a knife. To have hinted a suspicion, therefore, might have been instantly fatal, and they affected to consider the death of their companion entirely accidental. As his weakness had been the chief cause of delaying their journey, they now set out for the fort,

* Franklin's Journey, vol. iv. 12mo. ed. p. 109—112.

having first paid the last rites to the dead in the only way which their situation would permit. The ground was so hard and their strength so exhausted, that to dig a grave was impossible; so they carried the body into the willow grove behind the tent, and, returning to the fire, read the funeral service, in addition to their evening devotions.

“In the morning, having singed the hair off a portion of Mr. Hood’s buffalo robe, they boiled and ate it for breakfast. Meanwhile, the conduct of Michel was so extraordinary, that had they not been already convinced of his guilt, no doubt of it could have remained. Though not a breath of their suspicions reached his ears, he repeatedly protested that he was incapable of committing such an act; he kept constantly on his guard; appeared fearful of leaving Dr. Richardson and Hepburn alone even for the shortest time; and when Hepburn spoke, he listened anxiously, though very imperfectly acquainted with the English language, fixed his eyes keenly upon him, and asked fiercely if he accused him of murder. He evinced great unwillingness to set out for the fort, and wished Dr. Richardson to proceed to the Coppermine River, where he said the woods would supply plenty of deer. On finding this advice disregarded, his conduct became more and more alarming; he muttered to himself, fell into sullen fits of abstraction, and used those convulsive and abrupt gestures often involuntarily exhibited by a person whose mind is full of some dreadful purpose. Suddenly awakening from this reverie, he again expressed his unwillingness to return to the fort, and renewed his solicitations to Dr. Richardson to repair to the southern woods, where they would find ample subsistence. On being requested to pursue his own plan alone, and leave them to continue their journey, he broke into an ungovernable fury, accused Hepburn of having told stories against him, and assumed such airs of superiority as showed that he knew they were both in his power, at the same time giving vent to expressions of hatred against the white people, calling them deadly enemies, and affirming they had killed and eaten his uncle and two of his relations.

“None of these menaces were lost upon Richardson and Hepburn; both felt they were not safe in this man’s company; and these dreadful surmises rose into certainty when he threw out hints that he would free himself from all restraint on the morrow. Being now convinced that, as he had cruelly murdered Hood, he was resolved also to sacrifice them, they ascribed his not having already done so to the circumstance of his not knowing the way to the fort, and requiring their guidance. They came to this conclusion without any communication with each other; for their fierce companion would not leave them a moment, watching them with a malignant look, and frequently muttering threats against Hepburn. Towards evening, as they approached the spot where it would be necessary to stop for the night, Michel halted to gather tripe de roche, and to their surprise bade them walk on, and he would soon overtake them. Hepburn and Dr. Richardson, now left alone together for the first time since Mr. Hood’s death, rapidly opened their minds to each other. In addition to the facts already mentioned, others came to light, which left not the slightest doubt as to Michel’s guilt; and so convinced was Hepburn of there being no safety for them but in his death, that, though a man of extreme benevolence and deep religious principle, he offered to be the instrument of it himself. ‘Had my own life,’ says Dr. Richardson, ‘alone been threatened, I would not have purchased it by such a measure; but I considered myself as intrusted also with the protection of Hepburn’s, a man who by his humane attentions and devotedness had so endeared himself to me, that I felt more anxiety for his safety than for my own.’ Animated by such feelings, and convinced that Michel’s death was necessary to self-preservation, he determined that it ought to be by his own and not by Hepburn’s hand, and on his coming up, shot him

through the head with a pistol. It appeared that he had gathered no tripe de roche, and had halted to put his gun in order, no doubt with the intention of attacking them when in the act of encamping.*

"Dr. Richardson and Hepburn now pursued their way to the fort; but fatigue, and want of food and fuel, had nearly proved fatal to them. They remarked, however, that repeatedly when death seemed inevitable, an unexpected supply of provisions again restored them; and the confidence that, when no human help was nigh, they were supported by a merciful God, inspired them with renewed hope. At last they had the delight of beholding from an eminence the smoke issuing from the chimney of the fort, and immediately after embracing those friends for whose fate they had entertained so many melancholy forebodings. So ended this interesting narrative.

"The whole party were now once more united, but under circumstances of the most distressing privation; all emaciated to such a degree as to look like living skeletons; their hands shook from weakness, so that to take an aim was impossible; and the rein-deer, partridges, and other game, flew or bounded past in joyousness and security, whilst the unhappy beings who beheld them were gaunt with hunger. The winter was closing in with all its horrors; it became daily more difficult to procure fuel, the labour of cutting and carrying the logs being so grievous, that only Dr. Richardson and Hepburn could undertake it; and to scrape the ground for bones, and to cook this miserable meal, was all Captain Franklin could accomplish. On 1st November, the Doctor obtained some tripe de roche; and as Peltier and Samandre were in the last stage of exhaustion, it was hoped a little of the soup might revive them. All was in vain; they tasted a few spoonfuls, but soon complained of a soreness in their throats, and both died in the course of the night, apparently without pain. To inter the bodies, or even carry them to the river, was a task for which the united strength of the survivors was inadequate; all they could do was to remove them into an opposite part of the house; and the living and the dead remained in awful contiguity under the same roof.

"The party was now reduced to four,—Franklin, Richardson, Hepburn, and Adam. The last had become dreadfully low since the death of his companions, and could not bear to be left alone for a moment. Their stock of bones was exhausted, and in a short time it was evident that the severity of the frost must render the gathering of the tripe de roche impossible. Under these circumstances, with death by famine approaching every hour, this little band of pious and brave men were supported by an unwavering reliance on the mercy of God. 'We read prayers,' says Captain Franklin, 'and a portion of the New Testament in the morning and evening, as had been our practice since Dr. Richardson's arrival; and I may remark, that the performance of these duties always afforded us the greatest consolation, serving to reanimate our hope in the mercy of the Omnipotent, who alone could save and deliver us.† It seemed as if it were the mysterious design of the Almighty to permit them to be reduced to the lowest depth of suffering, that his power might be magnified at the very moment when every human effort appeared utterly impotent. Hitherto Dr. Richardson and Hepburn had been the healthiest of the party, but they had over-wrought themselves, and both sunk rapidly. Owing to their loss of flesh, the hardness of the floor, from which they were only protected by a single blanket, rendered the whole surface of their bodies sore; yet the labour of turning from one side to the other was too much for them. As their strength sunk, their mental faculties partook of the weakness of their frame; and, to employ the candid and simple expressions of the excellent leader, 'an unreasonable

* Franklin's Journey, pp. 457, 458.

† Franklin's Journey, p. 161.

pettishness with each other began to manifest itself, each believing the other weaker in intellect than himself, and more in need of advice and assistance.' During this gloomy period, after the first acute pains of hunger, which lasted but for three or four days, had subsided, they generally enjoyed the refreshment of sleep, accompanied by dreams which for the most part partook of a pleasant character, and very often related to the pleasures of feasting.*

"Help, however, was now near at hand. On November 7th, Adam had passed a restless night, being disquieted by gloomy apprehensions of approaching death, which they tried in vain to dispel. He was so low in the morning as scarcely to be able to speak, and Captain Franklin remained by his bedside to cheer him as much as possible, whilst the Doctor and Hepburn went out to cut wood. They had hardly begun their labour, when they were amazed at hearing the report of a musket, and could scarcely believe that there was any one near till they heard a shout, and espied three Indians close to the house. Adam and Franklin heard the latter noise, and were fearful that some part of the house had fallen upon one of their companions,—a disaster which had been thought not unlikely. The alarm was only momentary; for Dr. Richardson came in, to communicate the joyful intelligence that relief had arrived. He and Captain Franklin immediately addressed their thanksgivings to the Throne of Mercy for this deliverance; but poor Adam was in so low a state that he could scarcely comprehend the information. When the Indians entered he attempted to rise, but immediately sank down again. But for this seasonable interposition of Providence, his existence must have terminated in a few hours, and that of the rest probably in not many days.

"The Indians who had been despatched by Mr. Back had travelled with great expedition, and brought a small supply of provisions. They imprudently presented too much food at first; and though aware of the effects which might arise from a surfeit, and warned by Dr. Richardson to eat very sparingly, the sight of the venison was irresistible; and it was devoured by them all, not excluding the Doctor himself, with an avidity that soon produced the most acute pains, which during the night deprived them of rest. Adam, whose weakness rendered him unable to feed himself, was not subjected to the same inconvenience, and, taking moderate meals, revived hourly. All now was thankfulness and cheerful activity. Boudel-kell, the youngest Indian, after an hour's rest, returned to the encampment of Akaitcho, the Dog-rib chief, carrying a note from Captain Franklin, and a request for another supply of provisions. The two others, named in their familiar manner Crooked Foot and the Rat, remained to nurse the white men. Under their care, the apartment lately so desolate, and something between a sepulchre and a lazar-house, assumed a gladdened look, which had the best effect. The dead bodies were removed, the room cleaned of its filth and fragments of pounded bones, and large cheerful fires produced a sensation of comfort to which they had long been strangers. The poor sufferers had often cast a wishful eye on a pile of dried wood near the river, but were utterly unable to carry it up the bank. When pointed out to the Indians, they fetched it home with a rapidity which astonished their feeble friends. 'They set about every thing,' says Franklin, 'with an activity which amazed us. Indeed, contrasted with our emaciated figures and extreme debility, their frames appeared to us gigantic, and their strength supernatural.'

"Under the care of the Indians, and the blessing of wholesome and regular meals, the strength of the party was so far restored, that, although still feeble, on the 16th, after having united in prayer and thanksgiving to God for their

* Franklin's Journey, pp. 465, 466.

† Franklin's Journey, p. 467.

deliverance, they left Fort Enterprise,—a spot where, as they had formerly enjoyed much comfort, if not happiness, they had latterly experienced a degree of misery scarcely to be paralleled.* The Indians treated them with unremitting kindness, gave them their own snow-shoes, and walked at their side, to be ready to lift them up when they fell. In this manner they pushed forward to the abode of Akaitcho, the Indian chief, who welcomed them with the utmost hospitality. Soon after, they received letters from their friends at Fort Providence, and the messenger also brought two trains of dogs, a package of spirits and tobacco for the Indians, and a supply of shirts and clothes for Captain Franklin and his companions. The gratification of changing their linen, which had been uninterruptedly worn ever since their departure from the seacoast, is described as conveying an intensity of comfort to which no words can do justice. From this spot their progress to Fort Providence and thence to Montreal was prosperous and easy; and thus terminated their long, fatiguing, and disastrous travels in North America, having journeyed by water and by land, including their navigation of the Polar Sea, 5550 miles."

The present volume contains a concise account of the progress of discovery in the northern parts of America, from the early time of John Cabot, down to the last voyage of Capt. Beechey in the Blossom; and, with the first volume of the series, will form one of the richest portions of the Edinburgh Cabinet Library. In addition to the natural history of these regions, it contains also an admirable and candid vindication of Hackluyt, in his assertion of John Cabot being the actual discoverer of North America. It is written by P. F. Tytler, Esq. with that dispassionate and patient investigation of the subject, which is the best calculated to discover and establish the truth.

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE, AND ART.

REPORT OF THE ASTRONOMICAL SOCIETY.

(Concluded from page 376.)

24. The Committee, considering that the table of "Refractions," the table "For reducing sexagesimal time to the decimal fraction of a day, and the reverse," and the table of the "Equation of second differences" are of a permanent nature, and that the latter, in fact, will be of little use to the navigator, should the present alteration in the arrangements be carried into effect, recommend that they be discontinued in the Nautical Almanac; and that they be transferred to another work, which they trust will be formed for the benefit and promotion of nautical astronomy, under the title of "Tables requisite to be used with the *new* Nautical Almanac." They recommend, however, the insertion of

* Franklin's Journey, p. 470.

the short table of the equation of second differences for intervals of *three* hours, mentioned in the preceding part of this Report.

25. Such are the alterations and additions which the Committee, after the most mature deliberation and discussion, have considered it advisable to recommend for adoption. They are of a nature to satisfy not only the wishes of the astronomer, but also the demands of the navigator: and the Committee are of opinion, that, with due economy, and such an arrangement of the parts amongst the several computers as will afford them constant employment, the *whole of the additional computations* may in a short time be obtained, without much, if any, additional cost to the nation. But whether a comparer, in addition to the superintendent and computers, be absolutely necessary, or whether any considerable sum could be saved in the articles of paper and printing, the Committee do not take upon themselves to decide. They have, however, no hesitation in stating it as their opinion, that very considerable savings might be effected: and they have ascertained that the cost of paper and printing the additions proposed will not exceed 360*l.*: an expense which, even if charged on the work, would be cheerfully paid, in consideration of the additional information which it contains. But by not raising the present price of the work, the inducement for reprinting it in foreign countries would be in a great measure removed: whilst its important and valuable contents would insure it a place in almost every vessel that sails on the ocean; and, by thus increasing the sale, not only repay the additional charges incurred in the computations, but probably relieve the country also from a considerable annual expense.

26. The Committee strongly recommend that any errors, discovered in the Nautical Almanac, should be printed immediately for general information, and be annexed to all the unsold copies: and that notice of the same be advertised in the London Gazette, and in some of the public papers, as early as possible.

27. Should the Lords Commissioners of the Admiralty think proper to adopt the alterations that may be ultimately agreed upon by the Council, the Committee recommend that the "Explanation," usually given at the end of the Nautical Almanac, be entirely re-composed in the plainest style possible, and new-modelled so as to correspond with the proposed arrangements; with examples taken from the body of the work: and that a "Table of Contents" be prefixed. And they take this opportunity of expressing their decided opinion of the propriety and necessity of inserting in the "Preface" to each year's almanac, an account of all the tables and authorities depended upon in every computation, with an express notice of such equations as

may be omitted, or of any corrections introduced; in order that any person may verify the calculations at his pleasure. Whether the names of the computers should be inserted, may be left to the discretion of the superintendent. The Committee, however, are of opinion, that it would tend very much to the prevention and also the detection of errors in the computations, if *printed skeleton forms*, bound up in separate volumes of a sufficient magnitude for one year's use, were provided for the several computers: which, when finished, should be signed by them respectively, and afterwards deposited with, and preserved by, the superintendent for the purpose of reference.

28. The Committee also recommend that the publication of the Nautical Almanac be always four years in advance: and they consider that it would be highly desirable that the improvements, ultimately adopted in that work in consequence of this Report, should be ordered to appear in the volume for 1834, and by no means be deferred beyond that period: the Committee being confident that, by due exertion, this may be effected. And they recommend that notice of the same should be given in the Preface to the Nautical Almanac for 1833.

29. The Committee cannot close their labours, without acknowledging the valuable hints and suggestions contained in the several letters received from those members who could not conveniently attend the meetings; and who will see, from this Report, that every subject mentioned by them has regularly come under discussion.

30. The Committee are happy also in expressing their sense of the zeal and attention of one of the Associates of this Society (Professor STRUVE,) who, during his short stay in England, devoted a considerable portion of his time to these proceedings: and from whose profound knowledge of every branch of practical and theoretical astronomy, the Committee have derived the most valuable assistance.

31. They likewise consider it their duty to notice the constant attendance of the Astronomer Royal at all their meetings; the readiness with which he afforded them every information relative to the various subjects that came under consideration; and the zeal with which he entered into all their views for improving this national work.

Table of Stars alluded to in the foregoing Report.

Stars.	Mag.	R.	Dec.	Stars.	Mag.	R.	Dec.
		h. m.				h. m.	
* γ Pegasi	2.3	0 4	+14° 14'	* α Virginis	1	13 16	-10° 16'
β Hydri	3	0 17	-78 13	* η Ursæ Maj.	2.3	13 41	+50 10
* α Cassiopeæ	3	0 31	+55 36	η Bootis	3	13 47	+19 15
β Ceti	2.3	0 35	-18 55	β Centauri	1	13 52	-59 33
* α Ursæ Min.	2.3	0 59	+88 24	* α Bootis	1	14 8	+20 4
θ^1 Ceti	3	1 16	- 9 4	α^2 Centauri	1	14 28	-60 8
α Eridani	1	1 31	-58 6	* ϵ Bootis	3	14 38	+27 48
* α Arietis	3	1 58	+22 39	* α^2 Libræ	3	14 41	+15 20
γ Ceti	3	2 34'	+ 2 31	* α Ursæ Min.	3	14 51	+74 51
* α —	2.3	2 53	+ 3 25	β Libræ	2.3	15 8	- 8 45
* α Persei	2.3	3 12	+49 15	* α Cor. Bor.	2	15 27	+27 18
η Tauri	3	3 37	+23 34	* α Serpentis	2.3	15 36	+ 6 58
γ^1 Eridani	2.3	3 50	-14 0	ζ Ursæ Min.	4	15 50	+78 19
* α Tauri	1	4 26	+16 10	β^1 Scorpii	2	15 56	-19 20
* α Aurigæ	1	5 4	+45 49	* δ Ophiuchi	3	16 5	- 3 15
* β Orionis	1	5 6	- 8 24	σ Octantis	.	16 18	-89 25
* β Tauri	2	5 16	+28 27	* α Scorpii	1	16 19	-26 3
* δ Orionis	2	5 23	- 0 26	η Draconis	3	16 22	+61 54
* α Leporis	3.4	5 25	-17 57	* α Trian. Aust.	2	16 31	-68 42
* ϵ Orionis	2.3	5 28	- 1 19	ϵ Ursæ Min.	4	17 4	+82 18
α Columbæ	2	5 33	-34 10	* α Herculis	3.4	17 7	+14 36
* α Orionis	1	5 46	+ 7 22	* β Draconis	2	17 27	+52 26
μ Gemin.	3	6 13	+22 36	* α Ophiuchi	2	17 27	+12 43
51 (Hev.) Ceph.	5	6 18	+87 17	* γ Draconis	2	17 53	+51 31
* α Argus	1	6 20	-52 36	μ^1 Sagittarii	3.4	18 4	-21 6
* α Canis Maj.	1	6 38	-16 29	* δ Ursæ Min.	3	18 27	+86 35
ϵ —	2.3	6 52	-28 45	* α Lyræ	1	18 31	+38 38
δ Gemin.	3.4	7 10	+22 17	* β —	3	18 44	+33 10
* α —	3	7 24	+32 15	* ζ Aquilæ	3	18 58	+13 37
* α Canis Min.	1.2	7 30	+ 5 39	* δ Aquilæ	3.4	19 17	+ 2 47
* β Gemin.	2	7 35	+28 26	* γ —	3	19 38	+10 12
15 Argus	3.4	8 0	-22 49	* α Aquilæ	1.2	19 42	+ 8 26
ϵ Hydræ	4	8 38	+ 7 2	* β —	3.4	19 47	+ 5 59
ι Ursæ Maj.	3.4	8 47	+48 42	* α^2 Capricorni	3	20 9	-13 4
λ Ursæ Min.	5	9 8	+88 34	α Pavonis	2	20 12	-57 16
ι Argus	2	9 13	-58 34	* α Cygni	1	20 36	+44 41
* α Hydræ	2	9 19	- 7 56	* (61) ¹ —	.	20 59	+47 56
θ Ursæ Maj.	3	9 21	+52 27	ζ —	3	21 6	+29 32
ϵ Leonis	3	9 36	+24 33	* α Cephei	3	21 15	+61 52
* α —	1	9 59	+12 48	* β Aquarii	3	21 23	- 6 19
η Argus	2	10 38	-58 48	* β Cephei	3	21 26	+69 49
* α Ursæ Maj.	1.2	10 53	+62 40	ϵ Pegasi	2.3	21 36	+ 9 6
δ Leonis	3	11 5	+21 27	* α Aquarii	3	21 57	- 1 8
δ Hyd. Crat.	3.4	11 11	-13 51	α Gruis	2	21 57	-47 47
* β Leonis	2.3	11 40	+15 31	ζ Pegasi	3	22 33	+ 9 57
* γ Ursæ Maj.	2	11 45	+54 38	* α Pisc. Aust.	1	22 48	-30 31
* β Chamæl.	5	12 9	-78 22	* α Pegasi	2	22 56	+14 18
α^2 Crucis	1	12 17	-62 9	ι Piscium	4.5	23 31	+ 4 42
β Corvi	2.3	12 25	-22 27	γ Cephei	3	23 32	+76 41
12 Can. Ven.	2.3	12 48	+39 14	* α Androm.	1	24 0	+28 9

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

The Committee alluded to in our last number, to which nautical inventions are in future to be submitted, consist of the following Officers:—Admiral the Hon. Sir Robert Stopford, G.C.B., Captain S. Chambers, R.N., and Captain E. Boxer, who are to forward their reports to the Admiralty. Thus, with the additional opinion of the Surveyor of the Navy, any invention which may be approved by this Committee, will undergo the examination of nine experienced Naval Officers, free from all prejudice, and ready to forward such as are calculated to be of real service to the country.

H.M. packet *Recruit*, is supposed to have foundered at sea, between Halifax and Bermuda. We fear that the reasons for this conclusion are but too well founded. A subscription has in consequence been opened at Portsmouth for the widow of her Purser, who is left to support six children. Should our readers be disposed to contribute any thing towards this benevolent purpose, they are requested to forward it to our publisher.*

The attention of our *nautical* readers is again requested to the first article in "Hydrography" of our present number. So important an acquisition to navigation, as that of soundings to be obtained in crossing the Atlantic, deserves immediate investigation.

The proceedings of the Experimental Squadron have concluded. The subjoined extract of a letter, with which we have been favoured, will give our readers some account of the result:—

"We have had some sailing in strong breezes, and have been carrying canvas to the utmost, under circumstances in which it was generally supposed by those on board the frigates, that the small craft would be drowned. But

* Mr. Bate, 21, Poultry.

contrary to expectations, and all predictions, the *Snake* completely beat the frigates in all weathers, even *close-hauled*, in a manner that astonished every one, and she was unanimously decided to be the best sailer of the fleet. Running before the wind, she is equal to the *Vernon*, and superior to all the rest of the squadron, not excepting even the *Castor*, whose best point of sailing is before the wind. The *Snake* leaves her far astern, and it is yet a question whether the *Snake* is not superior to the *Vernon*. A brig named the *Water Witch* was a few days with the squadron, and displayed some superiority in light winds. She had no trial in a good breeze; but on the last occasion, when trying with the squadron against a moderate head sea, she plunged so much as to carry away her bobstays. At this time the *Water Witch* was a short distance to windward of the *Snake*, when she shortened sail, and telegraphed to the Admiral that she was *satisfied with her superiority*. The fact was, that she could not stand the head-sea that was running.

"The *Snake* is very easy in all respects, but her stability is not so great as her immense breadth of beam would lead one to expect. She astonishes every one in a head-sea; she ships no water, plunges very easily, and has carried nothing away of any consequence.

"All the large ships of the squadron have sprung some spars. In point of weatherly qualities, the *Vernon* is considered next to the *Snake*, although considerably inferior to her. The *Castor* has no chance close-hauled, and the *Snake* passed in the wind's eye of her a mile an hour, and two miles an hour of the *Donegal*. The latter ship was run hull down by the *Snake* in the course of a few hours, when sailing before the wind. A rate of eight and a half knots is the fastest the *Snake* has sailed on a wind. She generally starts to leeward of all the fleet, and lays so near to the wind, that she soon passes out on the weather beam of the ships without tacking. As for the *Trinculo*, an old 18 gun brig, she stands no chance."

NAVAL INTELLIGENCE.

FLAG-OFFICERS IN COMMISSION IN COMMAND OF STATIONS, FLAG-LIEUTENANTS, AND SECRETARIES.

Stations.	Flag-Officers and Commanders.	Ship.	Date of Appt.	Flag-Lieutenants.	Secretaries.
Nore	{ Vice-Admiral Sir John Poo Beraford, Bart. K. C. B.	a	30 July 30	{ John Wash- ington. }	William Christy
Portsmouth	{ Admiral Sir Thomas Foley, G. C. B.	b	22 April 30	Charles Gayton ..	James Pinhorn
Plymouth	{ Admiral Sir Manley Dixon, K. C. B.	c	22 April 30	Matthew Foot ..	Thos. Woodman
Particular Service	{ Vice-Admiral Sir Pul- teney Malcolm, K. C. B.	d	9 May 32	Rich. Morgan (a)	Joseph Edye
Mediterranean ..	{ Vice-Admiral Hon. Sir Hen. Hotham, K. C. B. G. C. St. M. and G. ..	e	30 Mar 31	Joseph F. Stirling	John Irving
West Indies ..	{ Vice-Admiral Sir E. G. Colpoys, K. C. B.	f	20 Feb 30	{ Hon. A. W. } { Monckton. }	Edward Lawes
Newfoundland	{ Rear-Admiral Sir Tho. Baker, K. C. B.	g	9 Jan 29	John Bazeley ..	Alexander Kant
South America ..	{ Vice-Admiral Sir John Gore, K. C. B.	h	16 Dec 31	{ Wm. Chesel- } { den Brown }	Richard Haig
East Indies	{ Rear-Admiral William Parker	i	9 Sept 31	Wm. Hen. Jervis	Richard Halliday
Lisbon	{ Rear-Admiral Fred. Warren	k	5 Aug 31	Rd. L. Warren ..	John P. Lamey
Cape of Good Hope and Coast of Africa					

THE ROYAL NAVY IN COMMISSION.

•• S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

ACTEON, 26—Hon. F. W. Grey, July, at Tripoli.
 ÆTNA, S. V. 6—Com. E. Belcher, August, Gibraltar.
 AFRICAN, St. V. 1—Lt. J. Harvey, Lisbon.
 ALBAN, St. V.—Lieut. G. Rabbett, Woolwich.
 ALERT, 18—Com. J. C. Fitzgerald, Pacific.
 ALFRED, 50—Capt. R. Maunsell, 25th July, at Alexandria.
 ALLIGATOR, 28—Capt. G. R. Lambert, 22d April, Trimonalee.
 ALGERINE, 10—Com. Hon. J. F. F. De Roos, at C. Frio, July.
 ARACHNE, 28—Com. W. G. Agar, 15th Aug. Bay Funday.
 ARIADNE, 28—Capt. C. Phillips, 12th Aug. at Antigua.
 ASIA, 84—Capt. P. Richards. Flag Ship, (i) Tagus.
 ASTREA, 8—Capt. W. King, Falmouth.
 BADGER, 10—Com. G. F. Stowe, Mauritius.
 BARHAM, 50—Capt. H. Pigot, May, at Constantinople, 25th July.
 BEACON, (late METEOR,)—Com. R. Copeland, 31st July, sailed for Mediterranean.
 BEAGLE, 10—Com. R. Mair-Roy, at Rio Janeiro, 4th July.
 BELVIDERA, 42—Capt. Hon. R. S. Dundas, 21st July, at Tripoli.
 BLANCHE, 46—Capt. A. Farquhar, K. H. C. B. 10th July, Barbadoes.
 BRISK, 3—Lt. J. Thompson, Gold Coast.
 BRITANNIA, 120—Capt. P. Rainier, 9th Sept. arrived at Plymouth.
 BRITON, 46—Capt. J. D. Markland, C. B. Oporto.

CALEDONIA, 120—Capt. J. Hillyar, Tagus.
 CASTOR, 36—Capt. Rt. Hon. Lord John Hay, Portsmouth.
 CHALLENGER, 28—Capt. C. H. Freemantle, March, at Singapore. Sailed for Bengal.
 CHAMPION, 18—Com. Hon. A. Duncombe, Plymouth.
 CHARYBDIS, 3—Lieut. R. B. Crawford, Benin.
 CHILDERS, 18—Commander R. Deans, Sept. at Oporto.
 CLIO, 18—Com. J. J. Onslow, Pacific.
 COLUMBIA, St. V. 2—Lt. R. Ede, Mediterranean.
 COLUMBINE, 18—Com. O. Love, 12th Aug. Halifax.
 COMET, 18—Com. A. A. Sandilands, 22d April, at Trincomalee.
 COMET, St. V.—Sheerness.
 CONFIANCE, St. V. 2—Lieut. H. F. Belson, Falmouth.
 CONWAY, 28—Capt. Eden, 14th Sept. arrived at Portsmouth.
 CORDELIA, 10—Com. C. Hotham, June, Archipelago.
 CRUIZER, 18—Com. J. Parker, China seas.
 CURAÇOA, 26—Capt. D. Dunn, 30th March, sailed for India, from the Cape.
 CURLEW, 10—Com. H. D. Trotter, 23 June, in Simon's Bay.
 DEE, St. V.—Com. R. Oliver, Woolwich.
 DISPATCH, 18—Com. G. Daniell, Chatham.
 DONEGAL, 74—Capt. J. Dick. Flag Ship, (d) Spithead.
 DRUID, 46—Capt. G. W. Hamilton, C. B. June 20th, Pernambuco.

- DRYAD**, 42—Capt. J. Hayes, C. B. Exper. Squadron.
DUBLIN, 50—Capt. Rt. Hon. Lord J. Towns- end, April, at Valparaiso.
ECHO, St. V.—Lieut. Otway, Falmouth.
FAIRY, S. V. 10—Com. W. Hewett, surveying North Sea.
FAVOURITE, 18—Com. J. Harrison, July, Sierra Leone.
FIREBRAND, St. V.—Lieut. T. Baldock, Mediterranean.
FIREFLY, 2—Lieut. J. M'Donnel, Cuba.
FLAMER, St. V.—Lieut. E. Bastard, Wool- wich.
FLY, 10—Com. P. M'Quhae, 6th August, Santa Martha.
GANNET, 18—Com. M. H. Sweney, August, at Port Royal, Jamaica.
HARRIER, 18—Com. H. L. S. Vassal, 7th June, sailed from the Cape.
HERMES, St. V.—Lieut. R. Bastard, Sept. at Falmouth.
HORNET, 6—Lieut. F. R. Coghlan, Chatham.
HYACINTH, 18—Com. W. Oldrey, 12th Aug. Vera Cruz.
IMOGENE, 18—Capt. P. Blackwood, April, Trincomalee.
INVESTIGATOR, 16—Mr. G. Thomas, Downs.
ISIS, 50—Capt. J. Polkinghorne, Flag Ship. (k) August, Simon's Bay.
JASEUR, 18—Com. F. Harding, 25th April arrived at Mauritius.
JUPITER, Troop Ship. Mr. R. Easto, 21st July, Cork.
KANGAROO, 3—Lieut. J. Hookey, August, Nbsau.
LARNE, 18, (*late Lightning*.)—Com. W. S. Smith, Portsmouth.
LEVERET, 10—Lieut. W. F. Lapidge, 10th July, arrived at Plymouth.
LIGHTNING, St. V.—Woolwich.
MADAGASCAR, 46—Capt. E. Lyons, 1st Aug. at Malta.
MAGICIENNE, 14—Capt. J. H. Plumridge, April, at Malacca.
MAGNIFICENT, 4—Lieut. J. Paget, Port Royal.
MASTIFF, 6, S. V.—Lieut. J. Graves, Archi- pelago.
MELVILLE, 74—Capt. H. Hart, Trincomalee, Flag-ship.
MESSANGER, St. Transp.—Lieut. B. Aplin, 13th July, Portsmouth. Sailed.
METEOR, St. V.—Lieut. Symons, 20th July, Malta.
MINX, 3—Lieut. J. Simpson, Bahamas.
NAUTILUS, 10—Com. Rt. Hon. Lord G. Pau- lett, off the Douro.
NIMBLE, 5—Lieut. J. M. Potbury, August, Havana.
NIMROD, 20—Com. Lord E. Russell, Cork.
NORTH STAR—Capt. Hon. G. W. Trefusis, 18th Aug. Bay of Fundy.
OCEAN, 80—Capt. S. Chambers. Flag-ship, (a) Sheerness.
ONYX, 10—Lieut. A. B. Howe, Cork.
ORESTER, 18—Com. W. N. Glascock, Oporto.
PALLAS, 42—Capt. W. Walpole, 12th Aug. Bermuda.
PEARL, 20—Com. R. Gordon, 6th August, Honduras.
PELICAN, 18—Com. J. Gape, 5th Aug. at Corfu.
PFLORUS, 18—Com. R. Meredith, Ascen- sion.
PHILOMEL, 10—Com. W. Smith, Gibraltar.
PICKLE, 5—Lieut. E. Stopford, Bahamas.
PIKE, 12—Lt. A. Brookinc, Cork station.
PINCHER, 5—Lt. W. S. Tulloh, Bahamas.
PLUTO, St. V.—Lieut. G. Buchanan, Bight of Benin.
PYLADES, 18—Com. E. Blankley, 4th July, Bahia.
RACEHORSE, 18—Com. C. H. Williams, 21st Aug. at Halifax.
RAINBOW, 28—Capt. Sir J. Franklin, Knt. 14th June, at Patras.
RALEIGH, 18—Com. A. M. Hawkins, 21st July, Napoli di Romania.
RAPID, 10—Com. C. H. Swinburne, 30th July, Malta.
RATTLESLAKE, 28—Capt. C. Graham, Valpa- raiso, May.
RAVEN, S. V. 4—Lieut. W. Arlett, 15th Sept. sailed for Gibraltar.
RECRUIT, 10—Lt. T. Hodges, Bermuda.
REVENGE, 78—Capt. D. H. Mackay, Tagua.
ROMNEY, Troop Ship, Tagua.
ROVER, 13—Com. Sir G. Young, Bart., Chatham.
ROYALIST, 10—Lieut. R. N. Williams Oporto.
St. VINCENT, 120—Capt. H. F. Senhouse, 21st July, Napoli di Romania. Flag- ship. (e)
SAMARANG 28—Capt. C. H. Paget, 4th July, Rio.
SAN JOSEF, 110—Capt. R. Curry, Plymouth, Flag-ship. (c)
SAPPHIRE, 28—Capt. Hon. W. Wellesley, 6th Aug. Vera Cruz.
SCOUT, 18—Com. W. Hargood, Chatham.
SCYLLA, 18—Com. Hon. G. Grey, July 26, sailed from Malta.
SEAFLOWER—Lieut. Morgan, Portsmouth.
SKIPJACK, 5—Lieut. W. Shortland, Ba- hamas
SNAKE, 16—Com. W. Robertson, Cork.
SOUTHAMPTON, 52—Capt. J. M. Laws, April, Trincomalee. Flag-ship. (h)
SPARROWHAWK, 18—Com. Currie, act. 22d August, Halifax.
SPEEDWELL, 5—Lieut. W. Warren, August, Jamaica.
STAG, 46—Captain Sir T. Trowbridge, Ply- mouth.
SULPHUR, 8—Com. W. T. Dance, Van Diemen's Land.
SWAN, 10—Lieut. J. E. Lane, North Sea.
SYLVIA, 1—Lieut. T. Spark, Jersey.
TALAVERA, 74—Capt. S. Brown, Tagua.
TALBOT, 28—Capt. R. Dickinson, C. B. at Mauritius.
TRINCULO, 18—Com. R. Booth, Cork.
TWEED, 28—Com. A. Bertram, July, at Vera Cruz.
TYNE, 28—Capt. C. Hope, Plymouth.
UNDAUNTED, 46—Capt. E. Harvey, June, at Mauritius.
VERNON, 50—Capt. Sir F. Collier, Knt. Spithead.
VICTOR, 18—Com. R. Russell, 18th August, Bay of Fundy.
VICTORY, 104—Capt. H. Parker. Flag-ship (b) Portsmouth.
VIPER, 6—Lieut. H. James, off Tagua.
VOLAGE, 28—Capt. Right Hon. Lord Col- chester, July, on way to Rio.
WARSPITE, 76—Capt. C. Talbot. Flag-ship, (g) July, at Rio.

WINCHESTER, 52—Capt. Rt. Hon. Lord W. Paget, August, at St. John's. Flag-ship. (*f*)
 WOLF, 13—Com. W. Hamley, April, at Trincomalee.
 ZEBRA, 18—Com. D. De Saumarez, New Zealand.

Paid off into Ordinary.

BLOSSOM, at Sheerness.
 CONFLICT, at Sierra Leone.

CRACKER, at Portsmouth.
 CROCODILE, at Plymouth.
 DRYAD, at Portsmouth.
 LIGHTNING, at Portsmouth.
 PLUMPER, at Portsmouth.
 ROSE, at Sheerness.
 SERINGAPATAM, at Sheerness.
Commissioned.
 LARNE, at Portsmouth.
 SEAFLOWER, at Portsmouth.

Previous to the Lightning, 18, being paid off, the ship's company requested permission to present a sword and pair of epaulettes to their Commander, "in token of gratitude for his unceasing care to them, during their dangerous and laborious exertions at Cape Frio, by which their lives were preserved;" but Capt. Dickinson disapproving of the principle of inferiors expressing a public opinion of their superiors, declined the acceptance of them. Subsequently some malicious persons having aspersed the character of the crew, by writing an anonymous letter to Sir Thomas Foley, Commander-in-Chief, wherein it was set forth that they had been ill-treated by their Captain, and were discontented in their ship, they renewed their application, on the ground of shewing "that not a man amongst them felt otherwise than satisfied and happy, and had the highest respect for their Captain and Officers." Captain Dickinson was then induced to consult an officer of high rank, as well as some of his brother officers, and under these peculiar circumstances accepted them. They also presented to the First Lieutenant Thos. G. Forbes, Mr. Charles Pope, Master, and Mr. N. D. Blennerhasset, Mate, a very handsome ring each. The Lightning was paid off on the 13th, and such was the good order and state of the crew, that the Admiral Superintendent was pleased to compliment Captain Dickinson on the occasion.—*Hants Tel.*

The following Midshipmen passed their examination in navigation last week, at the Royal Naval College, viz.: Mr. C. W. Church, of H. M. steamer Colombia; Mr. T. B. Stewart, of H. M. cutter Seaflower; Messrs. W. White Pridham, and Charles Dyke Acland, both of H. M. S. Seringapatam; Mr. J. C. Barclay, late of H. M. S. Asia; Mr. N. De Courcy Blennerhasset, of H. M. S. Lightning; Mr. James Adams, late of

H. M. S. Alert; Mr. C. F. Newland, late of H. M. S. Maidstone, and Mr. Edward Meadows Noble, of H. M. S. Victory.—*Ports. Herald.*

By a letter from Trincomalee, dated the 17th of last April, brought by H. M. S. Crocodile, arrived at Plymouth, we regret to learn that two of the officers of H. M. S. Wolf have been dismissed the service, by sentence of Court Martial held on them, at the instance of their Commander, Captain Hamley, for having attempted to bring him into contempt and disrepute among the junior officers of that ship. It appears that, during the absence of the Captain at Canton, the officers obtained permission from the First Lieut. Burridge to go on shore, for the purpose of seeing Canton, where they called on the Captain. From what we can collect from the letter, it seems that they were dissatisfied at the Captain's not shewing them that attention, to which they considered they were entitled. This feeling exhibited itself, when they returned to the ship, in the Captain not being invited to dine with them on the following Sunday, as usual. This was the first indication of dissatisfaction which the Captain received, but it was followed up by the complaining party speaking of their supposed grievances in warm terms in the Midshipmen's mess, which coming to the ears of Capt. Hamley, he reported it to Sir Edward Owen, who immediately ordered a Court of Inquiry to be held. The result of this inquiry formed the grounds of a Court Martial on all the officers, except the First Lieutenant, which terminated in the dismissal from the service of the Second Lieutenant Price, and Mr. Booth, acting Surgeon. The Purser of the Wolf has exchanged out of her, and has arrived in England by the Crocodile, and the Master will shortly follow him.—*Ports. Herald.*

That intelligent individual, Mr. Thos. Waghorn, who has so ably advocated the object of steam-navigation between England and India, and who, it will be recollected, made a journey overland from London to Bombay, about two years ago, charged with despatches, and ascertained the practicability, usefulness, and safety of a regular courier establishment *via* Egypt and the Red Sea, was among the candidates who passed the requisite examination for a Lieutenancy, on Wednesday se'nnight, on board H.M.S. VICTORY. Mr. W. is the author of several pamphlets on the subject of steam-power as applicable to the purposes of navigation, and has suggested several improvements connected therewith, particularly a *mast* for steam-vessels, a model of which has been submitted to the consideration of the Board of Admiralty. His high acquirements in this particular branch of science seem likely to obtain for him the notice and patronage of their Lordships; for which he is also qualified by the completion of his full period of servitude in the Royal Navy.—*Ports. Herald.*

Lieut. Holman, the blind traveller, has arrived in this country from New South Wales, in the Strathfieldsay.—*Ports. Herald.*

The following Royal Naval Commissioned Officers are studying at the Royal Naval College:—Com. Hart, Lieuts. Gordon, Campbell, Inglis, Battersley, and Bilingsley.—*Hants Tel.*

The Officers and men of the Carrickfergus district have presented to Captain G. M. King, R.N. late Inspecting Commander, a handsome snuff-box, as a testimony of their respect and esteem.—*Hants Tel.*

The Algerine has picked up from the wreck of the Thetis, about 112,000 dollars, in addition to the 600,000 collected by the Lightning. Captain Dickinson is slowly recovering from a severe pectoral disease, contracted in his exertions to save this property; a complaint which several of his crew are suffering under. It has been decided that one-third part of the treasure which has reached the bank, shall be forthwith distributed to the underwriters and consignees; the remainder awaits the final decision of salvage to Capt. Dickinson, his officers, and ship's company.—*Hants Tel.*

H.M. steam-vessel *Dee*, Com. R. Oliver, is fitted with two engines of 100 horse power each. Her general equipment will be regarded with considerable interest by all Naval men. She is armed with 1 long 32-pounder, 2 medium 32-pounders, besides a gun of 84 cwt. This last-named gun revolves on a circle of iron let into the deck, and carries a hollow shot 10 inches in diameter and 82lbs weight. We believe the idea of employing hollow shot was invented by M. Paixhans, a French engineer, and from the experiments made in France, it was found that these shots, from their immense diameter, produced tremendous effects. Experiments of the same nature were afterwards made at Woolwich, and we cannot but regret that the results have not been published for the information of Naval and Military Officers. The *Dee* has been sent here, to undergo some improvement in the carriages and slides of her guns.—*Ports. Herald.*

The following are the armaments of the *Vernon* and *Castor* respectively:—*Vernon*, upper-deck, thirty 32-pounders, nine feet six inches; quarter-deck, twenty-four 32-pounders, eight feet six inches; fore-castle, six 32-pounders, eight feet six inches. *Castor*, upper-deck, twenty-two 32-pounders, nine feet six inches; quarter-deck, ten 18-pounders, nine feet; four 18-pounders, nine feet.—*Ports. Herald.*

The fire engine and ship-pump constructed by Mr. Hearle, engineer and iron-founder, of Devonport, has been fixed for trial in twelve ships of the Royal Navy, and after a use of nearly three years, without requiring repair, has proved, from the official reports of the Commanding Officers, to have fully answered all the purposes proposed by the invention. On Friday last, Capt. Symonds, Surveyor of the Navy, inspected the pump fitted in H. M. S. *San Josef*, in all its parts and operations, and from the high opinion expressed by him of its merits, the Lords Commissioners of the Admiralty, with Admiral Dundas, Comptroller of the Navy, accompanied by Admirals Sir Charles Paget, and Sir Frederick Maitland, went on board the *San Josef* to inspect the apparatus, immediately previous to their sailing in the Lightening steamer for Falmouth,

where Captain Curry, in the first trial, directed the water to be supplied from the pipes amidships, through the ship's bottom, and connected with the pump in the well, when the water in a few seconds was thrown over the fore-top-gallant-mast head with great force. It was then applied as three distinct and separate engines, which, in the event of fire, could at all times be instantly brought into use without the aid of a bucket, and with only four men at the pump, and one to direct each hose. Their Lordships, after minutely observing the whole of the experiments, its fitting, and arrangements, on every deck, were of opinion that it was the most effective in its operation, and simple in its construction, of any thing of the sort they had ever witnessed. It was found to be a powerful pump from the well to the cleaning of the ship, and for washing the decks: fresh water was brought from the tanks in the hold to every part of the ship, and on leaving they were pleased to express their high approval to the inventor of its usefulness and benefit in the Navy.—*Ports Herald*.

The *Andromache*, new 28-gun frigate, built at Pembroke Yard arrived at Plymouth on the 8th inst. from that port.—*Ports Herald*.

A new sloop of war, pierced for 16 guns, and to be called the *Racer*, under the construction of Captain Symonds, the present Surveyor of the Navy, has been laid down in Portsmouth Dock-yard.—*Hants Tel*.

We understand that a survey of ships

of war in the Medway is in progress and that some of the line-of-battle ships are found to be in want of considerable repair. The *Howe*, which has been launched sixteen years, has many defective parts about her. The *Monarch*, a beautiful 84-gun ship, now on the stocks at the Dock-yard, has been completed, with the exception of caulking and painting, for three years past, and orders have at length been received from the Admiralty Board to finish and launch her as soon as possible. The *Phocion* steam-vessel is also again being proceeded with. She is built in a dock there being no slip vacant at the time of laying her down. She is said to be the most beautiful vessel of the kind ever seen at that yard. She is 159 feet on the keel, and 193 feet over all. The *Courageux*, of 74 guns, built in 1804, is now in dock in order to be taken to pieces. She has been a lazaretto at Standgate Creek for some years, but has been recently replaced by the *Ramilles*. A singular circumstance is related of this ship. On her settling on the blocks in the dock, she altered the line of her form at least two feet; to use a sea phrase, she has hogged two feet. She is one of the last ships constructed on the old system of wooden knees and riders. Ships built on the modern system, introduced by Sir R. Seppings, present a contrast to the *Courageux*. In many cases, where vessels of this description have been docked, not the slightest alteration of form has been perceptible.—*Ports Herald*.

Letters from St. Petersburg of 8th Sept. states, that the house of William Brandt and Sons, of Archangel, has equipped two ships, at his own expense, commanded by officers of the Imperial Navy, to sail on a voyage of discovery to the Great Gulf of the Icy Sea, between the government of Archangel and Tobolsk, to explore the entrance of the river Jenissey. Should this undertaking succeed, the attention of our merchants will be drawn to the opening of a new, and hitherto unknown, course; nay, of a great part of the long desired N. E. passage.—*Morning Herald*.

The following interesting account of

an accident by lightning is extracted from the *Caledonian Mercury*:—"We understand from Banff, that, about ten A. M. on Wednesday, the smack *London* was struck, off St. Abb's Head, by the electric fluid, which descended the top-mast, seared the mast-head, and, darting along the iron jib-stay to the deck, knocked down several men, started some planks and bolts, filled the hold with dense sulphureous smoke, and left a coating of black bituminous matter on a large extent of surface. In its course, it came in contact with a man named Simpson, who was standing on the cross-trees, set fire to his canvass trowsers,

and absolutely tore the drawers and stockings from his limbs in tatters. Yet, although he found his legs extended, stiff, and useless, he had the presence of mind to hold on with one hand, and extinguish the flames with the other; but not before he was severely scorched. On being brought on deck, he soon recovered the use of his limbs; but it will be some time before the injured parts are healed. This man probably owed his life to the non-conducting property of the flannel shirt, drawers, and stockings, which he wore."

Steam.—The poets of former days were said to be endowed with a spirit of vaticination, and truly the gift seems to have descended on some of their successors. In the whole range of English literature, perhaps there is nothing more curious than the following prophecy in "Dr. Darwin's Botanical Garden." The poem was published in 1786, and was composed, it is well known, at least twenty years before the date of its publication:—

"Soon shall thy arm, unconquered steam, afar
Drag the slow barge, or drive the rapid car,
Or on wide-waving wings expanded bear
Thy flying chariot through the field of air.
Fair crews triumphant leaning from above,
Shall wave their flattering kerchiefs as they
move;

Or warrior bands alarm the gazing crowd,
And armies shrink beneath the shadowy cloud:
So mighty Hercules o'er many a clime
Waved his huge mace in virtue's cause sub-
lime,
Unmeasured strength with early art combined,
Awe'd, served, protected, and amazed man-
kind."

Dreadful Destruction of a Ship by Fire.—The ship *Susan*, Outerbridge, from New York, bound to New Orleans, with 2,000 casks of lime, and 200 kegs

of gunpowder, was, on the 27th of June, thrown on her beam-ends in a gale; the fore-mast was cut away, when the main and mizen-mast went by the board, and the ship righted, jury-masts were rigged, and they endeavoured to make a port. The powder was thrown over board during the gale. On the 16th of July, the ship was discovered to be on fire, from a quantity of water having passed down the companion. The long-boat was launched, and the vessel was abandoned. Two hours had elapsed from the first discovery of the fire to its breaking out on deck. The captain and crew, in all eleven persons, much exhausted from fatigue and exposure, arrived at North Island, having been three days and nights at sea in an open boat, the greater part of which time the wind blew a gale, and without food and water. Two bottles of claret, and part of a bottle of brandy, the whole of the liquids saved, were soon exhausted, and the provisions were all salted; thus, eating them only increased their thirst. Some of the crew succeeded in saving their clothes and bedding, while others were less fortunate, and saved nothing but the clothes on their backs. The inhabitants of North Island extended to them such assistance as their necessities required.—*Hants Tel.*

An order has been received from the Admiralty, to fit Shalders' patent pump, on board His Majesty's Ship *Victory*, flag-ship at this port. The *Water Witch* was originally fitted with this ingenious contrivance when she was built, and Capt. Pechel speaks in the most favourable terms of its power and capabilities.—*Portsmouth Herald.*

M. ARAGO ON COMETS.

(Continued from p. 276.)

The nebulosity of comets, when attentively considered, presents also inextricable difficulties. Without doubt, it seems easy and natural, at the first glance, to suppose comets to be simply masses of permanent gas and vapours thrown out from the nucleus by the constant influence of the solar rays; but what becomes, under this system, of the luminous concentric envelopes seen round some comets? and why should

the nucleus be eccentric, and generally so towards the Sun, though sometimes so on the opposite side?

The different magnitudes of the nebulosities of comets are worthy of deep attention, and Hevelius, rising above all system, announced at once that the diameters of the nebulosities increased in proportion as comets receded from the Sun! Pingré had also perceived this, but only dared announce it in an inci-

dental manner. Although I do not mean to justify Pingré's hesitation, yet in his day, considering, too, all the difficulties of admeasurement, &c., we cannot wonder at it; and, indeed, it was hard to believe that a gaseous mass should, in proportion as it receded from the Sun, that is, as it plunged into colder regions, be considerably expanded, instead of being condensed. But, thanks to the comet of "the short period," the observation of Hevelius is now established beyond all doubt, and is admitted amongst fully recognized scientific truths. I now give a table of the variations which the real diameter of this comet underwent in 1828:—

Dates.	Distances of the Comet from the Sun.	True Diameter of the Nebulosity in Semi-diameters of the Earth.
28th October	1.4617	79.4
7th November	1.3217	64.8
30th November	0.9668	29.8
7th December	0.8473	19.9
14th December	0.7285	11.5
24th December	0.5419	3.1

The numbers in the second column depend on the supposition that the Earth's distance from the Sun is unity. Now, from the preceding table, we see that on the 28th of October the comet was nearly three times farther from the Sun than on the 24th of December, but that, notwithstanding this, the real diameter of the nebulosity was about 25 times greater in October than in December, that is, when the distance from the Sun was trebled, the bulk was increased 25 times; or, in other words, that during the approach of the comet to the Sun, the volume of the comet was reduced to the sixteen-millionth part of its original amount; the sixteen-millionth part corresponding with its least distance from the Sun.

It would require a volume to give even an abridgment of the different systems by which astronomers have endeavoured to account for and explain the nature of the tails of comets. Some suppose the lighter particles to be swept away by the impulsion of the solar rays. This might account for tails standing out opposite to the Sun, but not for tails perpendicular to that line, nor for six tails at a time, which stand out in all direc-

tions: farther, some of the comets which appear very thin and light have no tails at all. The resistance of the ether may have something to do with these tails, but we have yet a long time to wait before any thing certain can be predicted of this problem so difficult to solve.

From what I have said of the general tenuity of comets, those who fear the effects of one of them striking the Earth will derive some consolation; and in this we shall be fortified if we study the movements of those planets near which comets sometimes pass.

The comet of 1770 is the one which has hitherto passed nearest to us, according to known observations. Its smallest distance from the earth was 602,000 leagues—that is, six times as far as the Moon. La Place has shewn, that the action of the Earth on this comet augmented the period of its revolution by two days, and the re-action of the comet ought in like manner to lengthen the time of the Earth's revolution round the Sun; but observations have proved, that in 1770 the length of our year was not increased by one second. In fact, this comet twice traversed the space in which the satellites of Jupiter move, without causing amongst them the slightest alteration.

May a comet sometimes strike on the Earth, or on some other planet?

Planets revolve round the sun, according to some primitive law, all in the same direction, and in orbits approaching to circles. Comets, on the contrary, move in very lengthened ellipses, and in every direction. In coming from their aphelia, they constantly traverse our solar system; they pass within the orbits of the planets, and often they pass even between Mercury and the Sun; therefore it is not impossible for a comet to come out and strike the Earth. Having thus admitted the possibility of a shock, let us hasten to declare that its probability is very small—a mere consideration of the immensity of space in which our globe and comets move, and the small size of these bodies, will shew this probability to be very small; but mathematics will go much further, and will give to us a numerical measure of this probability, calculated on the diameter of the comet compared with that of the

Earth. Let us suppose a comet, of which we only know that at its perihelion it would be nearer to the Sun than ourselves, and that it should have a diameter equal to one-fourth of the diameter of the Earth; then the calculation of chances shews that it is 281,000,000 to 1 that these two bodies shall not meet, or, in other words, we have 281,000,000 to 1 in our favour; but in this calculation we have supposed to the comet a diameter far too large, and if we strike out the nebosity, and calculate the chances on the nucleus only, we may multiply the foregoing chances in our favour by 10. This ought to tranquillize the most timid; and as to the comet of 1832, its orbit is known as well as is that of the Earth, and we have already shewn where these two bodies will be when the comet crosses our orbit.

Do we find, in all we know of astronomical phenomena, any reason to suppose that comets have ever fallen into the Sun, or into any of the fixed stars?

The comet of 1680, at its perihelion, was only one-sixth of the diameter of the Sun from its surface. In a region so near this immense globe, the atmosphere, which surrounds it, may have a considerable density, and may produce on bodies passing through it effects which must not be neglected. This would be true, in particular, in regard to comets whose rapidity of motion at the perihelion is considerable, and whose density is inconsiderable. The necessary effect of such an atmosphere on the comet of 1680 would be to diminish its tangential or centrifugal velocity; but if any celestial body is retarded in its movement, and thereby loses part of its centrifugal force, the centrifugal counterbalancing force at once becomes the preponderating force, and the revolving body quits its curve, to fall towards the centre of attraction. Thus, then, the comet of 1680 would pass nearer to the Sun in that year than it did at its former revolution; and as this approximation will be continued at each return to the perihelion, the comet of 1680 will end by falling into the Sun.

These reasonings rest on demonstrable mechanical principles; we must only admit, that in our present ignorance of the density and arrangement of the solar atmosphere, as well as of the orbit and

nature of the comet of 1680, it is impossible to calculate in how many ages the catastrophe I have alluded to will occur. The annals of astronomy give us no reason to suppose that any such event has taken place within the time of historical records.

Let us, however, go into the remotest times, and, considering the laws of our own planetary system, let us inquire if there be any thing in these laws which would force us to admit that a comet has, at some former period, fallen into the Sun.

All the planets circulate round the Sun from west to east, and in planes forming very small angles with each other. The satellites move round the primaries also from west to east. Moreover, wherever we have discovered a motion of rotation, both planets and satellites turn on their axis from west to east. We shall soon see how extraordinary this phenomenon is, by looking at the enumeration of all these similar motions.

Astronomers have observed motions of rotation in the Sun, in Mercury, Venus, the Earth, Mars, Jupiter, and Saturn, in the Moon, in the four satellites of Jupiter, in the Ring of Saturn, and in one of Saturn's satellites, which gives a total of 16. If to these 16 motions of rotation we add the motions of translation of these bodies, as well as of those whose rotatory motion has escaped notice, we shall find 43 motions all taking the same direction; but, by calculating the chances, it is more than four thousand million to one that this disposition of our solar system is not the effect of accident. We must therefore come at once to the conclusion that some one primitive physical law must have been impressed on the motions of these bodies at the moment of their formation.

Buffon is the first who ventured to mount to the origin of the planets and their satellites, and to account for this similarity of motion. He supposed that a comet falling obliquely on the Sun, grazed or furrowed the surface of it, and drove off a quantity of fluid matter, the lighter parts of which, driven to the greatest distance, concentrated and formed the planets Saturn and Jupiter, whose density is, in fact, not great, while the heavier portion, driven to a less distance

produced Mercury, Venus, the Earth, and Mars, and that thus the planets were in their origin so heated as to be in a state of fusion, and that they then all took regular forms, and, in cooling, assumed the appearances we now see. Some of the objections which have been urged against Buffon's system might be answered, particularly those which object to the greatness of the mass to be driven off from the Sun by the supposed shock of a comet, for the whole of the planets and their satellites do not amount to one-eight-thousandth part of the mass of the Sun.

Celestial bodies produced as Buffon supposes would be endued in their motions of translation with that similitude which we remark in our planetary system; but it would not be the same in regard to their motions of rotation, for these might have turned in a direction opposite to the motions of translation. The Earth, for example, in performing her orbit from west to east, might, in possibility, have turned on her axis from east to west. This objection may be applied also to the satellites, the direction of whose motion is not of necessity the same as the motion of translation of their primaries. Thus, the hypothesis of Buffon does not meet all the circumstances of the phenomenon. Hence it has not disclosed the secret of the formation of the planets, and hence we cannot come to the conclusion that the birth of our system was owing to a comet impinging on the Sun.

But modern discoveries have furnished other objections with which Buf-

fon could not be acquainted. For instance, every solid body, say a cannon ball, thrown into space with a velocity sufficient to make it revolve as a satellite round the Earth, must, at each revolution, pass through the point from which it first departed, allowing for the resistance of the air. This may be shown from the first principles of mechanics. If, therefore, the comet of Buffon, in striking the Sun, had driven off from it solid fragments which became afterwards our planets, this comet must at each revolution have returned to its original point of departure,—that is, must have brushed against the surface of the Sun, where it had before impinged, but every body knows that this is not the case. Moreover, Buffon adopts as a condition, that the masses driven off from the Sun were hot, and in a state of fusion; and hence the exterior of the Sun, at least, must be conceded to be in a state of liquefaction; but the most minute mode of observations have by no means confirmed this idea: on the contrary, the rapid changes in the form of the solar spots, both luminous and dark, have of late years led us to suppose with great probability that these phenomena take place in a gaseous medium, and all the experiments made at the Observatory at Paris on the polarization of light have established this incontestably; but if the exterior and illumined part of the Sun be a gas, then the system of Buffon fails in its most essential fundamental point, and is no longer sustainable.

(To be continued.)

PROMOTIONS AND APPOINTMENTS.

From the Naval Papers.

PROMOTIONS.—Com. H. F. Greville is promoted to the rank of Captain; Lieut. James Caulfield to the rank of Commander; Messrs. P. Chetwood, Thomas Maitland Rodney, W. G. Field, J. Cannon, and J. Orlebar, Midshipmen, to the rank of Lieutenant.—Lieut. William Warren, of the Speedwell schooner, is promoted to the rank of Commander, for the gallantry he displayed in capturing a pirate on the Jamaica station.

ROYAL MARINES.

PROMOTIONS.—Second Lieutenant H. G. Mitford, of the Woolwich Division, is promoted to the rank of First Lieutenant, and appointed to the Portsmouth Division, vice Chaproniere, deceased. Second Lieut. James

Buchanan, of the Portsmouth Division, is promoted to the rank of First Lieutenant, and appointed to the Woolwich Division, vice Missing, deceased. Second Lieuts. J. Lands, and G. Watson, are promoted to the rank of First Lieutenants.

ALBAN, St. V.—Mr. Pethigrew, *2d Master*;

William Cotsell, *Clerk*.

ARIADNE, 28—E. Hilditch, *Assist. Surg.*;

Mr. J. Adams, *Clerk*.

BRITANNIA, 120—J. W. Tomlinson, *Lieut.*;

A. Baird, *Assist. Surg.*; J. Gudge, *Male*.

CARNATIC, 74—G. Simpson, *Carpr.*

CASTOR, 36—The Rt. Hon. Lord John Hay, *Captain*.

COLUMBIA, St. V.—J. Morrison, *Assist. Surg.*
 CONQUESTADOR, 50—Mr. Bailey, *Carpr.*
 DEE, St. V.—R. Oliver, *Com.*
 DISPATCH, 18—John Chrichton, *Supernum-*
erary Assist. Surg.

DONEGAL, 78—H. Tracey, *Assist. Surgeon*;
 G. Blanc, *College Mate.*

EXCELLENT, 58—The Hon. G. F. Hastings,
Mate.

FAVOURITE, 18—Mr. Johnson, *Acting*
Purser.

GANNET, 18—R. Holden, *Acting Surg.*

GEORGIANA, *Convict Ship*—J. Hall, *Surg.*

HAZARD, 18—Mr. Jones, *Carpr.*

HOBNET, *Rev. Cutter*—John J. Keeling,
Lieut.

ISAIA, 50—John James Allen, *Supernumerary*
Lieut.

JASEUR, 18—John B. Driffell, *Lieut.*

LARNE, 18—W. S. Smith, *Com.*; J. R.
 Gage, *Carpr.*

LYNX, *Sloop building*—H. Crusoe, *Carpr.*

MAGNIFICENT, 4, *Recv. Ship*—E. Hankin,
Master; J. Riordan, *Surg.*; Robert Currie,
Acting Master.

MINX, 3—J. Nott, *Clerk.*

NIMROD, 20—J. F. Brown, *Gunner.*

PRINCESS CHARLOTTE, 110—L. Kent,
Carpr.

RAVEN, 4—Wm. Graham, *Supernumerary*
Assist. Surg.; C. Fielon, *Clerk.*

REVENGE, 78—G. Harris, *Midshipman.*

SATELLITE, 18—R. Smart, *Com.*; Wm. R.
 Drummond, *Lieut.*; G. K. Dabbs, *Surg.*; C.
 M' Dermott, *Purser.*

SCOUT, *Rev. Cr.*—R. Wilson, *Purser.*

SEAFLOWER, 4—J. Morgan, (a) *Lieut.*;
 Mr. Williams, *2d Master*; W. C. Lamb, *Assist.*
Surg.; J. S. Davison, and T. B. Stewart,
Mates; C. Dealy, *Clerk.*

SPEEDWELL, 5—C. Norrington, *Lieut.*

SURREY, *Convict Ship*—T. Bromley, *Surg.*
 TYNE, 28—J. L. N. Scally, *Lieut.*; H. Smith,
Lieut.

UNDAUNTED, 45—J. Underwood, *Master*;
 G. Menda, *Lieut.*

VICTORY, 104—George F. Rowe, and J.
 Wiley, *Supernumerary Assist. Surg.*

VINDICTIVE, 50—Wm. Reynolds, *Carpr.*

WINCHESTER, 52—Montague Thomas,
Lieut.; W. Anderson, *Clerk.*

WOLF, 18—J. R. Reid, *Surg.*

Lieut. Wm. Fitzmaurice, (1802,) to the
 retired Commanders' List, 1st. Nov. 1830;
 Commander Geo. Bissett, to the Coast Guard
 service; Lieut. George F. Westbrook, to the
 Coast Guard service, at Happisburgh, Nor-
 folk; Lieut. John Slaughter, to the Coast
 Guard service, in Sussex; Mr. Andrews, As-
 sistant-Surgeon, to Port Royal Hospital, vice
 Toms, invalided; Gilbert King, Esq., Surgeon,
 to the Naval Hospital at Haulbowline Island,
 Cork; Mr. Thompson, supernumerary As-
 sistant-Surgeon, to Plymouth Hospital.

Mr. J. Cleverly, late Gunner of the Philo-
 mel, and Mr. J. Carey, late Gunner of the
 Gannett, are ordered to be borne on the
 cheque at Portsmouth.

Lieut. C. Moss is appointed to the Coast
 Guard Station at Sittingbourne.

Lieut. G. S. Haswell, to the Coast Guard
 service, near Rye, Sussex.

Mr. H. D. Shea is appointed Assistant-Sur-
 geon in the Royal Navy, to do duty at Haalar
 Hospital, vice Baird, appointed to H.M.S.
 Britannia.

Mr. D. Coakley, Gunner of the Revenge,
 has been invalided home from Lisbon, and
 placed on the cheque at Portsmouth.

Mr. Masters, Carpenter, is ordered to be
 borne on the cheque.

Mr. R. Marshall is appointed Surgeon of
 the Sheerness Ordinary, vice Hall.

Mr. J. Carpenter, of the Howe, at Sheerness,
 is appointed to superintend the water-tanks at
 Plymouth.

Lieuts. Robert Forbes and John M'Greer,
 to the out-pension of Greenwich Hospital.

Lieut. Wright, of the *Hope* packet, will be
 appointed to the *Hermes* steam-vessel, on the
 arrival of the *Hope*.

ROYAL MARINES.

First Lieutenants Parker and Stevens are
 ordered to join the Plymouth Division, to be
 in readiness for embarkation.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR THE
PRESENT YEAR.

Reported to 20th August.				Reported to 20th August.			
VESSEL.	RIG.	TONS.	WHERE BUILT	VESSELS.	RIG.	TONS.	WHERE BUILT
Arcadian	Ship	285	Greenock.	Lady Jane	Schooner	83	Perth.
Audur	Sloop	65	Storeham.	Stewart	Schooner		
Betsy Heron	Brig	240	River Thames.	Lady of the			
Belclutha	Brig	192	Greenock.	Lake	Schooner	122	Mevagissey.
Canotium	Sloop	53	Conway.	Margaret	Schooner	80	Yarmouth.
Dasher	Sloop	274	Hull.	Myrtle	Schooner	84	Saltcomb.
David	Schooner	77	Anstruther.	Pallas	Schooner	115	Brixham.
Elizabeth &				Pink	Brig	162	River Thames.
Ann	Brig	109	Bristol.	Racer	Schooner	129	Lopham.
Franceska	Brig	350	Stettin.	Rattle Snake	Schooner	178	Yarmouth.
George & Ann	Brig	181	Montrose.	Richard			
Hawke	Schooner	77	River Thames.	Watson	Snow	250	Sunderland.
Jabes	Snow	224	Scarbro'.	Trune	Schooner	61	Lenth.
Johnstone	Ship	431	Liverpool.	William	Brig	281	Sunderland.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 388.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
275 Brenda	Rewcastle	Launceston	Hobart T.	Swan I. Bass, Straits	5 Mar.	0771 Of Liverpool, Cargo&cw.ad.
276 Caledonia	Hodnett	Bremen	Gaspé	49 N. 6 W.	28 Aug.	0774 Aband. cw.ad.
277 Confidence	Thompson	Liverpool	Charleston	Perran Porth	29 Aug.	0774 Master drwnd
278 Dispatch		London	Bridport	Newhaven	28 Aug.	0773 Cw.ad.pt.crgo
279 Earl Grey				Brodrick B.	20 Aug.	0771 Steamer, by fr
280 Erato	Carter	Liverpool	Leghorn	Off C. St. Vin.	— Aug.	0778 Crew saved.
281 Four Brothers		Lynn	Hull	Humber	13 Sept.	0778 Run foul of.
282 Friends		Dundalk		Off P. Lynas	5 Sept.	0776 Crew saved.
283 Glasgow	Higginson	N. Orleans	Liverpool	Florida Reef	— June	0772 Cadd. at Key W
284 Herman	Bleckert	Liverpool	Esiuora	West Hoyle	29 Aug.	0773
285 Isabella	Downing	Halifax	Jamaica	Mayaguana	2 July	0778 Crew saved.
286 Isabella	Burt			45 N. 49 W.	— Aug.	0777 Abd. passrs. ad
287 Leonidas		Halifax	Quebec	C. Breton	11 Aug.	0777 Transport, said to have been sld. fr. £350. cw. & trps. ad.
288 Lillie	Primrose	Stettin	London	North Sea	— Aug.	0772 Crew saved.
289 Osiris	Hinks	Ostend	Liverpool	Off Dymchrh	28 Aug.	0773 Crew saved.
290 Plover	Godfrey	Halifax	Jamaica	Caicos I.	27 Aug.	0772 Crew saved.
291 Providence	Evans	Aberystwth		Platter Rocks	28 Aug.	0773 Crew saved.
292 Richard and Sibella	Davis	Jamaica	London	Off Falmouth, Jamaica	31 July	0777 Doubtful.
293 St. Patrick	Russell	Ayr	Port Rush	Off Pladda	10 Aug.	0777 Crew drownd.
294 Sarah		Maryport	Belfast	Off Galloway	26 Aug.	0777 Run down.
295 Union	Davidson	Ireland	Quebec	Red I. Reef	23 Aug.	0771 St. Lawrence.
296 Vane		Sunderland	London	Corton Sound	28 Aug.	0773 Crew saved.
297 William and Mary	Gibson	Dumfries	Whitehavn.	Redness Pt.	9 Sept.	0777 Crew saved.
298 Yarmouth		Jamaica	N. Orleans	Gr Caymanes	3 July	0778 Crew saved.

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Ann		Wicklow	Bristol	Breaksea Pt.	1 Sept.	0774
Antelope		Dalhousie	Bristol	Peterhead	7 Sept.	0776 Been aground
Arabian	Boult	Bristol	Bengal	Port Galle	27 Mar.	0774 In distress.
Active	Henderson	Shields		Harwich	22 Aug.	0771 Been aground
Buenos Ayres Packet	Pratt	Newcastle	London	Blakeney	29 Aug.	0773
Delafoord	Douglas	Liverpool	Quebec	Milford	1 Sept.	0774 Leaky.
Eagle	Munro		Leith	Newport	15 Sept.	0778 To be docked.
Earl Kellie	Edwards	Bengal	London	Mauritius	10 May	0773 Damaged.
Elza Plummer		Jamaica	Liverpool	Key West	14 Sept.	0778 Aground.
Emanuel	Clause	Fred. Stadt.	London	Harwich	23 Aug.	0773 Been aground
J. Barwise	Moore	Newry	London	Publin	26 Aug.	0773 Dismasted.
Latona	Barwise			Padstow	1 Sept.	0774 Damaged.
Lewis	M'Nair	Liverpool	Newfoundland	Cork I.	1 Sept.	0774 Leaky.
Mary	Wilson	Rio Janeiro	London	Bermuda	15 July	0772 Been aground
Nymph	Agars	Thorne	London	Hull	15 Sept.	0778 Damaged.
Pearl	Emerson	London	Constn'ople	Ramsgate	24 Aug.	0772 Run foul of.
Richmond	Hutchison	Newcastle		Terschilling	16 Aug.	0772 In distress.
Sarah	Lenox	Virginia	Bremin	Ramsgate	29 Aug.	0773 Damaged.
Simeon	Sawyer	Sheerness	Hull	Whitstable	29 Aug.	0773 Dismasted.
	Rounding	Cardiff	London	Cardiff	1 Sept.	0774 Leaky.

Caution to Masters of Vessels.—Captain Walters, of the brig Mary Anne, of Bidford, has been proceeded against for the penalty of £400 by the Board

of Customs, for allowing the mate of his vessel, who was taken ill on the voyage from Youghall to Swansea, to land at the latter place.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
Abeona		Liverpool	Quebec	46 N 53 W	2 Aug.	6773
Active		Bristol	Philadelph.	38 N 67 W	6 Aug.	6773
Adelaide		Waterford		48 N 52 W	1 Aug.	6771
Africaine		London		47 N 39 W	16 Aug.	6773
Albion		Aberdeen	Halifax	47 N 39 W	27 Aug.	6776
Andromeda		London	New York	40 N 63 W	19 Aug.	6777
Ann Grant	Auld	Clyde	Miramichi	47 N 41 W	1 Aug.	6771
Belmont.		Greenock		47 N 41 W	1 Aug.	6771
Canada.		London	Quebec	45 N 33 W	25 Aug.	6776
Cicely		Liverpool	Montreal	45 N 34 W	1 Sept.	6778
City of Rochester	Riches	Liverpool	Quebec	47 N 35 W	7 Sept.	6777
Cyrus		Bristol	Quebec	46 N 45 W	6 Aug.	6771
Donegal		Liverpool		45 N 52 W	3 Aug.	6773
Drummore		Leith	Mauritius	14 N 26 W	5 Aug.	6776
Dunira	Wilson	London	Bengal	00° 85° E	21 May	6778
Dunvegan Castle	Duff	London	N. S. Wales	11 N 35 W	20 July	6774
Eleanor		Liverpool	Quebec	49 N 16 W	2 Sept.	6776
Elizabeth		Newcastle	New York	39 N 54 W	28 Aug.	6778
Emp. Alexander		Portsmouth	Quebec	48 N 49 W	30 July	6771
Frances		Sunderland		47 N 24 W	18 Aug.	6773
Gil. Henderson		Dublin		48 N 30 W	6 Aug.	6771
Harrah		Liverpool	Quebec	46 N 46 W	30 July	6776
Henry	Atkinson	Sydney	Quebec	St. Lawrence	8 Aug.	6777
Indian		Lisbon	Quebec	45 N 49 W	6 Aug.	6776
Indus		Liverpool	Miramichi	51 N 15 W	3 Sept.	6776
I. O.	Barnes			58 N 15 W	15 Aug.	6773
Ivanhoe		Liverpool	Charleston	28 N 58 W	22 Aug.	6771
Latona		London	Quebec	43 N 27 W	31 Aug.	6778
Latona		Milford	St. John's	43 N 46 W	28 Aug.	6778
Leander	Clyde	Newfoundld		48 N 35 W	3 Sept.	6777
Lion	Ferguson	Liverpool	B. Ayres	13 N 26 W	31 July	6774
Louisa		Poole		48 N 47 W	4 Aug.	6771
Manchester		Liverpool		11 N 26 W	1 Aug.	6777
Marberry Castle		Belfast	New York	40 N 59 W	17 Aug.	6776
Marengo		Liverpool	New York	38 N 37 W	20 Aug.	6777
Marquis Huntley		London	Quebec	43 N 41 W	23 Aug.	6776
Mary		London	Quebec	46 N 44 W	30 July	6771
Minstrel	Nicholson	Cork	Halifax	45 N 54 W	3 Aug.	6776
Mulgrave Castle		Belfast	New York	43 N 56 W	1 Aug.	6773
Nelly		Wigton	Quebec	45 N 56 W	1 Aug.	6776
Nelson	Weir	Bristol	Newfoundld	41 N 52 W	6 Aug.	6771
Nassau		Torbay	Newfoundld	48 N 45 W	7 Aug.	6771
Naxos		Havre	Madras	0. 0—85 E	22 April	6773
Patriot King	Pinder	Liverpool	Bengal	5 S 26 W	19 June	6777
Phoenix		Liverpool	Chaleur B.	47 N 48 W	14 Aug.	6776
Queensbury		Liverpool	Miramichi	45 N 47 W	7 Aug.	6773
Robert & Isaac	Varnum	Liverpool	Savanna	34 N 70 W	21 July	6771
Sedulous		Dartmouth	Quebec	44 N 23 W	2 Sept.	6778
Sir Charles Forbes			Singapore	22 S 32 W	25 June	6771
Sir J. Banks		London		46 N 46 W	29 July	6776
Suffolk	M'Donald	Liverpool	Quebec	45 N 43 W	31 Aug.	6777
Susanna	Morris		Miramichi	44 N 49	6 Aug.	6773
T. Coats	Christie		Bombay	32 S 53 E	16 April	6776
Walter		Liverpool	China	11 S 33 W	20 July	6777
William	Phillips	Cork	Quebec	Off C. Chat.	25 July	6773 Under jury n.
Wortley		Topsam	Quebec	46 N 48 W	9 Aug.	6776 Of Sunderland.
Venus	Martin	Havana	Trieste	37 N 44 W	7 Aug.	6773

Earl Grey Steam Boat.—Between one and two o'clock on Monday morning, Sept. 2, while the steamer Earl Grey was riding at anchor in Brodwick Bay, she was discovered to be on fire. The fire had got so complete a hold of her, and was so impetuous in its ramifications, that every effort on the part of the crew to arrest its progress was wholly unavailing; and, to prevent the vessel from being totally consumed, they sunk her in between six and seven fathom water.

There were no lives lost. It is supposed the fire originated somewhere about the boiler. The captain and crew arrived in the evening at Glasgow.—*Glasgow Courier.*

Prize-money is now payable for the undermentioned ships, for the capture of St. Domingo in 1809:—Polyphemus, Aurora, Sparrow, Griffin, Moselle, Thrush, Tweed, Lark, Pike, and Fleur de la Mer.—*Ports. Herald.*

Court of King's Bench.—Moakes v. Hartley and others.

This was an action against the owners of the Eclipse, Margate steam-packet, to recover the value of a barge belonging to the plaintiff, (a proprietor of barges on the river Thames), which had been run down by the carelessness of the defendant's servants. On the 7th of October last the plaintiff's barge, (the Jane, No. 180), was conveying ballast from the West India Docks to the Surrey Canal. The Eclipse steamer, was coming up the river at the rate of nine miles an hour. She was called to by the men on board the barge to ease her steam, but the call was unattended to, and the steamer came so

near the barge that the swell occasioned by the paddles, and the rapidity of the motion, dashed a great quantity of water into the barge, which in a few minutes was sunk, and with the greatest difficulty the lighterman and another man on board were saved. It was proved that the barge when sunk was worth £100. When raised out of the water, she was only worth £10.—She had been sold for £11. The jury found for the plaintiff—damages £80.

An iron tank, filled with water which has been kept closed for nine, teen years in the hold of the Cressy was lately opened, when the water was found perfectly sweet, and the iron of the tank in no wise worse or injured.

ADMIRALTY ORDERS.

ADMIRALTY ORDERS, &c.

MEMORANDUM.

Admiralty, 19th Sept., 1832.

In consequence of the alterations directed to be made on the 2d July last, in the Uniform Sword Belts, it has become necessary to make the following alterations in the Sword Scabbards, which are in future to be worn of the patterns here described.

Admirals.—The top and middle lockets of the scabbard to have loops and rings; the former to be four, and the latter three inches and a half long; and both to be ornamented

with embossed oak leaves in bas-relief; the chape to be seven inches and a half long, and to have oak leaves as above round the upper part, and to have a honeysuckle ornament at the end.

Captains.—The same as Admirals; but the chape is to be only six inches and a half long, and both lockets and chape to be ornamented with fluted threads of scrolls, instead of oak leaves.

Commanders, Lieutenants, &c.—To be the same as that now worn, with the addition of a middle locket, and rings.

By Command of their Lordships,
JOHN BARROW.

PRIZES ADVERTISED FOR PAYMENT IN THE LONDON GAZETTES, AS REPORTED TO THE TREASURER OF THE NAVY, DOWN TO THE 18TH OF SEPT. 1832.

SHIP.	PRIZE.	WHEN		AGENTS.	
		CAPTURED.	ADVERTISED	NAME.	RESIDENCE.
Acasta	L'Esperance	30 April, 98	2 July, 32	Maude	G. Geo. St. Westmr.
Athol	Dos Amigos	10 Nov. 30	Ditto	Ditto	Ditto
Ditto	Emilia	9 Dec. 29	Ditto	Ditto	Ditto
Conflict	Ninfa	24 Nov. 30	17 Aug. 32	W. Holmes	3, Lyon's-Inn.
Ceres	L'Esperance	30 April, 98	2 July, 32	Maude	G. Geo. St. Westmr.
Dryad*	El Potosi	19 July, 31	On arrival	SrFOmmanney	Norfolk St. Strand.
Ditto†	Regido and Rapido	10 Sept. 31	26 Sept. 32	Ditto	Ditto.
Hyperion	Spirits	Jan. Mar. 30	10 Aug. 32	C. Clementson	8, Adelphi Terrace.
Iphigenia	Vecua	15 April, 32	17 July, 32	W.H.B. Barwie	1, New Boswell Crt
Lightning	Flora	3 July, 15	7 Sept. 32	Cooke&Halford	41, NorfolkSt Strand
Myramidon	Vecua	15 April, 22	12 July, 32	T. Stillwell	22, Arundell St. Strd.
Sybille	Tentadera	1 Nov. 29	19 July, 32	F. Goode	15, SurreySt. Strand.
Ditto	N. S. de Guia	7 Jan. 30	Ditto	Ditto	Ditto
Spider	William	9 April, 13	8 Oct. 32	SrFOmmanney	32, NorfolkSt Strand
Topaze	Coins, & £300†	8 July, 10	7 Sept. 32	Cooke&Halford	41, NorfolkSt Strand

* And her tender Fair Rosamond. † And her tenders, Black Joke, and Fair Rosamond.
; Preserved from proceeds of sundry Vessels.

MOVEMENTS OF TRANSPORTS.

AMPHITRITE—Lieut. Cooley, Deptford.
LEONIDAS—Lieut. Woolridge, wrecked on the 11th Aug. off C. Breton.
MARSHALLBENNET—Lieut. Ward, Woolwich.
ORRESTES—Lieut. Garret, 20th Aug. arrived at Halifax.

PRINCE REGENT—Ionian Islands.
STYLIA—Lieut. Wesley, 5th Sept. arrived at Portsmouth.
WANDERER—Lieut. Young, Valparaiso.
WILLIAM HARRIS—Lieut. Stevenson, 12th Aug. Halifax.

FOREIGN MAILS.

For **BATAVIA**—W. Lockerby, Row, Liverpool, 1st October.
CALCUTTA—Susan, Gillies, West India Dock, 10th October.
 Warren, Exmouth, Ea. India Dock, 10th October.
LIMA—William IV., Bottomley, Liverpool, 8th October.
MADRAS—Horatio, Harfield, West India Dock, 1st October.

MAURITIUS—Copernicus, May, St. Katherine's Dock, 10th October.
ST. HELENA—Meta, Gaskell, St. Katherine's Dock, 25th October.
SINGAPORE—W. Lockerby, Row, Liverpool, 1st October.
VALPARAISO—William IV., Bottomley, Liverpool, 8th October.

Births.

On Saturday the 25th of August, the lady of Colonel Kemp, of the Polygon, of a son.
 The lady of Captain Hagan, R.N. Inspector of the Coast Guard, Ireland, of a son.
 At Falmouth, the lady of the Rev. Mr. Baker, of H.M.S. Astrea, of a daughter.
 On Wednesday the 5th of September, at Southsea, the lady of Dr. Sankey, of H.M.S. Madagascar, of a son.
 At Ide, near Exeter, the lady of Lieutenant J. T. Hooper, R.N., of a son.
 At Greenock, the lady of Lieut. Newton, R.N., of a son.
 At his Villa, Horndean, the lady of Captain Michael Seymour, R.N. of a daughter.

can, eldest daughter of the Earl of Camperdown, and grand-daughter of the late Admiral Lord Viscount Duncan.
 Mr. John Bruce, Master, R.N. to Letitia Woolcombe, widow of John Woolcombe, Esq. Lieut. of the Royal Cornwall Militia.
 At Falmouth, Mr. R. Browning, of Edinburgh, Surgeon, R.N. to Miss E. Snell.
 In Paris, Harriet, daughter of Captain Holland, R.N. to M. Milsom Wroot, Commander, Royal Navy.

Deaths.

Marriages.

On the 23d of August, at Rottingdean, Sussex, Lieutenant Joachim, R.N. to Elizabeth, daughter of T. Beard, Esq.
 On the 21st of August, at Alverstoke, by the Rev. Thomas Phillips, A.M., Samuel-Young-Henderson Harding, Lieutenant of the Royal Marine Corps, to Elizabeth Bower, both of Alverstoke.
 J. H. Boteler, Esq. Commander, R.N. to Ellen Agnes, fifth daughter of the late James West, Esq., of Bryanstone-square.
 On the 15th of August, at Kensington church, Dr. Charles Inches, R.N., to Sophia, daughter of John Peake, Esq., of Earl's Terrace, Kensington.
 At Bridgerale, Captain Usherwood, R.N., to Eliza Denuis, daughter of the late Rev. John Kingdon.
 Mr. G. W. C. Steward, of the Repulse, revenue cutter, to Miss Emma-Elizabeth Warr, daughter of Mr. G. Warr, Postmaster of Bridport.
 On Tuesday evening, August 28, at Camperdown, Forfarshire, John James Allen, Esq. R.N., eldest son of John-Lee Allen, Esq. of Errol Park, to Lady Henrietta-Dundas Dun-

At Haslar Hospital, on the 22d of August, Mr. Fleeming, midshipman of H.M.S. Excellent.

At Woolwich, First Lieutenant Missing, of the Royal Marines.

On the 5th of September, at Bruges, T. Drury, Esq., Admiral of the Red.

In Kerr-street, Devonport, on Friday the 31st of August, Commander R. Weymouth, R.N., aged 51, after an illness of only twelve hours' duration.

On Thursday the 30th of August, in Union-street, Plymouth, Mr. Patrick Coleman, Assistant-Surgeon, R.N.

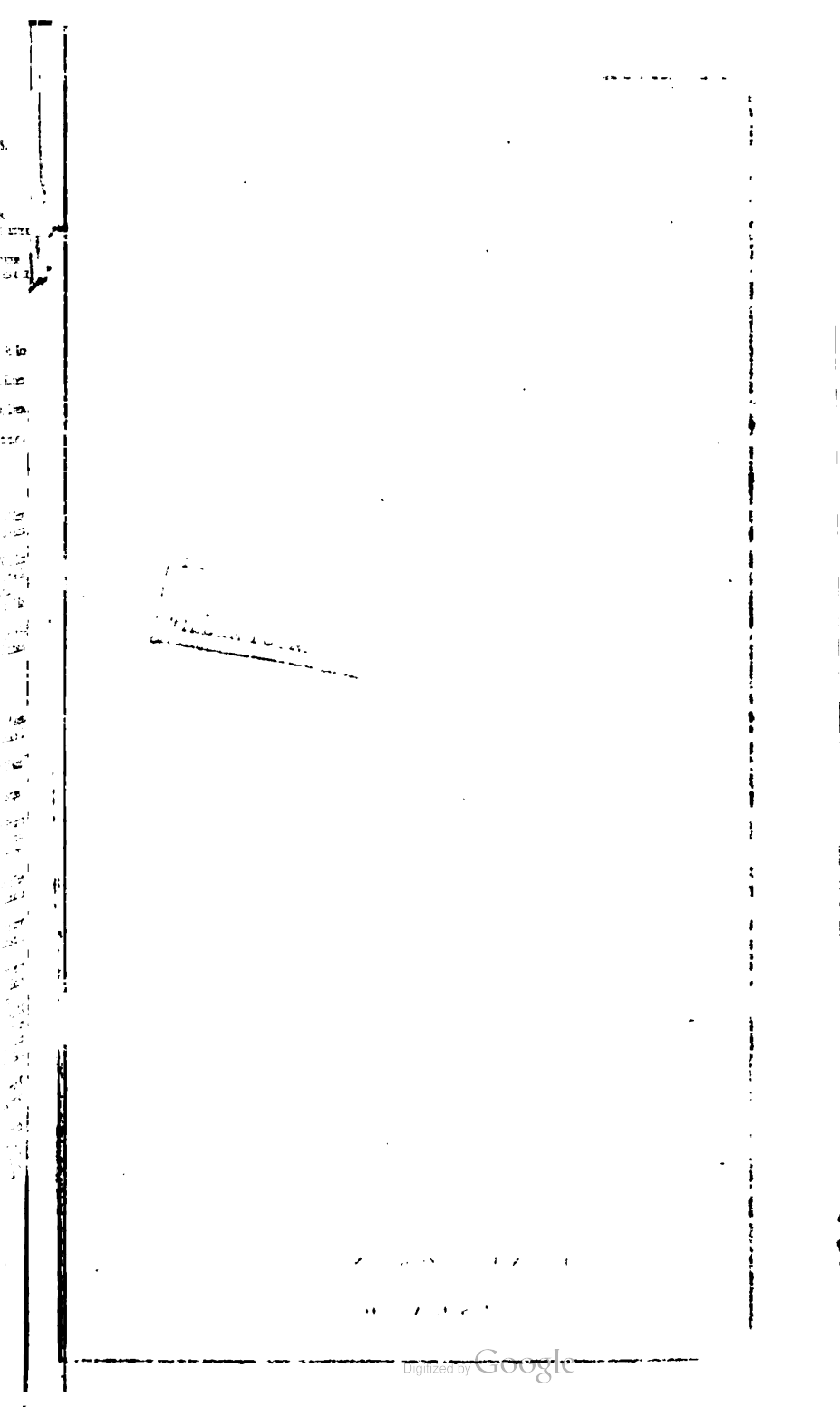
At Poole, in consequence of being thrown out of a gig, Commander W. Richardson, (5.) of the Coast Guard service.

At the Royal Hospital at Haslar, on the 17th of September, Titus Allendie, Esq., retired Commander in the Royal Navy.

Lately, Commander Nathaniel Vassal, R.N. On the 10th of September, after a few hours' illness, George Bettesworth, Esq., Lieutenant R.N., third son of J. B. Trevanion, Esq. of Carhays Castle, Cornwall.

A few days since, at Dublin, Lieutenant W. Aldred, commanding the Shamrock revenue vessel.

On the 9th of September, at Plymouth, after a long illness, Mr. Thomas Fouracre, late in command of the Busy revenue cutter, and superintendent of the quarantine at Plymouth.





NOTES

The soundings are in fathoms to low water or lowest of tides or high water 4 1/2 fms. at springs 22 to 24 fms. at neaps 7 to 9 fms.

The figures within a circle depth in feet on a rock or springs that dries at low water. The figures between the 1 water line express the depth at high water springs.

Steep Rocks (25 fms.)

The figures on the land height in feet.

The course marked A on Golan Ist (Lat. 55, by Simons's (Long. 8.) Chart.

THE NAUTICAL MAGAZINE,

&c.

NOVEMBER, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

65. THE GOLA ISLANDS, *N. W. Coast of Ireland.* Lat. $55^{\circ} 4' N.$
Long. $8^{\circ} 20' W.$ By Captain W. Mudge, R. N.

As these islands form a secure and commodious anchorage in which vessels of a large draft of water may find shelter in bad weather, or when detained by contrary winds, it becomes a matter of considerable importance to our northern traders to be acquainted with it as soon as possible. Lying, as it does, in the direct route of vessels going *north about*, a correct knowledge of it is of great importance.

The principal of the Gola islands lies about seven miles north of Arranmore Lighthouse, and twelve miles S.W. b. W. of Tory island. The harbour is formed by the coast of Ireland and a cluster of islands, of which Gola is the principal. A reference to the annexed plan will shew that they extend over a considerable space, including a clear sheet of water about one mile in extent. The anchorage is at either extreme of this space, the northern part of it under Ennis Mahon being best adapted for small vessels in three fathoms water, and the southern part of it for large vessels under Gola, in from four to five fathoms.

Several extensive reefs lie to the westward of these islands, and afford protection from the heavy westerly swell which incessantly breaks on them, and which would render the anchorage dangerous, were it not for their shelter. The largest of these reefs is named the Bally Connell Rocks, and consists of two patches of flinty slate. A large flag of this slate lies on the top of the northern part, and dries at low water; another patch lies to the S.W. of this, distant about half a mile; and a third patch in shore, distant about a quarter of a mile to the eastward of it. The bottom is very uneven and rocky, the soundings being irregular and sudden. Several reefs extend off the islands, but most of them are exposed at low water, and in general the sea breaks on such as do not appear above the surface.

There are three entrances to the port. The first is by the north, for small vessels. They must keep the Farland shore on board, and pass between it and a small rock always above water, lying on the tail of a spit which extends from

Ennis Sherra, and contracts the channel to less than 150 fathoms. The least depth in this channel is $1\frac{3}{4}$ fathoms at low water springs. A reference to the plan will shew the best track to be followed.

The second and best entrance is from the N.W. Vessels using this channel should bring the west end of Ennis Sherra to bear E. b. S. $\frac{1}{2}$ S. about half a mile, and then steer S. $\frac{1}{2}$ W. to pass midway between Ennis Mahon and Umpin Island, taking care to keep the lead going. Having passed Umpin Island they may haul up for the anchorage under Ennis Mahon in three fathoms, or continue their course for the island of Ennis Shinney, which they will observe ahead. When they have approached to about a cable's length from the small island to the north of Ennis Shinney, they may haul up, and take a berth under Gola in four or five fathoms. They will thus avoid the spit extending from Gola, and find a secure anchorage, in which they will be entirely landlocked, with the highest part of the sandy spit bearing north, distant about three cables' length.

The southern entrance has several foul patches in it, with two and a half to three fathoms on them. They may be avoided by keeping close to Ennis Fra, at least three-fourths of the channel from Tonglass, the small island lying off the south part of Gola. A vessel using this channel may run for the entrance, and having brought the outer extremes of Ennis Sherra, Umpin and Gola island, on with each other, bearing N. E. b. E. and the highest part of Ennis Shinney, bearing S. E. b. E. $\frac{1}{2}$ E.; she should steer S. S. E. one mile, then haul round S. E. b. E., and afterwards N. E. b. E. for the anchorage as shewn in the plan.

Between Umpin Island and the small one to the east of it, which is connected with it by a reef, is a good boat harbour, where landing may be effected at all times.

This harbour must be considered as important to the Fisheries, and also from its proximity to the Gidore river, a pretty sheet of water running into the harbour at its southern extreme. The harbour possesses the advantage of three approaches, and is likely to be of great service to mariners, particularly the coasting trade, which are at present quite ignorant of it. The Gidore river has a bar with three fathoms on it at high water, and six fathoms inside.

66. ISLAND OF RARAKA, NEWLY DISCOVERED IN THE PACIFIC.

Extract from the Report of M. Le Capitaine Ireland, commanding the brig l'Adhemar.

On the 31st of August, 1831, we left Valparaiso, with the purpose of putting into Otaheite. On the 30th of September we made the isles Barclay of Tully and Wolchousky, the positions of which agreed with our chronometer, and the observations made on the previous day. We continued to the west, and on the 1st of October, being in 16° S. and $144^{\circ} 35'$ W., we observed at sunset, W. b. S. a low island, thickly wooded; which appeared to extend to the westward. This island not being laid down in the English charts of the "Dangerous Archipelago," we hauled to the wind all night, to keep clear of danger, and to determine its position.

On the following morning, 2d of October, at daylight, we steered S.S.W. for the island, which we had kept sight of, and found it to be low and well covered with trees, not so high as cocoa-nut trees, of which latter also there were a few. At 7h. 10m., being in the meridian of its eastern extremity, the chronometer observations gave it in $144^{\circ} 47'$ W. of Greenwich.

We then steered so as to run along it at a short distance from the north shore, which appeared clean. At 7h. 20m., we observed another island in the W.N.W., which appeared to be Carlshoff.

A second series of observations in the meridian of the western extremity of the former island, gave it in $145^{\circ} 6' W.$, which makes it to extend 19 miles in an East and West direction. Like all the other islands of this archipelago, it encloses a lagoon, which communicates with the sea by narrow channels. This lagoon has the form of an ellipse, and appears to be 10 or 12 miles long, in a direction north and south.

At 9 it bore W. b. S., at 9h. 45m. the northernmost part of it bore E. $7^{\circ} N.$ by compass, and Carlshoff due North. A little after this bearing we lost sight of it, bearing N.E. b. E. Until noon we had well estimated our reckoning, according to which, and the latitude observed, which was $16^{\circ} 13' S.$: the north part of the island seen by us is in lat. $16^{\circ} 3' S.$

The chart which I had, was one of the Low Archipelago, by Arrowsmith, published in 1826.

Isle Carlshoff appears to me to be further South than it is laid down on this chart.

The delineation of the shore of Wittgenstein island does not appear correct; it takes a direction more to the south-west than is given to it in the chart.

We passed the night of the 2d of Oct. lying to the wind, at a short distance from this island. The following day at noon, we perceived Greig island. At 7h. 16m., being due south of its S.E. extreme, a series of observations for the chronometer placed us in $146^{\circ} 25' W.$, three to four minutes to the west of its position on the chart. This difference is the same as that which we found between the position of Barclay of Tully and our observations.

We steered S.W. b. W. and made Otaheite on the following day, an hour after noon. We steered so as to pass to the north of the island: late in the evening we saw Point Venus, and hauled to the wind at a short distance from the coast, to wait for daylight, as we could not enter the port of Pepeeiti by night. The latitude of this port is $17^{\circ} 31' S.$, and it bears S. $57^{\circ} W.$ by compass from Point Venus. The variation observed being $7^{\circ} 30'$ East.

The island which we have seen, not being laid down on any chart, cannot be known in Europe. According to the information which I have obtained at Otaheite, the natives, who know it very well, and carry on a pearl fishery there, call it "Raraka."

Note.—We have extracted the foregoing from the Bulletin de la Societé de Geographie, and fully agree in the concluding remark made therein, that the island, seen by Captain Ireland, on the morning of the 2d of October, from off Raraka, could not have been the Carlshoff of Roggewein and Kotzebue, placed by Kruzensterne in lat. $15^{\circ} 27' S.$ and $145^{\circ} 31' W.$ The least distance of it from Raraka would be 40 miles, which would place it far beyond the horizon of the Adhemar; we must therefore conclude, that the island called Carlshoff by Roggewein lies half way between Raraka and Kotzebue's Island.—*Ed.*

67. SIGNALS denoting Ice Islands in the Sleeve and Cattedgat.

THE following notice of signals, which are in future to be made at the light-house on the Scaw-point, to apprize vessels entering the Cattedgat, of the presence of ice, is worthy the attention of our Baltic Traders:—

“NOTICE TO MASTERS OF VESSELS.

“As it may be of importance to all ship-masters who, in the winter, or in the early part of the spring, are coming from the Sleeve to the Cattegat, to be informed if there be any drift ice in the Cattegat, it has been ordered that a white flag, with a perpendicular blue stripe in the middle, is to be hoisted during the day-time from the light-house upon the Scaw-point, as often, and so long, as ice may be seen from the light-house, to such an extent, or in such a quantity, as might be supposed to obstruct the navigation in the Cattegat.

“Royal Board of Customs, Copenhagen, Sept. 18, 1832.”

68. ROCK IN CLEMENT'S STRAITS, *Indian Seas*. Lat. $1^{\circ} 48' 30''$ S.
Long. $107^{\circ} 34'$ E. *Ship struck*.

WE have copied the following from a Cape Paper, of a recent date, and hope that some of our commanders will favour us with any particulars they may meet with, that will serve to confirm the accuracy of the statement, or to disprove the existence of the danger. We believe it to be entirely new.

DANGEROUS ROCK.—The position of a rock on which the ‘Atwick’ grounded on her voyage home from Singapore, August 7, 1831, at 8h. 30m. A.M. is as follows:—

Lat. by Meridian Alt. $1^{\circ} 48' 30''$ South.

Long. by Chronometer, $107^{\circ} 34'$ East,

Or, 22 miles E. of Saddle Island, in Clement's Straits, measured to that island in 48 hours after the accident.

(Signed)

H. M'KAY, Commander.

69. GRAHAM SHOAL, *South Coast of Sicily*. Least water 9 feet.

IN the first two numbers of our work we gave an account of this dangerous shoal, accompanied with some very useful directions, by Lieutenant Kennedy, R.N., commanding H. M. S. V. *Hermes*, for ships to avoid it bound to Malta. We can do no better than refer navigators to those directions, as the shoal yet continues to be a danger which should be studiously avoided. The island which formed it was at one time 150 feet above the level of the sea. In November, it was only a few feet above the sea. In February, the depth over it was from three to six feet, and in August, the least water over it was nine feet. We have copied from the *Malta Gazette*, the following official account of it, by Capt. Swinburne.

His Majesty's Ship Rapid, at Malta,
August 25, 1832.

“SIR,—I have the honour to inform you, that, in compliance with your order of the 18th June last, I have examined the spot where the volcanic island appeared last summer. It has left a dangerous shoal, consisting principally of black sand and stones, with a circular patch of rock in the middle of it, about 42 yards in diameter, on which there are two fathoms of water generally, but on one spot only nine feet. All round the rock there are $2\frac{1}{2}$ to three fathoms, deepening gradually to five and six fathoms, at the average distance of 100

yards from the centre ; then more rapidly to 10, 20, 30, 40, &c. fathoms. A small detached rock, with 15 feet water on it, lies 130 yards to the South-west of the central patch. About $\frac{1}{4}$ of a mile N.W. of the centre there is a detached bank, with 23 fathoms on it. All the rock appears to be dark-coloured porous lava ; and the sand, which is extremely fine in the deepest water, is composed entirely of particles of the same substance. By this the soundings near the shoals may be distinguished, but it should be approached with great caution, as a large extent of deep water discoloured, which lies to the South-west, may be mistaken for it, while the real danger is seldom visible till it is near, being composed of very dark-coloured materials, and it is so steep that the lead cannot be trusted. Its latitude and longitude, as far as my limited means of observation enabled me to decide, are 37 deg. 9 min. North, and 12 deg. 43 min. East of Greenwich. In four days, during which the wind was constantly from N.W., currents were perceived from N.W., N. and N.E., the N.W. prevailing, and sometimes running $\frac{1}{4}$ of a mile an hour. The temperature of the water, on and near the shoal, does not differ from that of the sea at a distance. I have moored in three fathoms water at the N.W. side of the shoal, a water cask, painted white, with a pole on it, surmounted by a white ball, and at the S.E. side of the shoal, in $3\frac{1}{2}$ fathoms, a similar cask, painted black, bearing a black ball on a pole. These two buoys are about 120 yards apart.

(Signed) C. H. SWINBURNE, Commander.

70. LIGHT OF BELLE ISLE, *Coast of France. From the Annales Maritimes for September.*

AN error of considerable importance appears in the chart of the entrance of the channel, and the coasts of France from Ushant to I. D'Yeu, published by the Depot de la Marine in 1831, and also in the general chart of the west coast of France and north coast of Spain, published in 1832.

The light of Belle Isle is marked as existing, but it is not yet completed. Delays which could not be foreseen have prevented its construction, and it will not be completed for two or three years. The description of it will then be given : it will probably be revolving, and not fixed, as it is marked on the chart.

71. LIGHTS ON NIDDINGEN ISLAND, *West Coast of Sweden.*

“Royal Swedish and Norwegian General Consulate,
“ 17, Great St. Helen's, October 17, 1832.

“Sir,

“I BEG leave to acquaint you, for the information of ship masters, and others, that I am officially informed, that, in consequence of two Light Towers building on the Island of Niddingen, on the Swedish western coast, it may occur that the old Lights will not be always at the same time discernible by navigators between the main land and the east shore of the Niddingen.

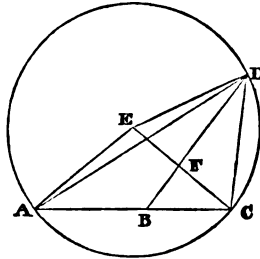
“Signed,

“CHARLES TOTTIE.

“To the Secretary of Lloyd's.”

PROBLEM.

Given { Sides.
AB.
BC.
Angles.
ADC.
ABD.
CBD.



Required. { Sides.
AD.
BD.
CD.

Construction.

On AC describe the segment of a circle that will contain the angle ADC. From B draw BD cutting the circle in D, and making angles with AB and BC equal to ABD and CBD. Join AD and CD.

Solution.

From the centre of the circle E draw EA, EC, and ED. Then In the Isosceles $\triangle AEC$, AC, and all the angles, are given to find $AE=CE=DE$.

In the $\triangle BFC$ are given BC, and all the angles, to find BF and CF. And $EC-FC=EF$.

In the $\triangle EFD$ are given EF, ED, and the $\angle EFD$ to find DF: and $DF+BF=BD$.

In the $\triangle ABD$ are given AB, BD, and the included angle, to find AD.

In the $\triangle BCD$ are given BC, BD, and the included angle, to find DC.

Note.—In Lieutenant Stanley's problem in our last number, the first three lines of the solution should have stood as follows:—On AB describe the segment ADB, containing an angle equal to the observed angle at D: also the segment ACB, containing an angle equal to the observed angle at C. Then by Euclid, *b. 3, p. 21, &c.*

GEOGRAPHICAL COLLECTIONS.

Name of		Lat. South.	Long. West.	Variat East.	Tide.	
Place.	Particular Spot.				H. W. at F. & C.	Direction of Flood, and Rise of Tide.
<i>Coast of Brazil.</i>					H. M.	
Paranagua....	Fort on the Bar.....	25° 30' 14"	48° 17' 10"	5° 44'		
"	West Point of Cotinga...	25 29 50	48 26 32	5 34		
"	Church of Sta. Antonina	25 25 42	48 39 52			
St. Catherine..	St. Cruz d'Anhatomirim	27 25 35	48 29 41	6 30		
"	City, President's House	27 35 30				
Cape St. Mary	Extremity.....	34 40 20	54 05 58			
<i>River Plata.</i>						
Gorriti Island	Well at N. E. end.....	34 57 00	54 53 38	13 48		
Monte Video..	Rat Island, Flagstaff ..	34 53 23	56 09 30	11 23		
"	Cathedral, Cupola.....	34 54 37	56 07 35	12 07		
"	Light House on Mount	34 53 21	56 11 04			
Buenos Ayres	Cathedral.....	34 35 50	58 17 53			
<i>East Coast of Patagonia.</i>						
Port St. Elena	Observ. marked on Plan	44 30 45	65 17 25	19 10	4 0	17 feet
Cape Two Bays	Hill at projecting Point	44 58 00				
Cape Blanco ..	North Point.....	47 15 00				
Port Desire ..	Ruins.....	47 45 05	65 51 45	19 42	12 10	18½ feet.
Penguin Island	Mount at North end...	47 51 45	65 41 30			
Sea Bear Bay	Sandy Beach at S. side	47 56 49	65 44 00	20 47	12 45	North 20 feet
Shag Rock.....	Rock.....	48 08 25	65 52 56			
Watchman's C.	Monte Video.....	48 18 55	66 18 00			

VOYAGES AND MARITIME PAPERS.

I. ON THE COMMERCE OF RUSSIA.

IN former times, when the commerce of Russia was carried on by the Black Sea with Constantinople, Kief was the chief entrepot where the Russians exchanged their furs, and the other productions of their soil, for the rich merchandise of India. This trade, guaranteed by several still existing treaties, rapidly advanced the civilization of the country, by bringing the people into communication with the first city of the civilized world. But when the fatal battle of Kalka had thrown Kief, and the finest provinces of Russia, into the hands of the Tartars, it altogether ceased.

Novgorod, left to herself, succeeded Kief, and became in her turn the entrepot of the commerce of the East. So early as 1226, the Novgorodians had concluded a treaty of alliance with Lubeck, and in 1276 they formally acceded to the Hanseatic league, and a factory was established in their city. They soon abandoned Constantinople, after finding a more direct rout for the transit of the merchandise of India. *Tcherdyne*, in Biarmia, became the entrepot of the commerce of Asia, and the Novgorodians established factories at Dorpat, Pskof, and Narva. This prosperous state of things was but of short duration—the Tartar invasion, however it may have favoured her independence, paralyzed in the end her commercial activity—Novgorod fell under the dominion of the princes of Lithuania for a short time; but it was the discovery of Archangel in 1553, by our countrymen, that struck the most fatal blow at her prosperity. Through the medium of Archangel, an extensive trade was carried on, not only with Russia, but with China, Bokhara, and Persia; and was monopolized by England, until the Dutch disputed it in 1682.

In 1670 the course of exchange was first introduced into Russia. The trade that was carried on through the medium of the Czar, was much restricted. Descending to the business of a merchant, the sovereign of Russia bought and exchanged just as he thought proper; his own merchandise was sold before any other; and he arbitrarily fixed his own price upon those of which he wished to become the purchaser. Such a state of things could not possibly last; and on the accession of Peter the First, he proclaimed an absolute freedom of commerce. At this period, besides her port on the White Sea, Russia, since the conquest of Astrachan, also possessed one upon the Caspian. Peter reinforced the flotilla upon the Volga, organized by his predecessor; and in 1697 he founded the first dock-yard at Voronega, situated upon the river of the same name. After that, all his attention was directed towards the Black

Sea and the Baltic, from which he was separated by the territories of independent states. The conquest of Ingria, of Esthonia, and of Livonia, removed the first obstacles—the ports of Riga, Revel, and Narva, fell into his possession; he founded Petersburg and Kronstadt, and from that moment, all the powers of his mind were directed to the sole object of giving to his country a distinguished rank among the maritime and commercial states of the world. Nature seconded the intentions of Peter, for no country is more favoured for commercial intercourse than Russia: in addition to upwards of one hundred navigable rivers, she possesses an admirable system of canals, which facilitates communication between the most distant parts of the empire. Again, commerce is the favourite occupation of almost every class of the Russian people—another circumstance that powerfully contributed to the rapid development of her commercial greatness. It was in 1703 that the first merchant-vessel entered the mouth of the Neva; the Dutch captain and crew were loaded with presents by Peter. In 1730, the number had increased to one hundred and eighty; and fifty years later, 1200 vessels annually entered the ports of the empire. In the present day this commercial activity is still greater. In 1826, 957 vessels entered the port of Kronstadt alone, and the trade of Riga and Odessa has increased in an equal ratio.

Previous to enumerating the principal outlets for the Russian productions, as also of the various articles of exportation and importation, it will be indispensable to take a rapid survey of the interior commerce of the Russian empire.

This trade is most active in every country, which, like Russia, is composed of different elements, each of which is contradistinguished from the other by some peculiar possessions, or production of the soil. Thus, if Courland and Livonia abound in corn and hemp; these, on the other hand, are in want of salt and furs. If the north abounds in timber, in tar, in tallow, and in furs; the natives are obliged to purchase from the southern provinces the corn they consume: in short, although Moscow and Petersburg may display with pride the produce of their industry, their inhabitants are obliged to have recourse for subsistence to the corn of the one, and the cattle of the other. The fish of the Volga, the cavear of the Cossacks, the furs of the Laplander, the game of the Fins, besides other articles of luxury, are brought from the provinces: these immense supplies of provisions are brought by water, and in order to comprehend fully the importance of Russian hydrography—of that collection of lakes, of navigable rivers, as well as her colonization—it will be sufficient to glance at the number of small craft, and the value of their cargoes, that frequent these different water communications.

During the year 1821 there arrived at St. Petersburg from the

interior 11,305 vessels laden ; their cargoes amounting in value to 123,180,698 roubles. On the other hand, the number of vessels that left Petersburg for different parts of the interior amounted to 1149 laden, besides 3849 unladen ; the value of the cargoes in the former was estimated at 21,833,848 roubles.

During the same year, 1147 vessels, with cargoes to the amount of 14,126,369 roubles, arrived in Moscow by the Oka and the Moskva Raïke ; and 113 vessels, with merchandise amounting to 2,224,986, left it by the same rivers. At Astrachan, upon the Volga, 555 vessels also arrived, the value of their cargoes amounting to 7,749,615 roubles ; and 346 that left it by the same route were valued at 6,955,535 roubles. Add to these, 1751 that wintered between Iver and Astrachan, and that between the two ports of Rybinsk and Doubofka, both upon the Volga, 4499 craft were constantly plying during the same time ; while 279 barks, and 103 trows of wood, descended the Don, and its tributary streams.

In fact, not to tire our readers with more of these dry details, we may briefly say, that the value of the merchandise transported by the different water communications in Russia amounted, in the year 1826, to two hundred and fifteen millions of roubles, which employed 30,000 small craft.

By land, several fine roads facilitate the commerce of the interior. In winter, thousands of sledges starting from all points of the empire, take the direction of Petersburg and Moscow ; it is then with Siberia in particular, that a trade by land is carried on. These vast regions send to Russia in Europe, not only their own productions, such as furs, iron, musk, the bones of mammoths, and morse teeth, &c. &c., but also the goods which her merchants purchase on the Chinese frontiers, and those of Mongolia. They receive, in return for these, manufactured goods both Russian and foreign. Moscow is the entrepot of this commerce, and the annual value of this trade with Siberia is about $4\frac{1}{2}$ millions of roubles. In 1828 the value of the importations amounted to 4,069,916 roubles, and the exports to 538,905 roubles.

The commerce of the interior is also considerably promoted by means of the numerous fairs that are held ;—that of Nijni-Novgorod, celebrated formerly under the name of Makarief, from whence it was transferred, ten years ago, to this central point of the navigation of the Volga, is of the highest importance. In 1827 Russian merchandise, to the value of 67 millions of roubles, was carried there, besides Asiatic, amounting to 22 millions, and colonial produce, amounting to 16 millions, making a total of 105 millions, a sum considerably below the returns of preceding years.

The exterior commerce of Russia, which is becoming more considerable every day, is carried on both by land and water. More

than two-thirds of it is concentrated at Petersburg; but there are besides twenty-nine sea-ports, and forty-one frontier custom-houses.

By land it is carried on between Europe and Asia; every year numerous caravans leave Russia to go in quest of the rich productions of China, Bokhara, Persia, and the Turkish provinces of Asia Minor. The trade with China is carried on through the medium of Kiakhta, Irkoutsk, and some other towns of Siberia. Furs, and some other articles of minor importance, are offered in exchange for tea, porcelain, silk, musk, rhubarb, and manufactured silk and cotton goods of the Chinese. This trade does not secure to Russia any great advantage, for the balance is considerably in favour of the Chinese; for while the imports amount to near four millions, the exports barely reach 1,800,000 roubles.

The commercial relations of Russia with Persia are of a more ancient date. Novgorod long ago traded with this country, through the medium of Tcherdyne: nevertheless, these relations are not more favourable to the interests of Russia, whose merchants are often pillaged by the Bachirs, Kerguises, the Lesgheans, and other predatory nomadic tribes. Tiflis is the entrepot of this trade; but it is also carried on by Astrachan and the Caspian. Raw silk forms the staple commodity.

The merchants of Bokhara sell to the Russians skins, silk and cotton stuffs, and precious stones. Orenbourg is the principal seat of this traffic, as are Tcherkask and Tiflis those for the trade with Turkey. The latter trade consists in wines, oils, and the fruits of the south, which the Turks export for upwards of three millions: they take in exchange cavear, Russia leather, and iron, but the value of these exports on the part of Russia do not exceed 400,000 roubles.

In Europe, Russia trades by land with Sweden, with Prussia, and with Austria. Cattle and Russia leather are the chief articles of exportation, for which she receives in return the manufactured productions of these countries.

But the maritime commerce of Russia is of much higher importance; it is carried on, as we have before stated, through twenty-nine ports, of which the most considerable are Petersburg, Riga, Odessa, and Archangel. In 1805, 5085 vessels left the ports of Russia, 67 of which only sailed in ballast; and during the same year there entered 5332, of which 3207 were in ballast. In 1826 the number of vessels that cleared outwards from Russian ports, were 3594; of those that cleared inwards, 3594. The port of Petersburg alone sends annually to sea 1000 sail: in the year 1825 upwards of 1200 vessels cleared outwards, and a similar number entered during the same period. The same commercial activity reigns in the other ports. At Riga, in 1825, 1043 ships arrived, and 1032 left the port. At Odessa, during the same

year, 578 vessels arrived, and 529 left it. At Archangel the number of arrivals amounted to 241, and the departures to 217.

The imports at Petersburg amounted in

1805	to	55 millions,	and the exports	to	72 millions.
1820	.	190	.	.	102
1823	.	106	.	.	104
1824	.	124	.	.	97
1825	.	115	.	.	121

During the latter year, the value of the imports at Riga were estimated at 16,134,128 roubles, and the exports at 46 millions. At Odessa, the exports amounted to upwards of 14 millions, and the imports to 11 millions.

Two-thirds of the maritime commerce of the Russian empire is in the hands of our countrymen. In the year 1826 alone, we imported manufactured goods to the value of £1,646,054.

The commerce of the Baltic, which is the most important branch, is carried on through the ports of Petersburg, Kronstadt, Riga, Revel, Libau, and Abo. The coasting trade alone employs upwards of 1000 sail. The commerce of the White Sea is carried on through the ports of Archangel and Onega, from whence a great number of vessels, engaged in the whale and herring fisheries, depart every year: this last is almost exclusively in the hands of a company formed in 1803. The commerce of the Black Sea has only existed since the opening of the port of Kherson in 1778, and the capture of Otchakof in the same year. Odessa, which was founded some time after, very soon engrossed the whole trade. To this branch of the maritime commerce, we must add that of the sea of Azof, of which Taganrog, a bad port, is the centre.

The commerce of the Caspian, which is carried on through Astrachan, is by far the most inconsiderable portion; it scarcely employs thirty vessels. Neither is it more flourishing at Petropavlosk, and in some other ports of Kamtschatka: it is totally in the hands of the American company, founded and chartered in 1797. The progress of this association, which has factories at Moscow, Irkoutsk, Iakoutsk, Okhotsk, Kasan, Tomsk, &c., aroused the jealousy of the United States; but the slight misunderstanding which it gave rise to, ceased entirely on the conclusion of the treaty in 1824, which forbids the Russians to extend their possessions beyond the 54th degree of North latitude.

(To be concluded in our next.)

II.—ON THE TIMBER USED FOR THE MASTS OF SHIPS; *communicated by John Fincham, Esq., Superintendent of the School of Naval Architecture in His Majesty's Dock-yard at Portsmouth.**

To obtain the best timber for the masts of ships, is of very great importance, not only on account of their vast expense, but because the safety of the ship frequently depends on their quality.

If timber used for most purposes have strength and durability, it possesses the necessary qualities; while the timber for masting must not only have the necessary strength and durability, but also, as far as possible, lightness, flexibility, and elasticity. By its specific gravity, the stability of the ship is not only affected, but, in proportion to its weight, must the support necessary to sustain it be increased. If the mast possesses so great a degree of rigidity as not to yield to the sudden impulses to which it is subject, it soon becomes fractured; and, if its resilience, when bent, is not sufficient to cause it to recover its true position, it becomes upset, and is rendered weaker at every impulse.

The timber commonly used for masts is fir and pine, which are distinguished according to the character of their leaves and cones.—Duhamel says, “that the leaves of the pines are slender and filaceous, more or less long, according to the species; two, three, or more of these thin leaves proceeding from the same bud. It is this characteristic which distinguishes them from the fir, whose leaves are straight and separate, and all proceeding from one slight stem, similar to the teeth of a comb.”

The timber used for masts is distinguished, by mast-makers, by the name of the place from which it is imported: as, the Norway and Riga firs, Canada red and white pines, &c.

The timber that possesses, in the greatest degree, the qualities best suited for masting, is *pinus silvestris Genevensis vulgaris*, from the north of Europe, from the vast forests of Russia, Norway, and Poland; that which is most esteemed is obtained from the forests of the Ukraine and Livonia; it is brought down the Dwina, and is commonly called Riga, on account of its being shipped from that port. In the same way, the Adriatic fir derives its name from being shipped in the Adriatic.

The great expense of Riga timber, and the difficulty there frequently is of obtaining it in time of war, have been inducements to Great Britain, as well as to other nations, to endeavour to have resources for masting their navy within their own states and colonies.

The different firs and pines, besides those of the North, used for masting the royal navy of Great Britain, and likewise to a great extent her commercial navy, are principally those from Canada, with some from Nova Scotia, and a few from Scotland. The timber from Canada consists chiefly of the white or yellow pine, *pinus strobus*, commonly called the Weymouth, or white masting pine; and the white, red, and black spruce, *pinus Canadensis*. The Scotch fir, *pinus silvestris*, is common to the Highlands of Scotland, as well as to Norway, Denmark, and Sweden.

The standing masts are generally made of the yellow, and topmasts of the red, pine; the white, red, and black spruce are but little used, except for small spars. Although the red and yellow pines do not possess, in an eminent degree, those good qualities which are found in those of the North, yet they have them to such an extent, especially the red pine, as qualifies them for the

* From the Papers on Naval Architecture.

purposes for which they are employed. The Adriatic fir is frequently used for the masts of cutters and other small vessels, but does not possess particularly good qualities.

The woods that have been partially used for masts, are the Poon from the East Indies, and the Cowrie. The Poon has been used for masting ships built in India; the Cowrie is brought from New Zealand, and has been used for small standing masts, and for topmasts as high as those of frigates, and even for a first-rate. It possesses many of the most esteemed qualities for masting, and will probably be found to be a wood very eligible for this purpose. The cowrie resembles the pine, in being coniferous, and containing a considerable quantity of resin, which exudes from it spontaneously.

The French, according to Forfait, M. le Ray, De Castries, and others, have received considerable supplies from Corsica, from the Pyrenees, and some from the Alps. To obtain supplies from the Pyrenees, they took immense pains to cut roads from the forests to the plains. They appear, likewise, to have received supplies from Catalonia, Savoy, from the Departments of Mont Blanc, Puy de Dome, and Cantal. These firs, however, contain but little resinous substance; the heart is porous, the grain coarse; their flexibility is very trifling; and, from a quick evaporation of their substances, they soon become dry, so that they break under very slight strains.

The pines from the Pyrenees are also inferior to those of the North, having but a small quantity of resinous substance in them, which soon evaporates; and, from the difference of the soil, they are very variable in quality; many, however, are of a fine grain, and of considerable strength and elasticity, until they become dry. Those from Corsica, *pinus halepensis*, of which species many grow on the Mediterranean side of France, Spain, Italy, Asia Minor, and Barbary, and likewise some on the south-east of France, have more resin in them, and are harder and considerably better than those from the Pyrenees.

The Turks obtain excellent firs from the shores of the Black Sea, from the Bosphorus to Sinope; they are commonly of the species denominated *pinus pinea*, and *pinus laricis*: they are of better quality than is common to these species, and are little inferior to those of the North. These trees are plentiful near the Olympus, and in the interior of Asia Minor; the stem is straight, and grows to a considerable height and size. The Turks use them not only in masting, but likewise in the construction of the hull.

In selecting firs for masting, the climate, aspect, and soil in which they grow, are to be considered. The state of the tree, when standing, may be known, in a great measure, from the luxuriance of its upper branches: if they be dead, or do not appear flourishing, the tree may likewise be considered on the decay.

To judge of the qualities of trees while standing, belongs more immediately to those employed in the forests; while the mast-maker is left only to make his choice of the trees when felled, and whose attention is only drawn to their appearance as timber.

To become familiar with the different kinds and qualities of fir-timber, requires considerable practice and close observation, with likewise a proper acquaintance with some of the general appearances that distinguish these qualities. The firs most desirable are those with a fine and close grain, where the ligneous layers are closely blended together, and with the annual and concentric circles fine and firmly connected, and decreasing gradually from the heart to the sap. The nearer the concentric layers are to circles or ellipses, the less likely is the timber to be defective, as sudden swells are frequently caused by rindgalls. They are also generally strongly charged with resin, which is not only beneficial in giving strength and elasticity, but preserves the timber from

insects, and prevents fermentation and decay. The colour should be of a clear or bright yellow, with a reddish cast alternately. The smell in the Riga, and other firs of this quality, should be strongly resinous, especially when they are exposed to the sun, or any other heat, or when their shavings are rubbed between the fingers. On the contrary, when the layers are separate, porous, or open, with tints of a pale red near the heart, and white spots intermixed, or of a dark red with the resinous particles of a blackish colour, the timber is in a state of decay. Likewise, when the firs are cut transversely, and are of a colour not uniform, but interspersed with veins, and the smell is either entirely gone or become fetid, they may be considered past their prime, and approaching to a state of decay. In yellow and red pines that have not the strong resinous smell, the degree of unsoundness is denoted by the offensiveness of the smell; and they will, in common with other firs, have alternate layers of a foxy brown or red colour, and will break out before the sharpest plane in being wrought.

The experienced mast-maker forms his opinion of the quality of a stick, not only from the colour, smell, and appearance of the grain, but by its working; for as a stick is more or less frough or fragile, the greater or less difficulty he has in separating its parts, as he chops them off. If the timber be good, its parts, on being separated, appear stringy, and oppose a strong adhesion; and the shavings from the plane will bear to be twisted two or three times round the fingers: whereas, if the stick be of a bad quality, or in a state of decay, and has lost its resinous substances, the chips and shavings come off short and brittle, and with much greater ease.

TABLE I.

Experiments on Pieces three inches square and two feet long beyond the support, fixed at one end; weights acting at two feet.										
Distinguishing Number.	Species of Timber.	DEFLECTION.				Weight that the Pieces broke with.			Specific Gravity.	Remarks.
		with 5 cwt.	with 10cwt.	with 12½ cwt.	with 15cwt.	cwt.	qrs.	lbs.		
		ins.	ins.	ins.	ins.			ozs.		
1	Riga Top52	1,02	2,07	3,1	16	2	0	605	All the specimens in these experiments were dry.
2	— Butt .....	.4	.8	1,5	2,87	18	3	0	668
3	— — — .....	.37	1,0	1,37	1,62	16	1	0	821
4	Red Pine Top ..	.63	1,42	2,68		14	2	6	544	
5	— Butt .....	.6	1,07	1,95		16	8	1	634
6	American Spruce } Top	.56	1,32	2,13		18	2	6	504	} The butts of these specimens were tough.
7	— — — } Butt .....	.5	.9	1,67		15	3	22	570
8	Norway Top ....	.55	1,04			12	0	26	464
9	— — — } Butt .....	.62	1,35		3,0	16	2	12	506
10	Adriatic Top ....	.5	1,0	2,0		12	3	26	467
11	— — — } Butt .....	.4	.7	1,4		15	1	8	493
12	Yellow 6-inch Top	.62	2,0			11	1	0	406	
13	— — — } Butt .....	.63	2,12			12	1	18	493
14	Scotch Spruce Top	.58				9	3	16	389	
15	— — — } Butt .....	.54	2,0			10	3	26	440
16	Cowrie Top37	.75	1,12	1,62	17	2	0	626	} The heart of pune, in all cases, was considerably weaker, in proportion to the outside, than any of the other experiments.
17	— — — } Butt .....	.5	.87	1,25	1,87	18	3	0	632
18	Pune Top Outside	.46	.62	.9	1,4	18	2	14	654	
19	— — — } Heart	.62				9	3	18	608	
20	— — — } Butt Outside	.37	.75	1,0	1,25	20	3	14	666	
21	— — — } Heart	.37	.8			10	3	24	646	

TABLE II.

Experiments on Pieces three inches square, supported on two props, four feet distance; weights acting at the middle.

Distinguishing Number.	Species of Timber.	Deflection with 15 cwt.		What it recovered by its resilience when the weight was removed.		Deflection with 22½ cwt.		What it recovered by its resilience when the weight was removed.		Deflection after one hour's pressure with 32½ cwt.	What it recovered by its resilience when the weight was removed.		Weight that the Pieces broke with.			Specific Gravity.	Remarks.
		ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.		cwt.	qrs.	lbs.				
1	Riga Top31	.29	.62	.59	.97	.91	32	2	14	664				All the pieces in these experiments were green. Most of these pieces broke off after the pressure had continued about 5 minutes.		
2	— Butt .....	.25	.22	.53	.5	.85	.73	35	1	10	720					
3	Red Pine Top ..	.81	.68	1.37	1.13	1.4	1.1	23	1	6	627						
4	— Butt ..	.63	.59	.95	.91	1.2	1.05	28	3	24	712						
5	American Spruce } Top	.37	.36	.62	.6	1.87	.95	21	1	26	598						
6	— Butt	.31	.29	.63	.61	1.07	.95	23	2	14	643						
7	Norway Top ...	.57	.50	.82	.8	1.37	.93	21	2	0	572					
8	— Butt ..	.58	.56	.84	.82	1.37	.95	23	1	14	595						
9	Adriatic Top ...	.30	.29	.42	.4			21	1	6	532					
10	— Butt ..	.29	.27	.43	.41	.65	.45	23	0	16	582						
11	Yellow Pine Top	.89	.77	1.48	1.1			21	2	0	553						
12	— Butt	.73	.6	1.0	.9			23	3	26	661						
13	Scotch Spruce Top	.84	.83					18	2	0	478						
14	— Butt	.72	.7					19	2	6	542						
15	Cowrie Top .....	.31	.3	.43	.41	.62	.54	35	2	7	626					
16	— Butt .....	.31	.3	.43	.41	.62	.54	36	0	0	643					

TABLE III.

Experiments on Pieces three inches square, supported on two props, four feet distance; weights acting at the middle.

Distinguishing Number.	Species of Timber.	Deflection with 15 cwt.		What it recovered by its resilience when the weight was removed.		Deflection with 22½ cwt.		What it recovered by its resilience when the weight was removed.		Deflection after one hour's pressure with 22½ cwt.	What it recovered by its resilience when the weight was removed.		Weight that the Pieces broke with.			Specific Gravity.	Remarks.
		ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.		cwt.	qrs.	lbs.				
1	Riga Top5	.48	.93	.87	1.01	.97	32	1	4	516				All the pieces in these experiments were dry. Very good specimens.		
2	— Butt .....	.31	.3	.62	.56	.97	.85	34	1	14	633					
3	Red Pine Top ..	.56	.51	1.25	1.13	1.37	1.2	23	0	0	514						
4	— Butt ..	.42	.40	.62	.56	.69	.6	25	0	0	644						
5	American Spruce } Top	.47	.38	.91	.87	1.08	.97	22	2	26	488						
6	— Butt	.47	.35	.82	.78	1.06	.94	22	3	1	546						
7	Norway Top ...	.51	.49	.83	.81			21	0	14	464					
8	— Butt ..	.57	.56	.84	.8	1.0	.81	23	0	14	506						
9	Adriatic Top ....	.27	.25					21	0	26	443					
10	— Butt ..	.25	.23					22	1	23	462						
11	Yellow Pine Top	.6	.48					21	1	0	395						
12	— Butt	.66	.5	.99	.67	1.6	1.21	23	2	0	442						
13	Scotch Spruce Top	.75	.72					15	2	14	348						
14	— Butt	.62	.61					17	2	0	442						
15	Cowrie Top .....	.56	.56	.68	.64	.75	.67	32	1	0	560					
16	— Butt .....	.37	.27	.43	.43	.5	.48	35	1	0	582					
17	Pane Top .....	.32	.32	.61	.6	.64	.62	35	2	14	632					
18	— Butt .....	.25	.25	.56	.56	.62	.61	37	1	8	658					

TABLE IV.

Experiments on Pieces three inches square, supported on two props, four feet distance ; weights acting at the middle.

Distinguishing Number.	Species of Timber.	Deflection with 15 cwt.		What it recovered by its resilience when the weight was removed.		Deflection with 22½ cwt.		What it recovered by its resilience when the weight was removed.		Deflection after one hour's pressure.	What it recovered by its resilience when the weight was removed.		Weight that the Pieces broke with.			Specific Gravity.	Remarks.
		ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.		cwt.	qrs.	lbs.				
1	Riga.....	,25	,25	,37	,33	,4	,33	40	1	22	610				All the pieces in these experiments were very dry, and were particularly good specimens. Broke after the pressure had continued fifteen minutes.		
2	Red Pine.....	,36	,35	,68	,62	,86	,78	33	3	0	544						
3	Yellow Pine ..	,37	,3	,78	,72	1,0	,82	24	2	12	439						
4	Norway	,31	,3	,61	,6	,86	,63	29	1	16	517						
5	Scotch Pine....	,62	,6	,93	,9			22	2	0	453						
6	Cowrie	,29	,29	,46	,44	,5	,45	36	2	22	579						

TABLE V.

Specific Gravity, Relative Strength, Flexibility, and Resilience, of the different Timber used in Mast-making.

Distinguishing Number.	Species of Timber.	Mean Specific Gravity.	RELATIVE			Mean Specific Gravity.
			Green.	Strength.	Deflection.		Resilience.	Dry.
1	Riga Top.....	682	1000	1000	1000	576
2	— Butt	754				656
3	Red Pine Top	647	853	1500	980	544
4	— Butt	741				638
5	American Spruce Top	627	764	1100	905	541
6	— Butt	678				562
7	Norway Top	595	740	1260	860	509
8	— Butt	616				520
9	Adriatic Top	552	709	864	872	467
10	— Butt	585				493
11	Yellow Pine Top	562	746	1320	750	430
12	— Butt	665				472
13	Scotch Spruce Top	475	476	1450	1100	389
14	— Butt	536				440
15	Cowrie Top	604	974	920	1086	571
16	— Butt	603				619
17	Pune Top.....		1226	978	1146	632
18	— Butt					662

The foregoing experiments the writer made, to ascertain the principal relative qualities of timber used for the masts of ships. The experiments were made on a larger scale than usual; so that small defects, to which they are always liable, could not greatly affect the results. They were also conducted with great attention and care.

The results inserted in these tables are not taken from single experiments, but are the *mean* results of numerous experiments on the same kinds of timber. The defects common to experiments on specimens of timber, caused by the crossing of the range of fibres, or from the fibres not firmly adhering, render it necessary not only to make the experiments on large specimens, but on a great number of them, and that the pieces should be cut from different trees. For, in the experiments that were made, a piece of Riga, well charged with resin, the specific gravity 821, was found to bear only 16 cwt.; whereas a piece of yellow pine, of the same length and size, with its specific gravity 504, was found to bear 25 cwt.; a piece of red pine, likewise, with a specific gravity 527, was found to bear only 18 cwt.; while a piece of Scotch spruce, the specific gravity of which was only 450, was found to bear 25 cwt. Now, if a comparison had been drawn from these results, since the experiments were good, and the pieces, to appearance, equally good, the conclusion would have been, that the yellow pine was far superior, in respect to strength, to the Riga, and the Scotch spruce to the red pine; and the same for all the other species of wood upon which the other experiments were made. A like error may likewise be fallen into, on the contrary side, in determining the relative strength by a single experiment; since a piece of Riga was found to bear 42 cwt., while a piece of yellow pine was found to bear only 12 cwt.; and a piece of red pine 33 cwt., while a piece of Scotch spruce was found to bear 9 cwt. To have taken, therefore, these experiments for their relative strength, or the extreme for the mean strength, would have given results contrary to what a greater number of experiments has determined; for we find the mean weight that Riga will bear will lie between 32 and 36 cwt., yellow pine between 24 and 26 cwt., red pine between 27 and 30 cwt., and Scotch spruce between 13 and 17 cwt.

From these inequalities in timber, the same incorrect conclusions, without repeated experiments, will likewise be drawn in determining the specific gravity, relative deflection, and resilience of the different timbers.

In Table V. the different timbers are placed with their relative qualities, taking the Riga at 1000; the qualities are not deduced altogether from the experiments given in the preceding tables, but from a regular series to determine the mean, without taking into account the extremes that, as before stated, are to be found in most kinds of timber.

Those kinds of timber that have but little or no resin, and whose colour is of a whitish or light brown cast, and are of rather a coarse grain, (as the Adriatic, Norway, &c.) will, as they become very dry, though they maintain their strength and resilience for a considerable time, be so rigid that they will be always subject to break by any sudden impulses, without warning, especially if they be kept in dry stores for a long time.

The Riga, and other timbers, containing a proper quantity of resin, and the red pine, from the fineness and closeness of its grain, and adhesiveness of its fibre, not only maintain their resilience, but strength and flexibility, much longer,—even to a very dry state.

The cownie possesses advantages over most other timbers, from the firmness of its grain, and uniformity of its texture. In all the experiments made upon its strength, both dry and green, it was found commonly to bear 36 cwt., and never to bear less than 30 cwt.; while, at the same time, the heart appeared equally strong with the outside.

The experiments that have been made on this timber, compared with the Riga, Dantzic, and other esteemed firs, justify a conclusion, that it possesses qualities equally good with these timbers, for all the purposes for which they are generally used. The cowrie, by being exposed to the weather, appears less liable to shrink, and stands equally well with them. A piece, half an inch thick and about a foot wide, with a wind-shock extending part of the way up from one end, was exposed to the vicissitudes of the weather for more than eighteen months; after which period it was no more shaken, and underwent no other alteration, than the sap that was on it to some distance from one edge disappearing, and leaving it with the colour and the firmness of the wood fully elaborated. Most of the cowrie spars that have been brought to England appear but a little beyond the saplings, since many of the full-grown trees are said to exceed thirty feet in girth, and to continue the full size to nearly sixty feet from the ground. Their common diameter is from three to six feet, and their length frequently from ninety to one hundred feet, clear of branches.

From the experiments that have been made on the different kinds of timber employed in mast-making, and the results of which are confirmed by experience in the use of them, a fair conclusion may be drawn, that timber, whose specific gravity does not exceed that of the Riga, and whose strength, tried on pieces of the same dimensions, and under the same circumstances as those in the foregoing experiments, which is found equal to bear 24 cwt. with its flexibility and resilience, within the limits of the results in these tables, may be considered suitable for the purposes of mast-making, as far as respects these qualities; while its durability may be judged of by close observation on the texture of its fibres, uniformity of growth, and by the quantity and state of the resinous substances it contains.

III. METEORIC PHENOMENA.

M. LE BRET, the commander of the French brig *l'Union*, states, that on the 29th of June last, at 11 P.M., being two leagues to the south of the light of Saint Matthew, (Coast of France,) on a sudden he was surrounded by an appearance of fire of every variety of colour. This phenomenon lasted nearly two minutes, and he believed that his vessel was on fire. It was also attended by a very dense smoke, which had an unpleasant smell. Three or four minutes afterwards it seemed to him that a discharge of cannon was directed at him. At this period the wind was light from the east, the stars brilliant, and the weather fine.

Constant Legrand, commander of the schooner *Henry-Louis*, states, that on the 29th of June, 1832, being in lat. $49^{\circ} 10'$ N. and long. $3^{\circ} 25'$ W. the wind being light from the east, the weather fine, and the stars brilliant, the men who were on watch on deck told him that they saw something having the appearance of a balloon of fire which fell into the sea, to the S.W. and that it occasioned a light so brilliant that the vessel seemed to be on fire for the space of two minutes.—*Bulletin de la Soc. de Geogr.*

IV. PROSPECTS OF AFRICA. *By a Colonist.*

LANDER'S discovery of the mouth of the Niger has turned public interests once more to Africa, and there may now be at last a rational hope of establishing some useful communication with its people, of discovering some portion of the natural riches of a land fertile beyond all conception, where it is fertile at all; and perhaps of ameliorating the social condition of those millions of mankind, who, from the earliest ages, have been condemned to be victims of their own ignorance, and of the avarice of every other people of the globe.

Those who scoff at every thing, may scoff at the idea that Providence takes any care about these matters. But there may be no superstition in thinking that there is a striking coincidence between this great discovery of a path into the heart of Africa, and the present perfection of the steam-boat; and that the honour of the discovery, and perhaps its first and most direct advantages, are given to the nation which first declared against the sale of the unhappy African, and which, to this hour, holds an unremitting and most righteous struggle against the incorrigible and hideous avarice of the European slave-traders. The entire of Western, and what is called Central Africa, are unquestionably laid open by the discovery of the mouth of the Niger, and by the access thus given to the numerous rivers which branch off from its course, and which intersect nearly the whole of the middle country. But there is still a vast country, the table-land of Africa, totally unexplored, and of which we even can conjecture little; except by judging from other table-lands, that its climate is temperate, its population naturally numerous, and that in it we shall probably make the finest and most useful discoveries of natural produce and mineral opulence.

The extent of Africa overwhelms the mind. It is nearly five thousand miles long, by four thousand broad, and it lies directly under the sun's path; the equator almost intersecting it, and the tropics covering the central regions of the north and south. The sun is *always vertical*, somewhere, in Africa. In Major Head's ingenious *Life of Bruce*, he observes, that "what is marked by nature, on our European scale of climate, as access to heat, is all that the African knows of the luxury of cold, except what is produced by elevation or evaporation." It is two thousand five hundred miles from the equator to its northern boundary, the Mediterranean, and about the same distance to its southern, the Cape of Good Hope. The great question with men of humanity and common sense is, how this mighty continent can be civilized, become happy, and be made a contributor to the general happiness and wealth of the world. In this view, we entirely agree with the author of the *Life of Bruce*. Nothing has been made in vain. The

Creator has made no country for the express purpose of defying the activity or benevolent ingenuity of man. All is capable of being turned to good, if we but use the means. The earth was undoubtedly made to submit to the mastery of man, and the vast and curious inventions of late years seem to have been put into our hands for the purpose of expediting that mastery. It is not improbable that the discovery of America was *delayed*, until the peaceful state of Europe, the commercial activity of its people, and the adoption of settled governments, rendered it capable of taking advantage of that magnificent discovery. It is observable, that the discovery originated in no striking improvement of either ships or seamanship at the time. The European ships and sailors had been for centuries as good as those which first touched at America. But if the discovery had been made under the Roman empire, it would have been probably neglected by a people who were engrossed with war, and who despised commerce, and hated the sea. If in the dark ages, it would probably have been equally neglected among the furious feuds of the little European powers, too little to bear the expense of remote expeditions, living from day to day on the plunder of friend and enemy, distracted by perpetual change, and generally perishing as soon as they rose. The only use which they would have made of America would be as a place of refuge to some defeated chieftain, and his half-savage followers. But a time came, when the Crusades had relieved the European cities of the weight of baronial tyranny, when the sudden opulence of Venice, arising from its eastern intercourse, awoke mankind to the value of commerce, and when the leading sovereign of Europe, Ferdinand, the ruler of the most chivalric and daring nation of the fifteenth century, had just flung off the tremendous pressure of the Moorish wars. And then, at that moment, was divided before the Spanish keel the mighty barrier which had shut out America from the eye of mankind since the creation.

If Africa, so long known, and so close to the most civilized and inquiring regions of the world, should have remained to this day scarcely less shut out than America, we may well ask, how could we expect to have the treasures of this land given to us, while Europe was guilty of the slave-trade, while, if we could have penetrated the hidden glories of this fourth of the creation, it would have been only to spread more misery, to shed more blood, to fill it with the moral contagion of the most corrupting of all traffic, to inflame more savages to fury and massacre by our temptations, and finally to drag more human beings from their country, to perish thousands of miles from their home. The time has certainly arrived when this trade, which it is no violence of language to call satanic, has received its death-blow, at least in England; and the time may not be remote when we shall be summoned to apply the national vigour to open up the treasures of Africa. It is not

unreasonable to hope that the whole southern continent may be given over to our tutelage, and that England, the great depository of freedom, knowledge, and religion, may be the elected guardian of the *infancy* of Africa. Our extraordinary advances in machinery, and the general command over the powers of nature, a command which seems to have been almost exclusively confided to this nation, have not been given for nothing; and important as they are to the increase of our wealth and comforts at home, we shall yet see them operating through the world on the colossal scale suited to the wants of nations. The very fact that our powers of steam and machinery are so rapidly increasing, that we literally can hardly imagine to what known obstacle we shall have to apply them, tends to show that there must remain something very important in this world for man to do. In short, the enormous tools which nature is placing in our hands clearly foretell that she has some wonderful work for us to perform, and, therefore, instead of calculating, as many people do, for instance, how long our coals are to last us, and in how many years hence we are unavoidably to be left in cold and darkness; is it not justice to believe, that with our new powers we shall obtain new resources, and that the wisdom of nature will continue to bloom, when the idle fears and theories of the day have faded away and perished.

The hope of civilizing Africa must depend on its being made fit to sustain civilized communities, which, from its present natural constitution, it is unfit to do; one immense portion of it being over-spread with barren sands, and another being alternately turned into a bog by rains and rivers, and into a nest of contagion by the action of the sun upon this mighty morass.

Between the tropics it is constantly raining somewhere, and the rain falls in quantities that absolutely overwhelm the country. The hot winds constantly follow the sun from tropic to tropic, and the vapours which they raise, on reaching the higher regions of the atmosphere, and being chilled, are constantly poured down in rain. A country of a thousand miles on the north and south of the line, is thus kept constantly in a state of the most powerful irrigation, and the direct result is, a most superabundant fertility for the month or two while the earth is drying, and excessive heat and excessive moisture first come in full combination. Yet, for the remainder of the dry period, the land is a sink of pestilence; so deadly from its miasmata, and so torturing from the swarms of insects generated by the heat, that man and the inferior animals perish in great numbers, or fly even to the desert, where they had rather encounter the tremendous fierceness of the sun, than the agony of the innumerable stings that haunt them in the fertile soil. The country is covered with immense marshes, and thick jungles, where the over-luxuriance of the vegetation checks the air, and all is fever and death.

We see that the whole question turns on the distribution of the rains. Too much water, or too little, makes the misfortune of Africa; and the only remedy for the evils which convert one of the richest soils of the world into a grave, or a nest of reptiles, is to be found in equalizing this gift of nature. It is impossible to doubt that a vast portion of the wilderness of Africa would produce the fruits of the earth, if they had water. We find in the heart of the desert vegetation wherever there is a well, and a little colony, surrounded by woods and rich fields, wherever there is any thing like a regular supply of water. The grand problem would be to lead the superfluity of the tropical rains from the innumerable rivers, and immense lakes of central Africa, into regions now condemned into perpetual dryness. The results would be to dry the watery morass into productive soil, and to water the burning sand alike into fertility; in fact, to drain the centre of the country, and to irrigate all the rest: and for this purpose the peculiar construction of the continent seems to offer no trivial advantages.

The whole central belt of Africa runs directly under the equator, and from the known figure, and the actual formation of the land, this central belt is so lofty, that it pours its rivers, the collection of its rains, down on both sides through the continent in great abundance and force. Denham computes the lake Tchad, one of the reservoirs of those rivers, at twelve hundred feet above the level of the sea, and the ground beyond it towards the south was still rising. Bruce computed the southern elevation to which he had reached at two miles above the level of the sea, and this is probably but a small part of the whole elevation. To use Major Head's words, "It being true that there are a series of vast tanks and reservoirs placed by nature above the thirsting deserts of Africa, the stagnation, as well as the rapid evaporation of which, now pollute the climate; and also that a number of immense rivers flow out of Africa into the ocean; would it not be a problem worthy of the inquiry of the travellers, by a scientific reconnoissance, to determine (only in theory, for theory must in this case long precede practice, and with the practice, after all, we can have little or nothing to do) what would be the difficulties of attending the tapping those enormous vessels. As also of applying tourniquets upon those veins and arteries, which, eternally bleeding, have left a great portion of Africa destitute of vegetable life."

We fully agree in this conception, gigantic as it is, and difficult as its execution may seem. It would be a truly noble object of inquiry, and would be worth all the idle ramblings of our dilettanti in Egypt—that fashionable lounge—to the last days of the earth. But we greatly doubt the *veto*, that we can have but little to do with the practical part of the change, if it shall take place. If it be ever done, it will be done by England. It is our boast, and deservedly so, that no work of palpable good ever wanted protec-

tion in our country, nor the ability to carry it into execution, when once fairly undertaken : and there are some curious instances which may take off our alarm at the difficulty. The water of the tropics is actually conveyed through the whole length of the sands of Nubia in the memorable course of the Nile ; and a little sandy region in the shore of the Mediterranean is turned into the most extraordinary example of fertility in the world by this simple watercourse. There are in Egypt itself, the very region of sand and sunbeams, dykes and embankments for irrigation, on a vast scale, to which the permanent fertility of the land is owing. In the Abyssinian history, a threat is recorded of one of the kings who had a quarrel with the divan of Cairo, to turn away the Nile, and thus "stop the cock" out of which Egypt drank. There is a remarkable instance, too, of a threat of this kind having been partially put in force, when Laliballa the king, in the year 1200, turned the course of two rivers from the Nile into the Indian ocean.

The true points in which those conceptions should be viewed, are their use to Africa, their use to mankind in general, and their especial honour to England. It is a matter of great importance to have a direct object of acknowledged utility, in our researches in a foreign country. Hitherto in Africa we have had scarcely any, or the mouth of the Niger alone. Bruce, a man of admirable powers, of great acquirement, intelligence, and mental and personal activity, wasted his health, his wealth, and his years, in achieving the trifling discovery, that one of the sources of the Nile was a spring in a hillock, in an Abyssinian valley. But the expedition to discover the means of pouring fertility into the wilderness, and giving health to the tropical regions of Africa, would be among the noblest that can be undertaken by the benevolent ambition of man. That there are vast districts where drainage could be effected with very simple means, and equally vast ones where water might be collected and preserved to supply the failure of the rivers in the dry season, is well known. On such a subject, though rashness may be deprecated, it would be criminal to despair. We must remember, that "the difficulties will not increase, while our powers are hourly increasing ;" and in this good spirit let us turn to the service of human nature our last grand discovery of the Niger.

But it is a higher consideration still, that by giving health and fertility to Africa, we should be actually taking the most direct way to elevate the character of its innumerable tribes. The tyranny of the petty kings is almost wholly founded on the poverty of their people, on their ignorance of every thing, and their unacquaintance with the arts and comforts of European life. The poverty of their kings themselves drives them to the horrid resource of the slave trade, itself re-acting on every feature of the national character. Africa, undivided by its enormous deserts,

and with the spirit of man unbroken in it by perpetual disease and poverty, would not long remain without making advances in liberty, knowledge, virtue, and, as the combined result and protector of them all, in Christianity.

Our intercourse, unstained by the indescribable pollution of the slave-trade, would rapidly excite the tribes to the employment of their natural powers, and, by a wise and well-regulated commerce, we *must* rapidly rescue those benighted millions of our fellow-men from fetters heavier and more fatal than all that were ever forged of iron. And all this might be done without the most trivial coercion, and with the most direct advantage to ourselves.

In all countries under the sun, there is one great road that leads directly to every man's heart, "his own interest." If we were calmly to offer to those people the information that we possess, and give them gratis the inestimable benefits which science can bestow upon rude labour; if we were to offer to the poor woman a wheel for her draw well—to the people who pound their corn in a mortar, a simple method of grinding it—if we would by a common filter sweeten for them impure water, and by a herb lull the painful disorder which it creates—if we would come forward to replace a dislocated limb—if we could shew manure, unknown, lying in the soil before them; and, on the greater scale, if we would explain to those people, that by a very simple operation immense districts of their vast country might be either irrigated or drained: in short, if, on great subjects as well as small, we were chemically and mechanically to assist them, we should undoubtedly find that the general good qualities of a mind truly civilized, would, in Africa, as well as elsewhere, be fully appreciated, that our fame would justly extend, and that every tribe and nation would be eager to receive us. The following sketch of the rivers of Africa shews what vast floods the tropical rains pour down, and how little founded is the complaint which charges Africa with general want of water.

The only river of consequence which empties itself into the Mediterranean is the Nile. It is the longest river in the whole continent, being navigable about four hundred and fifty miles from the sea. The greatest velocity of the stream is three miles an hour. The rivers in the Barbary States, which run into the Mediterranean, are very insignificant.

There is no stream deserving notice on the western coast of Morocco to the Senegal.

From the river Senegal, along the coast of Guinea to the equator, there is more water discharged into the ocean than from any other part of Africa; probably more than from all the rest of that Continent put together. The Senegal has a course of about one thousand miles; is navigable for sixty leagues from its mouth, in all seasons; and, in the rainy season, vessels of one

hundred and fifty tons can go two hundred and sixty leagues from the sea.

The next river of importance is the Gambia. It is navigable for vessels of three hundred tons for sixty leagues. The tide is felt, in the dry season, at the distance of two hundred and fifty leagues. For the first three months, even of this season, the current is so strong, that vessels cannot ascend the stream.

The next river is the St. Domingo, then the Rio Grande, navigable for vessels about twenty leagues, and for large boats about forty leagues farther. From this river, or more properly from the Gambia to the river Mesurado, the country being flat, the rivers are often united a considerable distance up the country, when they branch off, and discharge themselves into the sea in distinct streams.

The Mesurado is a large river, so is the Sierra Leone River. Then follow the Ancobar, St. John's, Volta, and Formosa rivers. The latter can be ascended twenty-eight leagues.

From Formosa river, are the Rio dos Forcados, the New Calabar, the Bonny, Old Calabar, and the Rio del Rey. These are very large rivers, and not well known. The country about here is low; and these streams intersect the land in every direction, and form numerous islands.

Turning southward is the river Cameroons, which has several mouths, but its size has not been ascertained. Then succeed several smaller streams, till we arrive at the Congo or Zaire river, which is very large and rapid, discolouring the sea for a considerable distance, and tearing away large pieces from its banks.

South of the Congo, for about six hundred miles, there are several rivers of a good size; many of which will admit vessels of one hundred tons. After that, for about eight hundred miles, there is not a single stream of fresh water till we come to the Fish river. Then follows the Orange river, which, although it has a considerable length of course, does not discharge much water into the sea.

There are several considerable streams in the colony of the Cape of Good Hope, as well as on the east coast of Africa, the largest of which is the Eramo or Zambese, which has a course of about one hundred and eighty leagues. The rest are smaller, but none of these are well known, though many of them are large and deep at their entrances.

The Decra river, which runs into the Indian ocean to the north of the equator, is very large at its mouth, and is supposed to take its rise in the mountains south of Abyssinia. Beyond this there are no rivers of consequence till we reach the Nile, and indeed it is not known that there is a single stream of fresh water discharged into the Red Sea.

Such is the continent newly opened : for, we must call Africa a closed world to us, until the discovery of the connexion of the Niger with the ocean. Such are the means of access given to us, now that we have purified our hands of the abomination of man-selling, and that we are masters of that most extraordinary means for defying tide and storm which steam has given.

[The writer of the foregoing Sketch, taken from the Cape Literary Gazette, has entirely overlooked the Settlement of Liberia, near Cape Mensurado, composed of emancipated Africans. The excellent system of effecting the civilization of these people, by the aid of their own countrymen, belongs entirely to the Americans, and is calculated to crown with the most complete success, the continued efforts of our government to put a stop to the Slave Trade. We consider it as the most admirable method of effecting these objects, that has ever yet been devised by man.—Ed.]

V. LINES ON THE WINDS.

THE following beautiful lines, the production of Miss Gould, an American lady, combine purity of sentiment and religion, with talent and good taste.

We come ! we come ! and ye feel our might,
 As we're hastening on in our boundless flight,
 And over the mountains, and over the deep,
 Our broad, invisible pinions sweep,
 Like the spirit of Liberty, wild and free !
 And ye look on our works, and own 'tis we :
 Ye call us the Winds ; but can ye tell
 Whither we go, or where we dwell ?

Ye mark, as we vary our forms of power,
 And fell the forest, or fan the flower,
 When the hare-bell moves, and the rush is bent,
 When the tower's o'erthrown, and the oak is rent,
 As we waft the bark o'er the slumbering wave,
 Or hurry its crew to a watery grave :
 And ye say it is we ! but can ye trace
 The wandering Winds to their secret place ?

And whether our breath be loud and high,
 Or come in a soft and balmy sigh,
 Our threatenings fill the soul with fear,
 Or our gentle whisperings woo the air
 With music aerial, still 'tis we,
 And ye list, and ye look ; but what do ye see ?
 Can ye hush one sound of our voice to peace,
 Or waken one note, when our numbers cease ?

Our dwelling is in the Almighty's hand ;
 We come and we go at his command.
 Though joy or sorrow may mark our track,
 His will is our guide, and we look not back ;
 And if, in our wrath, ye would turn us away,
 Or win us in gentlest air to play,
 Then lift up your hearts to Him who binds,
 Or frees, as he will, the obedient Winds !

VI. *An Investigation of the Currents of the Atlantic Ocean, and of those which prevail between the Indian Ocean and the Atlantic.*
By the late Major JAMES RENNELL, F.R.S. J. G. & F. Rivington. London.

To define in detail the various currents of the ocean, and to discover the infinity of secret causes which are incessantly producing them in every clime and in every season, is indeed an almost overwhelming task. Such an undertaking, considered in all its various relations between the *means* employed and the object to be attained, is surrounded by difficulties of no ordinary kind; and to arrive at any satisfactory results in it, demands a share of deliberate perseverance that falls to the lot of few to enjoy.

The means by which such investigation must be made are very different in the present day, compared with those of years gone by. The rapid strides that navigation has of late years made through the progressive advancement of the chronometer to its present perfect state—the splendid discovery of the existence of a deranging force acting on the compass more or less in every vessel, an element which is now included among the calculations of every careful navigator—and the numerous improvements that have been successively contributed by mechanical skill,—all these have served to render navigation a distinct art from that which was practised down to a few years ago, and enable us to look with some degree of confidence on those differences between the actual and supposed position of a ship, which are attributed to the effects of currents. It is quite clear, that until navigation had attained this elevated station among the arts and sciences, nothing absolutely conclusive could be deduced respecting currents, although much might have been inferred of material assistance to the navigator. This state of things was clearly seen by the late Major Rennell; but, undeterred by those impediments which the imperfect state of the art, he well knew, would oppose to his success, he commenced the task he had set himself, and, during many years of his useful life, it occupied much of his thoughts and attention. He has left it incomplete, and in that condition it must long remain; but his share of work, in this wide and unbeaten field, has been carefully collected and preserved by the dutiful hand of a surviving daughter,* who, happily impressed with its value and importance to navigators, has now placed it within their reach: and, assuredly, those who have the safety of their ships at heart, when traversing

“The wide expanse of Ocean’s bed,”

would do well to consult the ample stores of information which it contains.

This work is purely one of reference; it is not to be merely read

* Lady Rodd.

and thrown aside. We will give the purport of it in the author's own words—

“The present work,” he says, “is confined to the principal streams of current in the north and south Atlantic Oceans; and those which pass between the Indian and South Atlantic Oceans, round the Cape of Good Hope: together with the regions of the trade-winds in the two Atlantics; showing the changes that take place in the different parallels and seasons; a most important point of knowledge to such as are strangers to that navigation, and may expect to find the trade-winds more regular.”

To this we add, that it also contains an account of the Gulf Stream, written at different periods, the whole being illustrated with charts.

So comprehensive a work as this would lead us far beyond our prescribed limits to discuss *seriatim*; we must therefore content ourselves with assuring navigators, that every line of it concerns their interests. We have, however, selected for our own pages the author's explanation of the effects produced at the junction of two running streams, with his own illustration of it, which we consider both interesting and instructive.

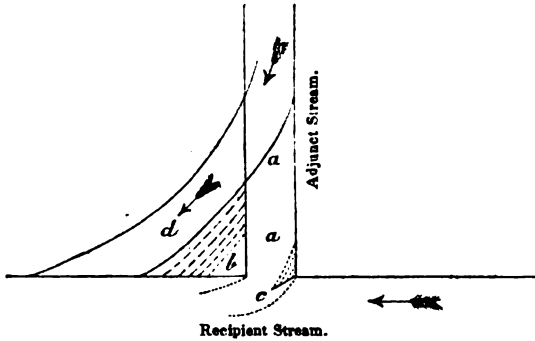
“The point of junction of two rivers (or of a river with the sea, provided that the sea has a predominant stream of current,) will always form an *acute angle*, if the soil, through which they run, be not of a texture firm enough to resist the corroding power of the stream; but composed of alluvial matter, deposited by one, or both of the waters; as is ordinarily the case. This point of junction may be either *firm alluvial land*, or a *bank of sand or mud*, under water; as the case may happen. And, finally, the acute angle of junction will always point in the direction of the stream of the *recipient water*; be it a river or the sea.

“The reason of this is, that two streams, at their confluence, have a natural tendency to *slide* into each other, as the easiest mode of effecting their junction; and were they, either by reason of the natural solidity of their banks, or by artificial means, compelled to join at right angles, or at a very large angle, the meeting of their waters, in a case where they had any degree of rapidity, would produce an agitation, that would prove injurious to their banks, and inconvenient to the navigation.

“For the sake of illustration, let it be supposed that a small river is conducted artificially into a larger one, (or into a sea which has a current along shore,) through a *cut* made through the alluvial soil; and the angle of junction to be very large, or approaching to a right angle; and without any artificial aid, to keep it in that state; the following train of consequences would ensue. (It is to be supposed, of course, that the recipient river had its bed previously enlarged, to receive the other, in order to prevent floods.)

“The first effect would be, that the head of the *adjunct* river, entering with an almost perpendicular course, into that of the *recipient*, would meet with so much resistance from it, that it would be partly beaten back, and compelled to seek its way along the bank of the recipient river. This bend in its course, would induce such a pressure on the bank, at the *lower* angle of junction, as would soon wear it away; and an *oblique course* of approach, of the whole body of the adjunct stream, would commence. In the mean time, a *triangular space of still water* would be formed between the *original* upper angle of junction and the *new* one, occasioned by the obliquity of course: and

this *still water*, as is its nature, would let drop the mud and sand which it had held suspended whilst in motion; and thus begin to form a *triangular bank*, of the same shape and extent.



a Artificial cut, through alluvial ground.

b The angle of the bank first worn away.

c The commencement of a triangular bank formed by the *still water* above the point of junction.

d Progress of the adjunct stream, towards a more permanent junction.

“Here then the operation is commenced in all its parts: and the *triangular bank*, by its being constantly on the increase, will force the adjunct stream to borrow, still more and more, on its opposite bank; which will gradually wear away, until the *angle of junction* of the two waters becomes so acute, that the adjunct stream no longer meets with any resistance from that of the recipient; but may be said to *slide into contact* with it. This then, is the *natural state* of the junction of streams: but after all, the point of junction will, although almost imperceptibly, move downwards; because the *triangular bank* must continue to receive additions, if left to itself. Mean time, the body of it rises by the continual depositions above the surface of the water, and becomes firm alluvial land; its *apex* being the point of junction of the two waters; and its *direction*, of course, the same with that of the stream of the recipient water.

“When two streams that are nearly equal to each other, in respect of bulk, and of velocity, join; each of them, as it were, asserts *its own rights*; and the collective stream takes a direction, which is generally a mean between those of the two streams, whilst they remained in a separate state. And in like manner, the falling in of a stream that bears any proportion to the recipient river, will occasion a proportionate determination of the collective stream, towards the line of the former course of the adjunct.

“It will be recollected, that all that was meant to be said here, applies to the courses of streams through alluvial ground: and also to such as have some degree of velocity.”

We look on Major Rennell's work as the great foundation stone of a structure, which, by a concise and methodical arrangement, with the additional results of future observation, will become a great acquisition to navigation, and we expect to see it hereafter appear in the shape of current charts.

VII. ADMIRALTY COURT DECISIONS. No. I.

BOTTOMRY CASE.—Cognac, David Ewen, Master, from Charente to London, in December, 1831.

Admiralty Court, February 15, 1832.

THIS was a question of considerable importance in respect to bottomry bonds. The Cognac, with a cargo of brandy and seeds, from Charente to London, sustained damage through stress of weather, in December, 1830, and put into La Flotte, in the Isle of Rhé, where the cargo was unladen, in order to repair the damage. The master being without resources to pay the expenses, borrowed of Messrs. L'Hernitte, Marsillac, and Co., of Rochelle, the sum of 24,170 francs on bottomry, the bond bearing a premium of 20 per cent. On the arrival of the vessel in London, the owners refused payment of the bond, on the ground of the exorbitant interest, and that some of the items included, particularly the seamen's wages, were not properly the subject of a bottomry security. On a reference to the registrar and merchants, they disallowed the sum of 1265 francs, the seamen's wages, reduced the commission by confining it to the amount of charges and disbursements, instead of the value of the cargo, and cut down the premium from 20 per cent. to 12½ per cent.—When the report came before the Court, it was contended, on the part of the bondholder, that money could be obtained at no smaller premium in that part of France at that period; that it was the constant practice there to charge commission on the value of the cargo; and that the wages of the seamen were necessary payments, in order to enable them to purchase clothes, &c. On the other hand, it was contended, that no wages were due till the completion of the voyage, and therefore wages could not be included in a bottomry bond; that the custom of charging commission on the cargo was extremely objectionable, and that the interest was exorbitantly high, since the insurance would not have exceeded 1 per cent.

JUDGMENT BY SIR CHRISTOPHER ROBINSON.

This is a question relating to the reduction of the premium of a bottomry bond, under the following circumstances:—

The ship, belonging to persons in the north of England, was chartered to go to Charente, in France, and bring a cargo of brandy to London. The brandy was laden, and the ship sailed on the 25th of December, 1830, and met with bad weather in the Charente river. The storm continued when she got out to sea, and she became leaky, and was obliged to put into the Isle of Rhé, which is not far from the mouth of that river. The cargo was unladen and warehoused, and the ship surveyed under the superintendance of Mr. Dechereuz, who had been adopted by the master as the ship's agent. Great repairs were found to be necessary, and were accordingly effected in the months of January and February. In March, the cargo was re-shipped. The vessel sailed in the latter end of that month, and arrived in London in April.

In order to discharge the expenses which had been incurred at the Isle of Rhé, the master took money on bottomry to the amount of 28,000 francs. The expenses amounted to about 18,000 francs, and a sum of 6000 francs was charged as a commission of 5 per cent. on the value of the cargo; making up the total sum of 24,000 francs, for which the bond was given. When the bond was put in suit in Court, the payment was resisted, and the parties, by a private minute of Court, but without direction from the Court, agreed to refer the

accounts generally to the registrar and merchants, to report on the premium and the several charges. The report of the registrar and merchants has disallowed a sum of 7½ per cent. on the premium, a sum of 1200 francs paid as 2 months' wages to the master and crew during their detention, in addition to their subsistence, and the commission of 5 per cent. charged by the agent on the value of the cargo, allowing a commission of 5 per cent. instead of 3 per cent. on the repairs of the ship, and the other expenses. And an objection to that disallowance being taken on the part of the bondholder, it is for the Court to express what it considers to be the principle of law applicable to the several points.

In the act on petition, the owners rely principally on the report, and allege, that it was made on a full hearing of every thing that could be advanced, and that the Court has the power of reducing exorbitant charges, and that the disallowances were properly made. On the other hand, it is alleged, that the money was advanced by the lender on a contract perfectly fair; that money could not be obtained at a lower premium, owing to the disturbed state of commerce in France, and the scarcity of money, and also on account of apprehensions that were entertained, at that time, of the breaking out of hostilities between the two countries. In the argument, a higher principle has been advanced, and it has been contended, that although there may have been some few instances in which the premium has been reduced, in cases between British subjects, this Court has no authority to disturb the terms of the agreement between the parties in a case like the present, relating to a contract of this description in a foreign country, on which the foreign merchant has lent his money with perfect good faith; that he is not answerable for the application of the money, and that the Court has not authority to reduce the premium on a bottomry bond, unless specifically affected with fraud and collusion, which must be shewn, and proved in a clear and distinct manner.—This is almost a denial of the jurisdiction of the Court, which it is proper I should notice *in limine*; and I will take this opportunity of stating what I conceive to be the authorities of law on this subject.

In the "Zodiac," my predecessor held that such a power must exist in principle, though it had not been often exercised, and he did not see reason to apply it in the case then under consideration; and I conceive there is no want of authorities for such a practice. The French writers generally hold this contract to be free from all restraints proceeding from the laws against usury, and to depend only on the agreement of the parties. But this is not to be understood without limitations; for it is still subject to the restrictions imposed on all contracts by the principles of good faith. The chapters in Pothier, (vol. iii. p. 77,) Valin, (vol. ii. p. 3,) and Emirigon, (vol. ii. p. 306,) are very full in commenting on the article in the penal code relating to bottomry and *respondentia*. And I must here observe, that these two classes of cases are very similar, and are so treated with very little discrimination, in countries where contracts of responsibility still exist. In this country, that description of bottomry has been disused, (19 Geo. II. c. 37,) and therefore we are not so much in the habit of illustrating the one by the other. But if it be considered that *respondentia* bonds are entered into on far more advantageous terms, between the contracting parties who know each other, and may be able to judge for themselves of the state of the money market, and of the risk and profits on which money so employed might be advanced, whilst in bottomry the owner is usually ignorant of all that passes, and the master has no other authority to pledge his property, than what is derived from the necessity in which he is placed: the general principles on which courts of justice have thought it reasonable to give relief against extortionate bargains in the former class, are as fit to be entertained and applied, in proper cases, for the protection of the property of owners that may be so exposed

by the accidents of navigation, to a responsibility arising from the contracts of a master so clothed only with a virtual and limited power of acting for them, for their benefit, and as far as the necessities of the case may require. With this qualification, I think I may refer to the principles that have been held distinctly with regard to respondents' bonds, as authorities equally necessary to be applied to cases of this description. Mr. Emerigon cites, without disapprobation, a passage from an older Italian writer, to this effect—"that if the premium is excessive, it may be moderated by the judge." And in the Court of Chancery it has been said, "the Court will not assist the obligee of a bottomry bond, when it carries an unreasonable interest." (Eq. Cases abr. 872.) And the reasonableness or unreasonableness of the interest depends upon the risk, 1 Atkins, 341. And in one case, where the vessel had not sailed, the interest was reduced, 1 Vern. 263.

It will be found, indeed, that the power which this Court exercises, in cases like the present, does not depend on any direct authority which it assumes over a foreign contract, but on the principle common to all courts, which restrains them from lending their aid to enforce contracts essentially vicious, or tainted with fraud or extortion. This is the reasoning of the Court in the cases I have referred to. In the case of "Chesterfield and Janson," 1 Atkins, 341, Lord Hardwicke discusses, at much length, the effect of fraud or extortion, and assimilates them together:—"To take advantage of another man's necessity is equally bad as taking advantage of his weakness, as in such a situation he is as incapable of making a right use of his reason as in the other." And unreasonable bargains have been construed fraudulent, and fraud may be inferred from circumstances, and the necessity of the person at the time. When it is admitted, therefore, that fraud or collusion might justify the interference of this Court, we must take those terms with the extension given to them in other Courts; and if this Court be required to enforce contracts of this kind at all, it must be on such principles as equally demand it, (for it is a court of equity,) and without which neither equity nor justice would be done.

We have, then, I think, sufficient authority for the exercise of this jurisdiction, on the same principle, in all cases, foreign as well as domestic. It cannot be said, therefore, that there is any surprise on foreign merchants in the application of such principles; and it must be understood, as they do undoubtedly understand, that if they require the aid of this Court to enforce contracts made intentionally to be enforced here, such aid can only be afforded according to the principles which guide its proceedings, and without which it would be an instrument of fraud and rapine, rather than the dispenser of justice. I have said thus much as to the power and authority of the Court, to prevent any misunderstanding on a point of so much importance; and I now proceed to what is the more immediate question in this case—how far that power ought to be exercised in the several articles that are in issue in this report.

The premium was reduced from 20 per cent. to 12½ per cent., on a calculation, as I am informed, that after an allowance of 2½ per cent. for insurance and the expenses of effecting it, 2½ for agency to receive and remit, and 2½ for ordinary interest for six months, there remained a profit of 5 per cent. for the sea-risk; and the surplus was reduced as excessive. I will not take upon myself to say that this calculation might not be, under some circumstances, reasonable and liberal; but I am to examine the contract as it stands, with reference to a particular time, and to the special circumstances under which it was formed. It is described as a high premium in the bond, and the reason assigned in the correspondence is, that money could not be obtained at a lower premium, owing to its scarcity in France, and the disturbed state of the country, and the apprehension of hostilities between the two countries.

, On a reference to the public journals of that time, I find the representation to be confirmed by the daily news, and by the state of the funds both of this country and of France. If such a cause really existed, it is reasonable to suppose it might operate on the minds of the parties, and I cannot go the length of saying that the fairness of the transaction does not very materially depend on that consideration. The act on petition alleged that communications had been made to the owners in London, or their agents, of all that was passing in France, and that correspondence has since been brought in. It appears from it, that M. Dechereuz duly informed the owners, on the 29th of December, of the accident, and, in January and February, repeatedly urged on them the expediency of providing funds in London, advising them of the sums required, and of the impossibility of obtaining money in France at a less premium than 20 per cent. The owners here took no measures till, in the month of March, instructions were given to a house at Rochelle to procure funds, and the answer to that letter of the 16th March advised them, that the money had been taken on bottomry at 16 per cent. This appears now not to have been correct; but the observation which I found upon it is, that it seems to have excited no remark as to the exorbitant rate of such interest, though much higher than the rate allowed in the report. Surely, these facts tend strongly to exonerate the agent and the lender from any imputation of clandestine collusion with the master. They supply the best proof which the Court can have of the fairness of their conduct, and perhaps they go further, and furnish some test of the state of the money market both in England and France; for, although it might be difficult for the different owners and insurers to adjust their several shares in the funds required, it should be remembered that money might have been raised on bottomry in London as well as in France; and if it was so raised at a lower interest, it may be inferred, that the terms of this bond were justified by the circumstances of the times. In such case, how can I say that the bond is effected without fraud or collusion, or the vice of extortion? Though I might have expected that money would have been advanced at a lower rate, and particularly when I see that in the *Gratitudine*, in time of open war, the premium between Lisbon and this country was only 16 per cent., I cannot act on that supposition, to the effect of saying that the premium actually stipulated for in this case was excessive, so as to authorize this Court, which can only act on clear and indisputable grounds, to reduce the rate. Considering the caution with which it behoves the Court to act in such questions, I cannot venture to form any such conclusion.

I therefore overrule the report of the registrar and merchants on this point. In respect to the charge of 5 per cent. on the value of the cargo, I shall not enter into the alleged custom of France on this point, as the customs of merchants are not always conformable to strict principle. It is manifestly a very high charge, not limited to the necessities of the case, and on that ground it is not capable of being sanctioned and allowed by this Court. In the *Gratitudine*, (3 Adm. Rep. app. p. 32,) I perceive the interest at per cent. was charged only on the advances. Whatever may be the reliance of foreigners on their own customs, they can only obtain by the aid of this Court such relief as is compatible with the principles of law admitted here. The registrar and merchants have acted in conformity to the principles which have always guided the decisions of this Court, and I confirm that part of their report. I confirm also the disallowance of wages paid before the termination of the voyage, and in addition to the subsistence allowed during the detention, on the ground that it was a premature payment that might never become due; and if ever paid in this form, might fall, as it has done, on the owners of the cargo, who are not properly liable to it.

VIII. A MEMOIR OF THE LATE CAPTAIN PETER HEYWOOD, R.N.
with Extracts from his Diaries and Correspondence. By
 EDWARD TAGART. London. Effingham Wilson.

THERE is not a more grateful task in the duty of a journalist, than that of awarding the tribute of admiration to departed worth. It has been observed, by a highly talented author, that, "until the warm feelings of surviving kindred and admiring friends shall be cold as the grave from which remembrance vainly recalls their cherished forms, invested with all the life and energy of recent existence, the volumes of their biography must be sealed. Their contemporaries can only expect to read their eloge." That of Heywood's, the subject of this memoir, was not so: his eventful life corresponded well with the period in which it was passed, was too full of interest to be sealed from the world, and, accordingly, long before it was terminated, his contemporaries had read it, and had read in it his just eloge.

Had we named the volume before us, we should have called it 'a biographical memoir,' for such it assuredly is, and one of more than ordinary interest. The author of it had not long been known to Captain Heywood, which must be regretted; for, to use his own words, "he was one of those richly-endowed beings, with respect to whose minds, every succeeding interview impresses upon you the conviction, that there still remains many an undiscovered vein of valuable ore to become the prize of some further acquaintance." Heywood was one of these. The dearly bought experience of his early career in the navy, gave a tone of vigour and firm decision to his character, which marked his progress in after life, and rendered him one of the brightest ornaments of his profession. He who, by the ill effects of a long series of misgovernment, and, to qualify it most, of misunderstood discipline in his commander, had innocently drawn on himself the severest sentence of a court-martial while yet a stripling, received afterwards the thanks of the Admiralty for his services, and the repeated acknowledgments of British merchants, for the solicitude with which he watched over their interests. Had the author of his 'memoir' known more of such a man, he would have been enabled to give to the world more than the mutiny of the *Bounty*, Marshall's *Naval Biography*, the *United Service Journal*, and even family records could afford him; he would have obtained a deeper insight to the events passing in his mind, and would have discovered more veins of that 'valuable ore' with which it was enriched. The reader will find from the following beautiful lines, that there is still much of novelty in the work before us; and as every one is familiar with the principal events of Captain Heywood's life, we have selected them as a sample of the rest. They were written by his sister, and well portray the anxious state of her affectionate mind.

“On the tedious and mournful Absence of a beloved BROTHER, who was in the BOUNTY with Captain BLIGH at the Time of the FATAL MUTINY, which happened April 28th, 1789, in the South Seas, and who, instead of returning with the Boat when she left the Ship, staid behind.

“Tell me, thou busy, flatt’ring Tell-tale, why—
 Why flow these tears—why heaves this deep-felt sigh ?
 Why is all joy from my sad bosom flown,
 Why lost that cheerfulness I thought my own ?
 Why seek I now in solitude for ease,
 Which once was centred in a wish to please,
 When ev’ry hour in joy and gladness past,
 And each new day shone brighter than the last ;
 When in society I loved to join ;
 When to enjoy, and give delight, was mine ?
 Now—sad reverse ! in sorrow wakes each day,
 And grief’s sad tones inspire each plaintive lay :
 Alas ! too plain these mournful tears can tell
 The pangs of woe my lab’ring bosom swell !
 Thou best of brothers—friend, companion, guide,
 Joy of my youth, my honour, and my pride !
 Lost is all peace—all happiness to me,
 And fled all comfort, since deprived of thee.”

“Though guiltless thou of mutiny or blame,
 And free from aught which could disgrace thy name ;
 Though thy pure soul, in honour’s footsteps train’d,
 Was never yet by disobedience stain’d ;
 Yet is thy fame exposed to slander’s wound,
 And fell suspicion whispering around.
 In vain—to those who knew thy worth and truth,
 Who watch’d each op’ning virtue of thy youth ;
 When noblest principles informed thy mind,
 Where sense and sensibility were joined ;
 Love to inspire, to charm, to win each heart,
 And ev’ry tender sentiment impart ;
 Thy outward form adorn’d with ev’ry grace ;
 With beauty’s softest charms thy heavenly face,
 Where sweet expression beaming ever proved
 The index of that soul, by all beloved ;
 Thy wit so keen, thy genius form’d to soar,
 By fancy wing’d, new science to explore ;
 Thy temper, ever gentle, good, and kind,
 Where all but guilt an advocate could find :
 To those who know this character was thine,
 (And in this truth assenting numbers join,)
 How vain th’ attempt to fix a crime on thee,
 Which thou disdain’st—from which each thought is free !
 No, my lov’d brother, ne’er will I believe
 Thy seeming worth was meant but to deceive ;
 Still will I think (each circumstance though strange)
 That thy firm principles could never change ;
 That hopes of preservation urged thy stay,
 Or force, which those resistless must obey.

If this is error, let me still remain
 In error wrapp'd—nor wake to truth again!
 Come, then, sweet Hope, with all thy train of joy,
 Nor let Despair each rapt'rous thought destroy;
 Indulgent Heav'n, in pity to our tears,
 At length will bless a parent's sinking years;
 Again shall I behold thy lovely face,
 By manhood form'd, and ripen'd ev'ry grace;
 Again I'll press thee to my anxious breast,
 And ev'ry sorrow shall be hush'd to rest.

“NESSY HEYWOOD.

“*Isle of Man, Feb. 25th, 1792.*”

Our limits must apologize for the brevity of our notice.

This is a work of great interest; a memoir of Heywood could not be otherwise. The principal events of his life, which were already recorded in history's page, have been collected, and receive additional interest from the numerous private letters by which they are now accompanied.

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE, AND ART.

REPORT OF THE ASTRONOMICAL SOCIETY.

(Concluded from page 433.)

APPENDIX,

CONTAINING A LIST OF THE ARTICLES PROPOSED TO BE INSERTED IN THE NAUTICAL ALMANAC.

N.B. Those *articles* which are now introduced for the first time (that is, which do not form any part of the Nautical Almanac or its Supplement for 1830, or of the Specimen for 1833) are printed in Italics: and the same mode is adopted to denote the *alterations* which have been made in the *extension of the computations* of the other articles. By this method, the additions and alterations proposed may be readily distinguished.

The use of *apparent* time to be abolished in all the computations, except in those immediately connected with the sun's transit.

The day of the week, repeated as often as convenient.

_____ month, on every page

_____ year (or days elapsed since Jan. 1st.) in numerical order.

The fractional part of the year, for every such day.

Equinoctial time for every day in the year.

Mean time of the transit of the first point of Aries, to two places, for every day.

SUN'S	{	Right Ascension in time (with <i>hourly motion</i>), to two	} at the time	
		places,		of Sun's
		Declination (with <i>hourly motion</i>), to one place, . . .			transit.
Sidereal time of semidiameter passing meridian, to two				
places,				
Equation of time (with <i>hourly differences</i>) to two places, . . .				

SUN'S { *Right Ascension, to two places,*
Declination, to one place,
Longitude, to one place,
Latitude, to two places,
Semidiameter, to one place, } at
 mean
 noon.
 Sidereal time, to two places,
Equation of time, to two places,
 Logarithm of radius vector, to seven places,

MOON'S { *Longitude, to one place,*
Latitude, to one place, } for noon
 and
 midnight.
Horizontal parallax, to one place,
Semidiameter, to one place,
Mean time of transit, to the tenth of a minute.
Age, to the tenth of a day, for noon.
R in time, to two places, } for every hour.
Declination, to one place, }
————— with differences for five minutes.
Phases, to the tenth of a minute, } for each lunation.
Perigee and Apogee for the nearest hour, }

PLANETS, *viz.* { *Heliocentric Longitude to one place,*
Latitude, to one place, } for
 every day
 at noon.
Mercury, Logarithm of Radius vector, to seven places,
Venus, Geocentric R in time, to two places,
Mars, Declination, to one place,
Jupiter, Log. dist. from the Earth, to seven places,
Saturn, Mean time of transit, to the tenth of a minute,
Georgian. Horizontal parallax, to two places, } for every fifth day.
Polar semidiameter, to two places, }

PLANETS, *viz.* { *Heliocentric Longitude, } to the nearest minute,*
Latitude, } for every
Geocentric R in time, to the tenth of a minute, } fourth day
Declination, to the nearest minute, } at noon.
Vesta, Radius vector, to four places,
Juno, Log. dist. from the Earth, to four places,
Pallas, Mean time of transit, to the tenth of a minute,
Ceres. Geocentric R in time, to two places, } for one month
Declination, to one place, } before and after
Radius vector, to five places, } opposition,
Log. dist. from the Earth, to five places, } at midnight.

The co-efficients *A, B, C, D*, for every day, at midnight.

JUPITER'S { Eclipses of { in mean and sidereal time, to one place.
 SATELLITES } diagrams for shewing the place at that time.
 } Contact with the planet, in sidereal time, } to the nearest
 } Contact of shadows with the planet, in do. } minute.
 } Configurations.

LUNAR { from the Sun and the nine principal fixed stars, } for every third
 DISTANCES { and from Venus, Mars, Jupiter, and Saturn, } hour.
 } with the proportional logarithms of the differences, annexed.

Apparent obliquity of the ecliptic, to two places, . . . }
 Parallax of the sun, to two places, } for every
 Aberration of the sun, to two places, } tenth day.
 Equation of equinoctial points in longitude, to two places, }
 _____ in \mathcal{R} , to two places, . . . }

Mean longitude of Moon's node, to the tenth of a minute, }
 Mean obliquity of the ecliptic, for January 1st, } at the bottom of the page.
 Mean daily motion of the moon's node, . . . }

ECLIPSES. } Solar, with the line of the moon's umbra, diagrams, &c.
 { Lunar.

Predicted Occultations (visible at Greenwich) of planets and fixed stars to the sixth magnitude inclusive, in mean and sidereal time, to the nearest minute; with the angle from the vertex, and also from the most northern point of the moon's disc.

Elements for predicting such occultations of the planets and fixed stars to the fifth magnitude inclusive, as may be visible in any habitable part of the globe; with the limits of latitude annexed.

The apparent places of the stars on the days of occultation to be given, in both cases.

Apparent places of the fixed stars (100 in number) for their time of transit:

_____ α and δ Ursæ Minoris, for every day;
 _____ the remainder for every tenth day, with differences annexed;

Mean places of the same at the beginning of the year, in a separate list.

A list of Moon-culminating Stars, continued within four days of new moon: the apparent \mathcal{R} of the stars to two places, and the mean declination to the nearest minute. Also the

Moon's { \mathcal{R} in time, of her bright limb, to two places, } for upper and
 { Variation in ditto for one hour of longitude, } lower culmination
 { Sidereal time of semidiameter passing meridian, to two places, . . . }
 { Declination, to nearest minute, for upper culmination.

conjunctions (in \mathcal{R}) of the planets with { the moon.
 { certain fixed stars.
 { each other.
 with difference of declination to the nearest minute.

time when the planets are { in Quadrature.
 { in Conjunction.
 { in Opposition.
 { in their Perihelion.
 { in their Aphelion.
 { in their Nodes.
 { stationary.
 { at their greatest heliocentric Latitude.
 { at their greatest Elongation (with amount.)

A LIST OF PHENOMENA, containing

time when the Sun is in { Perigee.
 { Apogee.
 time of the greatest brilliancy of Venus.
 time of the maximum and minimum of the light of variable stars.
 time of the maxima of the Moon's libration.
 notice of { transits of Mercury.
 { predicted Comets.
 { any other remarkable phenomena.

Elements for finding { *the geocentric appearance of Saturn's ring.*
 { *the illuminated portions of the discs of Venus and Mars.*

TABLES { *for the correction of second differences, in Lunar distances.*
 { *for determining the Latitude by the pole star, out of the me-*
 { *ridian.*
 { *of the Longitude and Latitude of the principal Observatories.*
 { *of the time of high water at London Bridge.*
 { *for finding the time of high water at the principal ports.*
 { *of Errata discovered in logarithmic and other tables of repute.*

Notice of newly determined positions, magnetic variations, &c. &c.

Preface, to contain an account of *all* the Tables used in *every* computation;
 and a notice of any *Equations omitted*, or *new Corrections* applied.

Cycles, remarkable days, moveable feasts, law terms, &c., to be prefixed.

Table of Contents.

(Signed)

J. SOUTH, *President.*

NAMES OF THE COMMITTEE.

- | | |
|---|---|
| <ul style="list-style-type: none"> *Professor Airy, Right Hon. Lord Ashley, *C. Babbage, Esq., *F. Baily, Esq., P. Barlow, Esq., *Capt. F. Beaufort, R.N., Capt. W. F. Beechey, R.N., Lieut.-Gen. Sir T. M. Brisbane, K. C. B. Right Rev. Bishop of Cloyne, Lieut.-Colonel Colby, R. E., A. De Morgan, Esq., Hon. Capt. Dundas, R. N., Davies Gilbert, Esq., P. R. S., Dr. Gregory, Capt. Basil Hall, R. N., Professor Hamilton, T. Henderson, Esq., *J. F. W. Herschel, Esq., Capt. Heywood, R. N., Capt. James Horsburgh, | <ul style="list-style-type: none"> Rev. Dr. Inman, Capt. Kater, Dr. Lee, J. W. Lubbock, Esq., T. Maclear, Esq., Rev. G. Peacock, Rev. Dr. Pearson, *J. Pond, Esq., E. Riddle, Esq., Professor Rigaud, *Rev. Dr. Robinson, Rev. R. Sheepshanks, Capt. Shireff, R. N., Capt. W. H. Smyth, R. N., *Sir James South, <i>President</i>, *Lieut. W. S. Stratford, R. N., *Professor Struve, Dr. Tiarks, E. Troughton, Esq., J. Wrottesley, Esq. |
|---|---|

N. B.—Those Members, to whose names an asterisk is prefixed, formed the Sub-Committee.

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

The sad effects of the late gales are too evident in our table of wrecks. The loss of British shipping, lives, and property, has been greater in the past month than in any since the commencement of our register.

A notice has been given by the Trinity House of two new lighthouses being erected at Burnham, in a proper line of direction for leading vessels into the River Perrott—Port of Bridgewater—Bristol Channel.

We are glad to find that strenuous exertions are making to equip an Expedition, with the object of ascertaining the situation of Captain Ross, who left this country in the Victory steam-boat in the summer of 1829, to effect the long-sought north-west passage into the Pacific Ocean. A meeting has been recently held in London by the friends of Captain Ross, at which it was agreed that he and his companions might be still alive, and may be extricated from their perilous situation by efforts to be made for their relief. This conclusion is founded on the extent of his preparations, which were calculated to meet the wants of his party for three years—on the quantity of stores which it is presumed he would find untouched in the wreck of the *Fury* in Prince Regent's Inlet—and on the fact, that the crews of two Hudson's Bay vessels who were cast away on Marble Island in 1769, subsisted nearly three years afterwards on what they could find, as related by Hearne, and quoted by Mr. Barrow in his *Chronological History of Arctic Voyages*. His Majesty's Government has consented, on certain conditions, to furnish £2000 towards forwarding the expedition, and the Hudson's Bay Company have given directions to provide boats and pemmican for the party free of expense. Captain Back, who is well known as

the companion of Sir John Franklin in both his expeditions, has volunteered to conduct the undertaking, and proposes to leave London early in February for New York, to proceed from thence, by way of Montreal, to Great Slave Lake, and to descend the Fish River early in August. From this point, Captain Back will be guided in his movements by circumstances, and may probably winter in that part of the world. In order to assist in equipping this expedition, which is denominated the "Arctic Land Expedition," subscriptions are collecting in London, Edinburgh, and Dublin, which will be placed at the disposal of a Committee of Noblemen and Gentlemen, of whom a list is already in circulation. We heartily wish their efforts may be crowned with success in their principal object, as they cannot fail to be productive of the point of geographical discovery.

CHRONOMETERS.—Much has been said of late concerning the excellent performance of chronometers, and we may safely conclude that this valuable machine has now arrived at a degree of excellence which it will require some years to surpass. It must not be inferred from this that the high prices which have been paid for chronometers are necessarily to be kept up. On this subject we shall take some future opportunity of saying a word or two to our readers.

An ingenious person named Roland, residing in London, has invented a method of extending the power of reflecting instruments in measuring large angles. It is applicable both to the **SEXTANT** and **QUADRANT**, and will enable the observer to measure arcs of even greater extent than 180°. In a roadstead, where the horizon is obstructed by the land under the sun, when it is on the meridian, a direct

observation may be obtained with the opposite horizon, instead of having recourse to the old method of the back observation. It will render the common artificial horizon available on land, where the altitude of a heavenly body is too great for the present limits of the sextant; and there seems no reason to doubt, when its accuracy has been established, that the tables of lunar distances in the Nautical Almanack will be considerably extended in consequence. It also renders the quadrant a more useful instrument than before, in surveying.

Naval Gunnery: Excellent System.—A gentleman happened to visit the Vernon lately at Spithead, when the crew were practising at a mark with the guns. They continued firing a length of time, but unsuccessfully, all of their shot falling more or less wide of it. Captain Hastings, who commands the Excellent in Portsmouth harbour, had gone on board, merely for the purpose of witnessing the proficiency of the Vernon's crew; and, watching one of her men pointing a gun, observed to him, 'that shot will strike about forty yards short of the mark.' The gun was fired, and the shot fell as was foretold. On this, Captain Hastings addressing himself to Captain Sir Francis Collier, who commands the Vernon, requested permission for one or two of his men to be called from his gig alongside, to shew the effects of his system. Permission being granted, two of the men were accordingly summoned on board the Vernon, and one was immediately directed to fire at the mark. The man did as he was ordered, and struck the mark without any difficulty. Captain Hastings ordered his other man to do the same, when, accordingly, the second man pointed his gun, fired, and struck the mark likewise. Magic itself could not have been more complete. The men had not been selected on purpose, but were called up as they happened by chance to be the nearest, and their excellent firing called forth the admiration of all who witnessed it.

Paddles of Steam Boats.—Experiments are about to be made at Sheer-
NO. 9.—VOL. I.

ness in the paddles of steam boats. The Carron is fitted with paddle-wheels invented by Mr. Galloway, who fitted those of the *Constance* in 1830. The present alteration consists in two paddle-wheels being fitted on each side of the vessel, placed by the side of each other, the outer one being inclined to the inner at an angle of about eighteen degrees, so that the floats of the wheels enter and leave the water feathered. The wheels diverge sufficiently above, to enable the pilot to stand between the paddle-boxes, and hold much less wind than those of the old construction. The object in view is to do away with concussion and undulation of the water with as little loss of speed as possible.

Our correspondent 'Ocean' will see by our inserting his letter to us, with that which appeared in the *Times* and *Cork* papers, relating to the same subject, that we love fair play.

To the Editor of the *Nautical Magazine*.

SIR, Oct. 4th, 1832.

THE proceedings of the Experimental Squadron, as reported in your last Magazine for this month, are pretty nearly correct; except that a brig named "Water Witch" gave another brig called "Snake" as decided and complete a dressing, both by the wind, before the wind, and off the wind, as any vessel ever yet gave another.

Secondly, I agree with your informant, that "Water Witch" did display some superiority in light winds; superiority enough to beat the whole squadron; but she displayed a much greater superiority in strong breezes, and a head sea, which does not appear to be at all in accordance with the feelings of your informant, whose whole, sole, and only consolation seems to be, that Water Witch "could not stand the head sea that was running;" if she could not, why did not Snake, (after a trial of four hours and a half, with leave to put her guns, &c. below,) come up with her? As for stability, the report of the inclination or heel was a conclusive proof as to the superior stability of Water Witch.

The telegraphic communication alluded to, "that the Water Witch was satisfied with her superiority," was in consequence of a previous signal made to the Admiral before starting that morning,—"that Water Witch intended

leaving the squadron that afternoon for England."

Your informant labours under a dreadful mistake, when he says "Snake" always started to leeward, he intended to say Water Witch, not Snake, as in every trial Snake was invariably on the weather quarter of Water Witch; and if he will take the trouble to recollect, he will remember that in every trial by the wind, Water Witch spared Snake a reef in his topsails, or royals, and flying jib.

The correctness of these statements are well known on board the flag ship.

September 4.

The following trial was made (in the presence of the Board of Admiralty) by the wind under all sail, for eight hours,

on the larboard tack, with a fine breeze from the eastward, which continued steady for seven hours, and during which time Water Witch had considerable advantage over the whole squadron. It afterwards fell nearly calm: the Water Witch being ordered to tack by signal, nearly becalmed, and bowing a short head swell, stood nearly still, while the Vernon coming up two points, with the sea on her quarter, and maintaining the breeze, was enabled to weather the Water Witch a short distance. It must be recollectcd, however, that the Water Witch, at starting, was upwards of a cable's length to leeward of the Vernon. The Snake, at the end of the trial, was about two miles to leeward.

September 5.

Wind, E. by S.; course, W. by N.; rate of sailing, from six to seven knots; length of trial, six hours; under all sail; studding sails on both sides, below and aloft.

Ships of the squadron.	Distance from Water Witch at starting.	Bearing from Water Witch at starting.	At conclusion of trial.	Distance gained by Water Witch.
Vernon....	$\frac{1}{2}$ mile	N. by E.	E. by N. ..	2 miles
Castor	$\frac{1}{2}$ mile	N. ..	E. $\frac{1}{2}$ S. ..	3 $\frac{1}{2}$ —
Stag	$\frac{1}{2}$ mile	E. by S.	E. by S. $\frac{1}{2}$ S	5 —
Donegal ..	5 miles	W. by N.	E. by S. ..	12 —
Snake	500 yards	N. by W.	N. E. $\frac{1}{2}$ E	2 —

September 6.

Wind, E. by S.; course, S. S. E.; Scilly bearing E. N. E. fifty miles; length of trial, four hours; the squadron carrying double-reefed topsails and top-gallant sails.

Vernon ..	300 yards	N. N. W.	N. by W. $\frac{1}{2}$ W....	3 miles
Snake....	300 yards	N. N. E.	N.	1 —
Castor....	400 yards	N. by W.	N. W. by N.	4 $\frac{1}{2}$ —

The ships generally in this trial had their hammocks down, some of them their guns run in, and the Snake was ordered by the Admiral to put guns, anchors, cables, and whatever might be deemed an impediment to her sailing,

below; but their stability was not equal to the Water Witch.

BELFAST.

GEORGE PECHELL, Capt. R.N.

London, Oct. 4.

Don Pedro's Squadron.—The following is a correct list of the vessels of which it is composed: Two frigates—Rainha de Portugal, 56; and Donna Maria Segunda, 48. Three corvettes—Amelia, 20; Portuense, 22; and Constitucion, 15. Four brigantines—Vinte etres de

Julio, 20; Conde de Villa Flor, 16; Regencia, 16; and Mindello, 14. Four galliot brigantines—Fayal, 13; Liberal, 9; San Bernardo, 8; and Esparansa, 7. Three galliots—Yela Graciosa, 11; Yela Terceira, 7; and Coqueto, 7.—*Ports Herald.*

NAVAL INTELLIGENCE.

FLAG-OFFICERS IN COMMISSION IN COMMAND OF STATIONS, FLAG-LIEUTENANTS, AND SECRETARIES.

Stations.	Flag-Officers and Commanders.	Rank.	Date of Appt.	Flag-Lieutenants.	Secretaries.
Nore	<i>Vice-Admiral Sir John Poo Beresford, Bart.</i>	a	30 July 30	{ John Wash- ington. }	William Christy
Portsmouth	<i>Admiral Sir Thomas Foley, G.C.B.</i>	b	22 April 30	Charles Gayton ..	James Pinhorn
Plymouth	<i>Admiral Sir Manley Dixon, K.C.B.</i>	c	22 April 30	Matthew Foot ..	Thos. Woodman
Particular Service	<i>Vice-Admiral Sir Pal- teneu Malcolm, K.C.B.</i>	d	9 May 32	Rich. Morgan (a)	Joseph Edye
Mediterranean ..	<i>Vice-Admiral Hon. Sir Hen. Hotham, K.C.B. G.C. St. M. and G.</i>	e	30 Mar 31	Joseph F. Stirling	John Irving
West Indies ..	<i>Vice-Admiral Sir E. G. Colpoys, K.C.B.</i>	f	20 Feb 30	{ Hon. A. W. Monckton. }	Edward Lawes
Halifax and ..	<i>Rear-Admiral Sir Thos. Baker, K.C.B.</i>	g	9 Jan 29	John Bazeley ..	Alexander Kant
Newfoundland South America..	<i>Vice-Admiral Sir John Gore, K.C.B.</i>	h	16 Dec 31	{ Wm. Chesel- den Brown }	Richard Haig
East Indies	<i>Rear-Admiral William Parker.....</i>	i	9 Sept 31	Wm. Hen. Jervis	Richard Halliday
Lisbon	<i>Rear-Admiral Fred. Warren</i>	k	5 Aug 31	Rd. L. Warren ..	John P. Lamey
Cape of Good Hope and Coast of Africa					

THE ROYAL NAVY IN COMMISSION.

(The Packets are not inserted in this List.)

*. S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

- ACTON, 26—Hon. F. W. Grey, July, at Tripoli.
- ÆTNA, S. V. 6—Com. E. Belcher, August, Gibraltar.
- ALBAN, St. V.—Lieut. G. Rabbett, Woolwich.
- ALBERT, 18—Com. J. C. Fitzgerald, Pacific.
- ALFRED, 50—Capt. R. Maunsell, 4th Sept. Syria.
- ALGERINE, 10—Com. Hon. J. F. F. De Roos, 22d Aug. at Bahia.
- ALLIGATOR, 28—Capt. G. R. Lambert, 3d June, Madras.
- ARACHNE, 18—Com. W. G. Agar, 15th Aug. Bay Funday.
- ARIADNE, 28—Capt. C. Phillips, 12th Aug. at Antigua.
- ASIA, 84—Capt. P. Richards. Flag Ship, (i) Oporto.
- ASTREA, 8—Capt. W. King, Falmouth.
- BADGER, 10—Com. G. F. Stowe, June, Mauritius.
- BARHAM, 50—Capt. H. Pigot, 4th Sept. Napol.
- BEACON, (late METEOR.)—Com. R. Copeland, 31st July, sailed for Mediterranean.
- BEAULE, 10—Com. R. Fitz-Roy, at Rio Janeiro, 4th July.
- BELVIDERA, 42—Capt. Hon. R. S. Dundas, 4th Sept. Malta.
- BLANCHE, 46—Capt. A. Farquhar, K. H. C. B. 10th July, Barbadoes.
- BRISK, 3—Lt. J. Thompson, Gold Coast.
- BRITANNIA, 120—Capt. P. Rainier, 9th Sept. arrived at Plymouth.
- BRITON, 46—Capt. J. D. Markland, C. B. Oporto.
- CALEDONIA, 120 — Captain J. Hillyar, Tagus.
- CASTOR, 36—Capt. Rt. Hon. Lord John Hay, Portsmouth.
- CHALLENGER, 28—Capt. C. H. Freemantle, June, Trincomalee.
- CHAMPION, 18—Com. Hon. A. Duncombe, 14th Oct. Sailed for Med. with Ceylon.
- CHARYBDIS, 3 — Lieut. R. B. Crawford, Benin.
- CHILDERS, 18—Commander R. Deans, at Oporto.
- CLIO, 18—Com. J. J. Onslow, Pacific.
- COLUMBIA, St. V. 2—Lt. R. Ede, Mediterranean.
- COLUMBINE, 18—Com. O. Love, 18th Aug. Halifax.
- COMET, St. V.—Sheerness.
- CONWAY, 28—Capt. Eden, Portsmouth.
- CORDELIA, 10—Com. C. Hotham, 4th Sept. Smyrna.
- CRUIZER, 18 — Com. J. Parker, 3d June, Madras.
- CURAÇOA, 26—Capt. D. Dunn, 3d June, at Trincomalee.
- CURLEW, 10—Com. H. D. Trotter, 23 June, in Simon's Bay.
- DEE, St. V.—Com. R. Oliver, Woolwich.
- DISPATCH, 18—Com. G. Daniell, 15th Oct. Sailed for Jamaica.
- DONEGAL, 74 — Capt. J. Dick. Flag Ship. (d) Portsmouth.
- DRUID, 46—Capt. G. W. Hamilton, C. B. June 20th, Pernambuco.
- DRYAD, 42—Capt. J. Hayes, C. B. Exper. Squadron.

- DUBLIN, 50—Capt. Rt. Hon. Lord J. Towns-
end, April, at Valparaiso.
- ECHO, St. V.—Lieut. Otway, Falmouth.
- FALRY, S. V. 10—Com. W. Hewett, surveying
North Sea.
- FAVOURITE, 19—Com. J. Harrison, 6th Aug.
Bonny River.
- FIREFLY, 2—Lieut. J. M'Donnel, Cuba.
- FLAMER, St. V.—Lieut. R. Bastard, Wool-
wich.
- FLY, 10—Com. P. M'Quhae, 31st August,
Jamaica.
- FORRESTER, 3—Lt. W. H. Quin, Chatham.
- GANNET, 18—Com. M. H. Sweney, August,
at Port Royal, Jamaica.
- GRIFFON, 3—Lt. J. Parly, Chatham.
- HARRIER, 18—Com. H. L. S. Vassal, 7th June,
sailed from the Cape.
- HERMES, St. V.—Lieut. R. Bastard, Sept.
at Falmouth.
- HORNET, 6—Lieut. F. R. Coghlan. Sailed
for South America.
- HYACINTH, 18—Com. W. Oldrey, 12th Aug.
Vera Cruz.
- IMOGENE, 18—Capt. P. Blackwood, 3d June,
Calcutta.
- INVESTIGATOR, 16—Mr. George Thomas,
Downs.
- ISIS, 50—Capt. J. Polkinghorne, Flag Ship,
(A) August, Simon's Bay.
- JUPITER, Troop Ship. Mr. R. Easto, 21st
July, Cork.
- KANGAROO, 3—Lieut. J. Hookey, August,
Nassau.
- LARNE, 18, (*late Lightning*).—Com. W. S.
Smith, Portsmouth.
- LEVERET, 10—Lieut. W. F. Lapidge, at
Oporto.
- LIGHTNING, St. V.—Woolwich.
- MADAGASCAR, 46—Capt. E. Lyons, 21st Sept.
Trieste.
- MAGICIENNE, 14—Capt. J. H. Plumridge,
June, at Malacca.
- MAGNIFICENT, 4—Lieut. J. Paget, Port
Royal.
- MALABAR, 74—Capt. Hon. J. Percy, Ply-
mouth.
- MASTIFF, 6, S. V.—Lieut. J. Graves, Archi-
pelago.
- MELVILLE, 74—Capt. H. Hart, June, at
Madras. Flag-ship. (h)
- MESSENGER, St. Transp.—Lieut. B. Aplin,
13th July, Portsmouth. Sailed.
- METEOR, St. V.—Lieut. Symons, 20th July,
Malta.
- MINX, 3—Lieut. J. Simpson, Aug. Jamaica.
- NAUTILUS, 10—Com. Rt. Hon. Lord G. Pau-
lett, Plymouth.
- NIMBLE, 5—Lieut. J. M. Potbury, August,
Havana.
- NIMROD, 20—Com. Lord E. Russell, Cork.
- NORTH STAR—Capt. Hon. G. W. Trefusis,
8th Sept. Left Newfoundland for Halifax.
- OCEAN, 80—Capt. S. Chambers. Flag-ship,
(a) Sheerness.
- ONYX, 10—Lieut. A. B. Howe, Cork.
- ORESTES, 18—Com. W. N. Glascock, Oporto.
- PALLAS, 42—Capt. W. Walpole, 8th Sept.
at Jamaica.
- PEARL, 20—Com. R. Gordon, 11th August,
arrived at Jamaica.
- PELICAN, 18—Com. J. Gape, 15th Sept. at
Corfu.
- PELORUS, 18—Com. R. Meredith, 8th Aug.
Cape.
- PHILOMEL, 10—Com. W. Smith, 23d Oct.
Gibraltar.
- PICKLE, 5—Lieut. E. Stopford, Bahamas.
- PIKE, 12—Lt. A. Brooking, Cork station.
- PINCHER, 5—Lt. W. S. Tulloh, Bahamas.
- PLUTO, St. V.—Lieut. G. Buchanan, Bight of
Benin.
- PYLADES, 18—Com. E. Blankley, 4th July,
Bahia.
- RACEHORSE, 18—Com. C. H. Williams,
21st Aug. at Halifax.
- RAINBOW, 28—Capt. Sir J. Franklin, Knt.
4th Sept. Patras.
- RALEIGH, 18—Com. A. M. Hawkins, 4th
Sept. Patras.
- RAPID, 10—Com. C. H. Swinburne, 30th
July, Malta.
- RATTLESAKE, 28—Capt. C. Graham, Valpa-
raiso, May.
- RAVEN, S. V. 4—Lieut. W. Ariett, 15th Sept.
sailed for Gibraltar.
- RECRUIT, 10—Lt. T. Hodges, Bermuda.
- REVENGE, 78—Capt. D. H. Mackay, Tagus.
- RHADAMANTHUS—Com. G. Evans, Wool-
wich.
- ROMNEY, Troop Ship, Tagus.
- ROYER, 13—Com. Sir G. Young, Bart.,
Portsmouth.
- ROYALIST, 10—Lieut. R. N. Williams,
Oporto.
- ST. VINCENT, 120—Capt. H. F. Seubhouse,
4th Sept., Napoli di Romania. Flag-
ship. (e)
- SALAMANDER, St. V.—Portsmouth.
- SAMARANG 28—Capt. C. H. Paget, 14th Aug.
Left Rio for M. Video.
- SAN JOSEF, 110—Capt. R. Curry, Plymouth,
Flag-ship. (c)
- SAPPHIRE, 28—Capt. Hon. W. Wellesley,
6th Aug. Vera Cruz.
- SCOUT, 18—Com. W. Hargood, Portsmouth.
- SCYLLA, 18—Com. Hon. G. Grey, 4th Sept.
left Napoli for Corfu.
- SEAFLOWER—Lieut. Morgan. 4th Oct. sailed
for Portsmouth.
- SKIPJACK, 5—Lieut. W. Shortland, Ba-
hamas.
- SNAKE, 16—Com. W. Robertson, at Ports-
mouth.
- SOUTHAMPTON, 52—Capt. J. M. Laws, April,
Trincomalee. Flag-ship. (h)
- SPARTIATE, 74—Capt. R. Tait, Ports-
mouth.
- SPARROWHAWK, 18—Com. Currie, act. 22d
August, Halifax.
- SPEEDWELL, 5—Lieut. W. Warren, August,
Jamaica.
- STAG, 46—Captain Sir T. Trowbridge, Ply-
mouth.
- SULPHUR, 8—Com. W. T. Dance, Van
Diemen's Land.
- SWAN, 10—Lieut. J. E. Lane, North Sea.
- SYLVIA, 1—Lieut. T. Spark, Jersey.
- TALavera, 74—Capt. S. Brown, Oporto.
- TALBOT, 28—Capt. R. Dickinson, C. B. 12th
June, Mauritius.
- TRINCCLO, 18—Com. R. Booth, Plymouth.
- TWEED, 28—Com. A. Bertram, Aug., at
Jamaica.
- TYNE, 28—Capt. C. Hope, 30th Sept. Sailed
for South America.
- UNDAUNTED, 46—Capt. E. Harvey, June, at
Mauritius.
- VERNON, 50—Capt. Sir F. Collier, Knt.
Spithead.

VICTOR, 18—Com. R. Russell, 9th Sept., at Newfoundland.
VICTORY, 104—Capt. H. Parker. Flag-ship (b) Portsmouth.
VIPER, 6—Lieut. H. James, off Tagus.
VOLAGE, 28—Capt. Right Hon. Lord Colchester, Portsmouth.
WARSPITE, 76—Capt. C. Talbot. Flag-ship, (g) August, at Rio.
WINCHESTER, 52—Capt. Rt. Hon. Lord W. Paget, August, at St. John's. Flag-ship. (f)
WOLF, 18—Com. W. Hamley, June, at Trincomalee.

ZEBRA, 18—Com. G. L. A. McMurdo, *act.* March, at Otaheiti.

Paid off into Ordinary.

COMET, 18—at Plymouth.
JASEUR, 18—at Sheerness.

Commissioned.

CARRON, St. V.—at Sheerness.
FORRESTER, 3—at Chatham.
GRIFFON, 3—at Chatham.
RHADAMANTHUS, St. V.—at Woolwich.
SALAMANDER, St. V.—at Woolwich.
MALABAR, 74—at Plymouth.
SPARTIATE, 76—at Portsmouth.

The squadron, under Sir Pulteney Malcolm, destined for the Scheldt, is ordered to assemble at Spithead with as little delay as is practicable; it will consist of the Donegal, Spartiate, Revenge, Talavera, and Malabar, of the line, Vernon, Southampton, Stag, Castor, Conway, and Volage frigates, Nimrod, Childers, Rover, Scout, Satellite, Larne, and Snake sloops, and the Rhadamanthus, and Dee, steam frigates.—The Revenge and Talavera are hourly expected from Lisbon.—*Hants. Tel.*

The St. Vincent, has been ordered from the Mediterranean to Lisbon, to join the squadron under Adm. Parker. Sir Henry Hotham is in consequence to hoist his flag in the Burham. The Britannia, 120, Capt. Rainier, C.B., will also sail from Plymouth, in the course of the ensuing week to rejoin Admiral Parker.—*Hants. Tel.*

The Spartiate was taken into dock on 8th October, and was commissioned on the 10th, by Capt. Robert Tait, to bear the Flag of Rear Admiral Sir Michael Seymour, our late Commissioner, as Commander-in-Chief, on the South American station. The Spartiate is already nearly manned, although so recently commissioned.—*Ports. Herald.*

We mentioned in our last number, that Sir John Pechel, one of the Lords of the Admiralty, had paid an official visit during the week to this port, during which he had examined the arrangements on board H.M.S. Excellent, for promoting the science of Naval gunnery. We have now the satisfaction to add, that, in consequence of the favourable report made by Sir John of the proficiency of Capt. Hastings, of that ship, and of the progress made in that important branch of the service by those under his tuition, the Lords Commissioners of the Admiralty have been pleased to signify by letter, in terms of the warmest commen-

dation, their approbation of the talent and ability with which Captain Hastings has conducted the establishment, and of the very credible degree of proficiency which, under his immediate directions and instruction, the officers and seamen gunners of that ship, have attained in the practice of Naval gunnery.—*Ports. Herald.*

Rumour says that Admiral Sir Harry Neale, Bart. G.C.B. will succeed our distinguished Commander-in-Chief, Admiral Sir Thomas Foley, G.C.B., on the expiration of his command, and that Admiral Sir Thomas Williams, G.C.B. will succeed Admiral Sir Manley Dixon, K.C.B. at Plymouth.—*Hants. Tel.*

H.M.S. Southampton, 52, bearing the flag of Rear-Admiral Sir E. W. C. R. Owen, K.C.B. late Commander-in-Chief in the East Indies, Capt. J. M. Laws (acting) arrived on 12th ult. from that station, last from the Isle of Ascension, which she left on the 4th Sept. She brings passengers—Lady E. Owen and domestics, Capt. T. H. Hemmans, of the 75th Regt. W. J. Brown, Second Master, and one private of the 72d Regt. also Com. E. H. Butterfield, late in command of the Brisk, gun-brig, on the Coast of Africa, who embarked at Ascension, and who was recently promoted for his gallant conduct in the Primrose's action and capture of an armed slaver. The Rear-Admiral will strike his flag this day, the Southampton being ordered to prepare for sea with all expedition, to form part of the squadron destined for the Scheldt.—*Ports. Herald.*

H.M.S. Volage, 28, Capt. the Right Hon. Lord Colchester, arrived 6th ult. from the South American station. She left Rio on the 5th of August, and Pernambuco on the 30th of the same month, and has brought home dispatches.—*Ports. Herald.*

H.M.S. Jaseur, 18, Com. A. Sinclair, arrived at Plymouth on the 29th Sept.

from the Cape of Good Hope, having been employed on that station nearly four years. The *Jaseur* left Port Louis on the 24th of June, and brings the news of that island being in open rebellion, with regard to the free inhabitants, owing to the arrival of the New Attorney-General to put in force the obnoxious slave laws lately transmitted from England.—*Ports. Herald.*

H.M.S. *Comet*, 18, arrived at Plymouth on the evening of the 28th Sept. from the East Indies, under the command of the First-Lieutenant, H. P. Peake, her Commander A. A. Sandilands having died on the 12th of June, on his passage home. She left Madras on the 3rd of June.—*Ports. Herald.*

The *Espiegle* has been brought down from Fareham Lake, alongside the *Greenwich*, to be sold out of the service.—*Ports. Herald.*

Two frigates, of 26 guns each, are ordered to be built at Pembroke Yard, to be called the *Cleopatra* and *Carysfort*, and a brig of 16 guns, to be named the *Harlequin*.—*Hants. Tel.*

The *Tyne*, 28, Captain Hope, sailed from Falmouth, on 31st Sept. having embarked the British Consuls, and their suites for the Canaries, Chili, and Peru.—*Hants. Tel.*

Some doubts having existed in the minds of the Lord's Commissioners of the Admiralty, as to the expediency of coppering ships with re-manufactured copper, (or old copper sheets remelted and made up,) an order has been given for one side of the *Spartiate*, to be covered with virgin copper, and the other with re-manufactured metal, in order that the durability of each respectively may be fairly tried.—*Ports. Herald.*

Rear Admiral Sir F. L. Maitland, K.C.B. whose Flag is at present flying on board H.M.S. *Excellent*, is ordered to hoist the same on board the *Mercury yacht*, which is in future to be denominated the *Portsmouth yacht*.—*Ports. Herald.*

H.M.S. *Melville*, 74, Capt. H. Hart, had a fine passage to the East Indies. She arrived at the Cape of Good Hope on the 23d of March. She sailed thence on the 5th of April, and arrived at Trincomalee on the 21st of May, and at Madras on the 1st of June.—*Ports. Herald.*

The *Vindictive* was taken out of dock on Friday last. The peculiar feature in this ship, is a bow of a new construction,

invented by Mr. Blake, (assistant Master Shipwright of this Dockyard,) which combines with the most perfect symmetry of form, the advantage of allowing six guns in a ship of the *Vindictive's* class, to bear on an object right ahead; an advantage important at all times, but incalculably so at a period when the recent improvements in the armament of the stern, renders a corresponding improvement in that of the bow, an object of the highest necessity.—*Hants. Tel.*

The following Midshipmen passed their examination this week in navigation at the Royal Naval College, viz., the Hon. G. F. Hastings, of H.M.S. *Excellent*; Mr. Wm. Thorp, of H.M.S. *Donegal*; Mr. Edmund H. Gunnell, late of H.M.S. *Seringapatam*; Mr. Richard D. White, of H.M.S. *San Josef*; Mr. Poole Gubbins, of H.M.S. *Caledonia*; Mr. John O. Freeland, late of H.M.S. *Rose*; Messrs. John Norman and John Horatio Woolward, both of H.M.S. *Britannia*.—*Ports. Herald.*

A Court-Martial on Captain Alexander Gordon, late of H.M.S. *Athol*, on charges preferred against him by Capt. Hayes, late Commodore on the Coast of Africa, was held on Monday, on board M.M.S. *Victory*, in Portsmouth Harbour.—The Court was composed of Vice-Admiral Sir Pulteney Malcolm, K.C.B. (President,) Rear-Admiral Sir Frederick Maitland, K.C.B. Captains Hyde Parker, Sir Francis Collier, C.B. A. Fanshawe, Lord John Hay, Eden, and Hastings. James Hoskins, Esq. Judge-Advocate. Captain Gordon's professional advisers were Mr. Hunter Gordon, of the Temple, and Mr. Minchin, Solicitor.—The following were the charges:—

First.—“For disrespect, neglect of duty, and un-officerlike conduct, in not waiting upon Commodore Hayes, agreeably with the rules and regulations of his Majesty's service, between the 17th and 20th April, 1831, on joining him at Prince's Island, near the West Coast of Africa, after his return from the duty directed to be performed by his orders, dated Sierra Leone, 14th December, 1830, pretending to be unable to do so, which induced Commodore Hayes to go on board the *Athol* in a friendly way, to see him, after which Captain Gordon visited on board the *Medina*, at the same anchorage, and did not wait upon him, his commanding officer, proposing however to visit him after being invalided.

Second.—“In negligently performing the duty imposed on him by his orders of the 14th of December above mentioned, and for neglecting to make a proper report of the manner in which he had executed the said orders, merely writing a heedless letter, dated nearly

a fortnight before the Atholl arrived at the point of the coast where Commodore Hayes directed in the above orders, the examination and inquiry should terminate.

Third.—“ In un-officerlike conduct, stating in a note addressed to Commodore Hayes, that in the rigid execution of his last order valuable lives had been lost, which he should never cease to regret, when it was a fact that neither man nor boy had died on that service; and Captain Gordon had himself written to Commodore Hayes not three days previously, saying ‘ The health of his ship’s company, having only lost one man since he left Portsmouth, is a proof of good regulation.

Fourth.—“ In making a bargain for a sum of money, and also a half of their bounty and prize money, with two officers next on the Admiralty list, to be paid to him in the event of their promotion being confirmed in the vacancies he would make for them by going home invalided.

Fifth.—“ For-unofficer like conduct in having written a letter, dated the 5th July, 1831, to their Lordships’ Secretary, and stating therein that he was surprised to find that Commodore Hayes had sent his ship, the Atholl, to Fernando Po, where he was quite aware her services were not required; and in stating that the First-Lieutenant and Assistant-Surgeon, and 37 petty-officers and seamen of the Atholl, were detained on board the Dryad, instead of being sent by the Medina to join their proper ship; and stating that Commodore Hayes was waiting at Sierra Leone to purchase and fit out the Dos Amigos as a third tender to the Dryad, and also in untruly stating that Commodore Hayes had appointed Lieut. Ramsay, First-Lieutenant of the Atholl, to the Dryad, without his consent.”—*Hants Telegraph*.

The Court having carefully and deliberately weighed and considered the evidence adduced in support of the said charges, and having heard what the said Captain Alexander Gordon hath alleged in his defence, and having also carefully and deliberately weighed and considered the evidence adduced in support of such defence—The Court is of opinion, that the first of the said charges contained in the said order of the 24th day of September, 1832, hath not been proved, as it appears that the state of Captain Gordon’s health prevented him from waiting on Commodore Hayes at the time alluded to in the said charge.

That the second of the said charges hath not been proved.

That the third of the said charges hath been in part proved, inasmuch as the said Capt. Alexander Gordon addressed a note to Commodore Hayes, in which there is a very unguarded and improper expression.

That the Fourth of the said charges hath not been proved.

That with reference to the fifth of the above charges, and referred to in the

said order of the 30th day of September last, the court is of opinion, that, inasmuch as it hath been proved and admitted in evidence, that the said Capt. Alex. Gordon was not in actual service and full pay in the fleet, or in any ship of war of his Majesty on the 5th day of July, 1831, being the day of the date of the letter referred to by the said last mentioned order, the Court hath no jurisdiction or authority to try Captain Alex. Gordon upon the said last-mentioned charge—referred to in the said order of the 30th day of September, 1832, being expressly prohibited from exercising such jurisdiction or authority by the 4th section of an Act passed in the 22d year of the reign of his late Majesty King George the Second, entitled “ An Act for amending, explaining, and reducing into one Act of Parliament, the laws relating to the Government of his Majesty’s ships, vessels, and forces by sea.”

That, with reference to the said third charge which hath been in part proved as aforesaid, in consideration of Captain Gordon having immediately on his discovering that Commodore Hayes had misapprehended his meaning, offered an apology to Commodore Hayes for the expression contained in the letter referred to in the said charge, and having disclaimed any intention of throwing censure on the Commodore by such expression; the Court doth only adjudge the said Captain Alexander Gordon, to be admonished to be more circumspect in his correspondence with his superior officers in future, and he is hereby so admonished accordingly.—*Portsmouth Herald*.

Dover.—The Catherine, a great boat of Dover, William Davison master, went across the Channel on Sunday to France, with messengers, and returned on Monday morning, and when about entering the harbour a tremendous sea broke over the boat, and drove her out of the channel of the harbour, and it was much feared she would be dashed to pieces against the North-head, in which case every soul must have perished; but the undaunted skill and presence of mind of Davison enabled him to keep the tiller firmly in his grasp, and he finally succeeded in getting the boat behind the North-head, where she was shortly afterwards left high and dry.—*Kent Herald*.

THE DUTCH NAVY.

WE have procured the following account of the naval force of Holland from an official source. The Dutch navy is composed as follows:—

<i>Ships of the Line—Nine.</i>	<i>Guns.</i>	<i>Period when constructed.</i>
Le Zeeuw	84	1825—in activity, with a crew of 750 men
Le Neptune	84	On the stocks, but finished since 1831.
Le Hollande	74	1817.
Le Waterloo	74	1824—in activity, crew 750 men.
Le Kortenaar	74	1825.
Le Jupiter	74	On the stocks, but finished since 1831.
Le Tromp and Le Ruytor	74	Both these are being built.
Le Zeeland	74	1798.
<i>Frigates—Twenty-three.</i>		
Le Rhin	60	1816.
Le Waal	60	In the course of construction.
Le Doggersbank	60	Ditto.
La Diana	44	Taken from the enemy.
L'Amstel	44	1814—stationary.
L'Escout	44	1817.
La Sambre	44	1821.
Le Ruppel	44	1822—in activity—350 men.
La Meuse	44	1822.
La Bellone	44	1825.
L'Alger	44	1825—in activity, 340 men.
Le Rotterdam	44	1826.
Le Palembang	44	1829.
Le Jason	44	1829.
Le Zaan	44	1830.
La Ceres	44	1831.
L'Yssel	44	In the course of construction.
L'Eurydice	32	1802—in activity, 250 men.
La Minerve	32	1809—stationary, 200 men.
La Kenau-Hasselaar	32	1803—ditto, ditto.
La Maria-Reigersbergen	32	1808.
Le Javanais	32	In activity, 250 men.
L'Amphytrite	32	Ditto, ditto.
<i>Corvettes—Seventeen.</i>		
La Comete	28	1828—with a crew of 150 men.
Le Dauphin	28	Ditto.
Le Pollux and Le Triton	28	1825—both with 150 men.
L'Atalante	28	1826.
La Leye and La Nanaleunia	28	1827.
L'Hippomene	28	1830—crew 150.
La Heldin	28	1832—ditto.
Le Van Speyck	28	1832—in activity, crew 150.
L'Ajax	28	1830.
Le Borée and Le Castor	—	Being built.
L'Endragte	20	1820.
La Proserpine	20	1821—in activity, crew 120.
La Pallas	20	1824.
La Meduse	20	1827—in activity, crew 120.
<i>Brigs—Sixteen.</i>		
Le Zwaluw and le Courier	18	The first constructed in 1817, the latter in 1818. In activity, with crew of 110 men.
Le Kemphaan	18	1821.

<i>Brigs.</i>	<i>Guns.</i>	<i>Period when constructed.</i>
Le Valk	18	1824—in activity, crew 110 men.
La Panthere	18	1826—ditto, ditto.
L'Echo	18	1827.
Le Pegase and le Meermin	18	1830—in activity, crew 110 men.
Le Mercure	18	In the course of construction.
Le Hiegarde-Visch	14	1829—in activity, crew 70 men.
Le Postillon and le Snelheid	14	Being built.
Le Windhoud	14	1828—in activity, crew 60 men.
Le Gier	8	1818—ditto, ditto.
Le Pelican	8	1821.
Le Brak	8	1824—in activity, crew 60 men.
<i>Steam Vessels—Two.</i>		
Le Surinam	20	1827—in activity, crew 90 men.
Le Curacoa	10	In activity, crew 70 men.
<i>A ship for exercise.</i>		
L'Uranie	—	1832—in activity.
<i>Transports—Two.</i>		
Le Zemeuw	10	1823.
Le Dersrecht	6	1828.

Thirty-five gun-boats of six guns each, and thirty men, all in activity, making a total of crews of 1,050 men, and 175 pieces of artillery.

Thirty-five gun-boats of three guns each, and twenty-five men, all in activity making a total of crews of 875 men, and 105 pieces of artillery.

Twelve row-boats of six guns each, and forty-five men, total crew 540 men, and 72 pieces of artillery.

Thus, besides the 82 gun-boats, Holland possesses 60 ships of war ready built. One with another, they carry 2,352 pieces of cannon. There are besides, ten vessels and a number of gun-boats in the course of construction.

Of the total of these vessels, 114 are in active service. They are armed with 1,218 pieces of cannon, and are navigated by 8,335 sailors.

It may be remarked, in conclusion, that, as regards the marine of the Netherlands, like that of America, the number of pieces is always in official lists placed below the real number, in respect to ships of the line and frigates. For instance, the Zeeuw, stated at 84 guns, has 104, and the frigates of 44 guns, have all of them from 50 to 54 in battery.—*Portsmouth Herald.*

Captain Napier.—The following anecdote of Capt. Napier at the time that the British fleet were employed in the reduction of the Island of Martinique, was lately related at Portsmouth. On this occasion, he in a brig with two frigates, which were considered the elite of the squadron, were employed as a sort of forlorn hope to beat up in the night between the batteries of Port Royal. At the dawn of the morning although we had passed the batteries, the French flag was still flying on all the forts. Capt. Napier proposed to the senior officer to storm Fort Edward with the boats and marines. This being considered by that officer too daring a service, was declined, but permission was granted to Capt. Napier to do the best he could. At this moment Capt.

Napier came on board the ship in which I was serving, and mentioned his plan to the Captain, a man second in valor and enterprise to no officer in the service. He, however considered the enterprise to be of so hazardous a nature, that he refused to allow his people to join, or the king's boats or stores to be used, but lent his boat, being his private property, for the purpose. Capt. Napier then proceeded with his boat's crew, and the eyes of the whole squadron were gazing with the most intense anxiety, waiting for the result. The gallant Captain, however, landed, and scaled the walls of the fort, and ascertained that it had been abandoned by the enemy. Capt. Napier then hoisted the British flag, and the fort was, in consequence taken possession of, and its guns

turned against Fort Bourbon, which greatly facilitated the capture of the island. This service was very handsomely acknowledged by Sir Alexander Cochrane, but it has never appeared in print.—*Portsm. Herald.*

Copy of Captain Booth's report on Mr. Massey's proposed machine for sounding in hitherto unknown depths; a trial of which was ordered by the Lords Commissioners of the Admiralty, to be made in his Majesty's sloop *Trinculo*, with Mr. Massey on board.—*Cork Reporter.*

"*His Majesty's Stoop Trinculo, Cove of Cork, Sept. 22. 1832.*—On the evening of the 18th instant, when the depth of water, by lead and according to the chart, was about one hundred fathoms, (Cape Clear bearing by compass E.N.E. about sixty miles,) the ship was hove to, as Mr. Massey wished to make his experiment in commonly deep soundings—the experiment was made, and the machine returned to the surface, without assistance, about four minutes and a half after it had been let go from the poop; on picking it up, the index attached showed 140 fathoms; and as a proof that it had been to the bottom, soundings were brought up—the depth shown by index was evidently too much by 40 fathoms, and is to be accounted for, by there being no stop on the rotator; so that it could in some measure have performed its action in returning as well as descending. I consider that in the depth of water before stated (about 100 fathoms) that Mr. Massey's apparatus promised to perform all that the Inventor proposed, as the stop to the rotator could easily have been affixed. We stood off to the westward under easy sail for the night; and at daylight in the morning, hove to, (Cape Clear E. N. E., by chart, about 100 miles.) Mr. Massey tried for soundings with the same machine he had tried the evening before; it did not however return. The ship was continued as stationary as possible: at nine o'clock Mr. Massey tried another machine, fitted with four copper buoys, considered by him capable of offering more resistance to pressure than the single buoy used in the first and second experiments, which the Inventor began to think had been compressed; the

diameter of the single buoy alluded to was as great as that of two of the smaller ones.

"This second machine did not make its appearance any more than the first. Mr. Massey then tried for sounding with a newly invented apparatus of his, to be used with lines, and to be assisted in descent by weight affixed to the lines, so as to cause the stops to break on hauling in: this experiment was first tried with 540 fathoms of line; the lead did not appear to have reached the bottom; the index shewed 280 fathoms. That part of the experiment throwing off the additional weights, and having the benefit of descent, without the danger of carrying away the line in returning, is an ingenious plan of Mr. Massey's and well calculated to assist in getting deep soundings.

"Mr. Massey then proposed sending down, with more additional weight, arranged as in the last experiment, a copper globe similar to one of the four that have been described, for the purpose of deciding whether his apparatus failed from not being capable of withstanding the pressure, or from some other cause: this experiment was tried with eight hundred and forty fathoms of line; the globe enclosed in a net made of seine twine and stopped closely to the lead line, at about forty fathoms from the lead. Neither the lead or globe returned, but the line appeared as if blown off by an air gun immediately about the part where the globe had been affixed.

"Mr. Massey then requested a similar experiment might be repeated with the same quantity of line and an increase of additional weight, with the globe enclosed in a strong net of log line. This was tried, the net not being so closely fastened to the lead line as on the former occasion. In this trial the lead returned without having reached the bottom, and the net, but not the globe, which appeared to have exploded—the net being blown to pieces. This experiment, Mr. Massey said, proved to his satisfaction, the impossibility of counteracting such pressure as that offered in the great depth of the sea.—The inventor, however, still anxious to try his last remaining deep water machine, which

was composed of wood entirely, excepting the apparatus for sinking it, tried, and lost it with the others.

JAMES R. BOOTH.

Ventilation of Steam-vessels.—The prejudice which has existed against the shipment of goods liable to be injured by heat in vessels of this description, is

now on the point of being wholly removed, by an ingenious and simple plan of Sir Alexander Crichton, by which he secures a much more complete ventilation of the holds or cabins of a steam-vessel, than can be obtained in sailing vessels of the ordinary construction.—*London Paper.*

PROMOTIONS AND APPOINTMENTS.

From the Naval Papers.

PROMOTIONS.—Captains, Joseph Harrison; H. G. Colpoys. Commanders, Arthur Wakefield; T. Sparke Thompson. Lieutenants, W. H. J. Marshhead; Charles Pearson. Purser, Mr. Jefferys.

ALGERINE, 10—Mr. Webb, *Master*.
ASIA, 84—*Lieut.* Robert L. Pengelly.
ATROLL, 28—Mr. Henry Hodder, *Master*.
BADGER, 10—*Lieut.* Richmond.
BERMUDA, Yacht,—*Capt.* Sir T. Usher, H. C. H.
BRITANNIA, 120—*Lieut.* C. C. Nelson.
CASTOR, 36—*Lieut.* Charles A. Thorndike; Mr. Edward Hankin, *Master*; Mr. Patrick Campbell, *Midshipman*; Mr. J. Mc Gowan, *Assist. Surg.*
CHATHAM, Yacht,—*Capt.* Sir James A. Gordon, K. C. B.
CLIO, 18—*Lieut.* Henry W. Clare; Mr. Bone, *Acting-Purser*.
CONWAY, 28—Mr. W. Folds, *Surgeon*; Mr. H. E. Crout, *Second Master*.
DONEGAL, 78—Mr. John Bates, *Master*; Mr. W. Smith, *Clerk*; Mr. J. M. Starke, *Clerk*; *Capt.* Thomas Stevens, of the Chatham Division, R. M.
FORRESTER, 3—*Lieut.* W. Henry Quin.
GRIFFON, 3—*Lieut.* Charles E. Parly, Mr. Wm. Dunn, *Clerk*.
HOGUE, 74—Mr. Napier, *Carpr*.
HOWE, 120—Mr. Beatson, *Carpr*.
LARNE, 18—*Lieut.* Lord Francis J. Russell; Mr. John Breaks, *Purser*; Mr. J. T. Dormer, *Master*; Mr. W. Mouro, *Supernumerary Assist. Surg.*; *Lieut.* James Baker Emery; Mr. K. Mc Cormick, *Surgeon*; Messrs. K. W. Pelley, and A. H. Budd, *Midshipmen*.
MALABAR, 74—*Capt.* Hon. Jocelyne Percy, C. B.; *Com.* Wm. Morgan; *Lieuts.* John Cornish, and O. Stanley; Mr. Thomas Jennings, *Purser*.
OCEAN, 80—*Lieut.* John Duffill, *Supernumerary Lieut.*
PLYMOUTH, Yacht,—*Capt.* H. B. Ross.
RHADAMANTHUS, St. V.—*Com.* G. Evans; *Lieuts.* G. T. Gordon, G. Hurst; Mr. Thos. Head, *Midsh.* Mr. Campbell France, *Surgeon*.
ROYALIST, 10—Mr. P. Toms, *Assist. Surg.*
SAN JOSEF, 110—Mr. W. Lambert, *Supernumerary Assist. Surg.*
SAPPHIRE, 28—*Capt.* H. G. Colpoys.
SATELLITE, 18—*Lieut.* E. Bithn; Mr. J. Phillips, *Assist. Surg.*
SERPENT, 16—*Com.* J. C. Symonds, *Lieuts.* W. B. Oliver, and Berry Haines.
SPARTIATE, 76—*Capt.* Robert Tait; *Lieuts.* J. Grant, R. Jocelyne Otway, J. Robinett Baker, C. Leach; Mr. W. Carr, *Master*; Mr. T. Williams, *Purser*; Rev. John Falls,

Chaplain; Mr. F. Strong, *Second Mate*; Messrs. Jason Lardner, and J. Mc Dermott, *Assist. Surg.*; Mr. S. Stretton, *Clerk*; Mr. Mallard, *Schoolmaster*.—**ROYAL MARINES**, *Capt.* T. Hurdle; *Second Lieuts.* G. A. Danvers, and J. T. Aslett.
STAG, 46—*Capt.* Nicholas Lockyer, *Lieut.* Hon. E. A. J. Harris.
TYNE, 28—*Lieuts.* Woodford Williams, and J. L. Scally.
UNDAUNTED, 46—*Lieut.* J. M. Mottley.
VERNON, 30—Mr. G. N. Oughton, *Purser*; *Lieut.* E. Lyne Harvey; Rev. O. S. Harrison, *Chaplain*; Mr. H. Elicombe, *Mate*; Mr. R. Roberts, *Carpr*.
VICTORY, 104—Mr. F. Kent, *Second Master*; Messrs. W. M. Gill, J. Morrison, and Alex. Muirhead, *Supernumerary Assist. Surgeon*; C. Marshall, *Second Lieut.*, R. M.
WINCHESTER, 52—*Capt.* Hon. W. Welleley; *Com.* Arthur Wakefield.

Lieut. E. B. Davison, to *Stentor Transport*, loading at Deptford for South America.
 Dr. Alexander C. H. Thrasher, is appointed Assistant Surgeon in the Navy, to do duty at Haslar, Vice Philips; Mr. J. Nolloth, *Master Shipwright* at Portsmouth Dock-yard, has been superannuated, after a long and faithful career in the service of the public; Mr. O. Lang, *Master Shipwright* of Woolwich Dock-yard, remains in that station; Mr. John Peake, *Master Shipwright* at Milford Dock-yard, is appointed to Portsmouth Dock-yard, vice Lang; Mr. Allen, *Supernumerary-student* of Naval Architecture at Pembroke Dock-yard, is appointed Foreman of that yard, vice Thomas, deceased; Mr. D. Wright, *Surgeon* of the Cholera Hospital-ship Tremendous, at Sheerness, has been discontinued, the medical charge of that establishment having been confided to Mr. W. Ray, Assistant-surgeon of that yard; *Lieuts.* J. D. Robinson, and J. Slaughter, are appointed Chief-officers of the Coast-guard service; *Lieut.* C. H. Jay, of the Admiralty Telegraph, is placed on the Pension List for wounds; Mr. Hawkes, *Builder's Assistant* at Chatham, is promoted to the rank of *Builder*, and appointed to Milford, vice Peake. *Com.* Edward Crouch, to be Secretary, and *Lieut.* Edward Seymour to be Flag-Lieutenant to Rear-Admiral Sir Michael Seymour; and E. B. Westbrook is appointed to the Coast-guard service on the Coast of Norfolk; *Capt.* Bissett, R. N. has been appointed to the command of the Coast guard service, on the Poole station, in the room of the late *Capt.* Richardson, R. N. The appointment of Mr.

500 NAUTICAL MISCELLANY—NEW VESSELS—VESSELS DETAINED.

P. Brennan, Assistant-Surgeon to the Victory has been cancelled; Mr. Robert Marshall to the Ordinary at Sheerness; John Peake, Esq. from Pembroke Dock-yard, is appointed Master Shipwright of Portsmouth Dock-yard, vice J. Nolloth, Esq. superannuated; W. Morgan, Esq. Assistant at Sheerness Yard, is removed to Chatham Yard; and John Fincham, Esq. of Portsmouth Yard, is appointed Assistant at Sheerness, vice Morgan; Lieut. James Maitland, is appointed Flag-Lieutenant to Rear Admiral Sir Frederick Maitland, K. C. B., Admiral Superintendent at Portsmouth; Mr. John Winstone, Boat-swain of the Castor, Mr. John Smith, Carpenter of the Spartiate, and Mr. John Brown, Boatswain of the Vernon, are ordered to be borne on the cheque at Portsmouth.

ROYAL MARINES.

Mr. John Charles Lamborn has been appointed to the Portsmouth Division, as a Second Lieutenant, vice Buchanan promoted. A detachment, consisting of one serjeant, one corporal, one drummer, and seventeen pirates, embarked on the 6th Oct., on H. M. S. Larne, at Portsmouth. First Lieut. Edward Bathurst, and Second Lieut. Sidney Smith Crispo, of the Chatham, are appointed to the Portsmouth Division; First Lieuts. S. A. Wesley, and E. W. Churchill, of the Plymouth Division, are appointed, the former to do duty as Adjutant, the latter as Quartermaster and Paymaster, to the Marines under Major Parke, C. B. at present serving in Ireland.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR THE PRESENT YEAR.

Reported to 20th September.				Reported to 20th September.			
VESSELS.	RIG.	TONS.	WHERE BUILT	VESSELS.	RIG.	TONS.	WHERE BUILT
Ariel	Schooner	186	Gloucester.	Mary	Brig	217	Greenock.
Arges	Schooner	90	Newport.	Pearl	Smack	59	Hewick.
Bengal	Barque	314	Newcastle.	Queen	Schooner	109	Bristol.
Cherub	Schooner	96	Dartmouth.	Reform	Schooner	96	Plymouth.
Columbus	Ship	323	Braislaw.	Regina	Suow	228	Whitby.
Corseaside	Brig	264	Sunderland.	Reindeer	Schooner	174	Liverpool.
Elizabeth	Smack	45	Whitehaven.	Reward	Schooner	77	Bideford.
Ellen	Barque	305	River Thames.	Sarah Barry	Barque	207	Larrow.
Goldfinch	Suow	234	Sunderland.	Star	Brig	120	Sunderland.
Idle	Brig	189	Yarmouth.	Stratford	Ship	392	Cowes.
Iris	Schooner	125	Plymouth.	Supply	Schooner	170	Shoreham.
Laura	Smack	61	Beaumaris.	Tynecastle	Snow	223	Sunderland.
Libra	Brig	187	Dundee.	William			
Margaretta	Smack	47	Barmouth.	Lockerby	Brig	334	Chepstow.
Martha	Schooner	94	Bideford.				

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Agenorina	Darrell	Kingston	Quebec	Kingston	31 Aug.	6785 Waterlogged.
Algonquin		Liverpool	Philadelph.	Rock Channel	8 Oct.	6785 Aground.
Brigilla	Irwing			Newport	5 Oct.	6784 In harbour.
Ceres		Whitehava.	Dublin	Liverpool	10 Oct.	6785
Clonnel	Davis	London	London	Whitstable	9 Oct.	6785
Culloden	Little	London	Trieste	Marate	9 Oct.	6785
Cygnat	Christian	Dublin	Whitehav'n	Saltoun Bay	17 Sept.	6779
Frances	Daniel	Waterford	Lewes	Milford	6 Oct.	6784 Leaky.
Hector	Cammish			Shoreham	5 Oct.	6784 Doubtful.
Hollyoak		Dublin	Cardiff	Off Formby	10 Oct.	6785
Hunter	Lewis	Sunderland	London	Wivenhoe	8 Oct.	6784 Damaged.
Isabella	Miller	Quebec	Troon	Pictou	Aug.	6780 Damaged.
Lalla Rookh	Phillips	Belfast	Rica	Elsinore	29 Sept.	6784 Mainm. struck.
Margaret	Roper	Liverpool	Bombay	St. Helena	24 Aug.	6784 Cargo shifted.
Montano	Gray	Shielda	New York	Aberdeen	10 Oct.	6786 Very Leaky.
Myrtle	Walker	Cardiff	London	Dartmouth	25 Sept.	6781
Nelly	Dick	Quebec	Aberavon	Cardigan	8 Oct.	6785
Paragon	Baker	Kingston	Liverpool	Pigeon Island	30 Aug.	6785 Dismasted.
Queen Adelaide	Davis	Cardiff		Off Hockbeg	8 Oct.	6785 Aground.
Royal Mint		Petersburg	Liverpool	Stromness	20 Sept.	6783
Ruby Castle	Richardson	Swansea	New York	Liverpl. N.S.	10 Aug.	6783 Been on shore
Stamfordham	Lekkie	Montreal	London	Montreal	4 Sept.	6783 Aground.
Walworth Castle	Wrenimore			Gambia	12 Sept.	6786 Leaky.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 445.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
299 A small loop				Off I. Man	5 Oct.	6784 Found, all per.
300 Ann	Worthington	Mauritius	Rangoon	Off S. Brandon	July	6785 Crew saved.
301 Ariel	Wells	Hull		Davis Straits	30 June	6782 Crew saved.
302 Atlas	Clark	Hull	London	At sea	8 Oct.	6786 Foundr. cw. sd
303 Bainbridge	Miller	Halifax	London	Cowes	8 Oct.	6785
304 British Queen		Wick	Liverpool	St. Geo. Ch.	8 Oct.	6787 Foundr. crew saved.
305 Caledonian	Corvan	Forth	Ireland	Not said	22 Sept.	6787 Crew saved.
306 Cicero	Evans	Limerick	Quebec	Reeves Rocks	22 Sept.	6780
307 Darling		Sydney			May	6787
308 Eglington	Todd	Kirkaldy		Davis Straits	30 June	6782 Crew saved.
309 Eliza Plummer	Griffiths	Jamaica	Liverpool	Key West	14 Aug.	6781 Cargo pt. saved
310 Elizabeth		Montreal	Halifax	St. Lawrence	14 Aug.	6783 Run f. of. cw. sd
311 Eliza & Ann	Lewis	Waterford	Larne	Off Waterford	7 Oct.	6785 Crew drowned
312 Elis. Jane						
313 Endeavour	Shaffer	Scarboro'	Sunderland	Vieland	13 Oct.	6787 Crew saved.
314 Erato	Ozley	Shields		Scroby Sand	14 Oct.	6781 Uncertain.
315 Favorite	Carter	Liverpool	Leghorn	C. St. Vincent	Sept.	6781
316 Fisher	Forrest	Liverpool	Narva	Coast Sweden	4 Oct.	6787 Uncertain.
317 Flora	Kay	Quebec	Padstow	Aberystwith	Sept.	6781
318 Forfarshire	Wilson	Dundee	London	SW Anticost	3 Sept.	6784 Crew saved.
319 Friendsbury	Phillips	London		Off Dunbar	5 Oct.	6784 Two drowned
320 Friendship	Whaler	London		Solomou's I.	July	6786 Crew 7 saved.
321 Grecian	Jones	Bangor	Clyde	Luce Bay	4 Oct.	6784 Doubtful.
322 Haanch		Liverpool	Boston	Boote Bay	8 Oct.	6785
	Holmes	Jamaica	Quebec	At sea	13 Aug.	6784 By fire. cw. arrived at Abaco.
323 Heriot	M'Leod	Troon		Off Ballantra	8 Oct.	6785
324 Hope	Stewart	Peteraburg	Hull	Ostervam	21 Sept.	6786 Capsis'd. cw. sd
325 Hope		Shields		Off Gothland	Oct.	6785 Uncertain.
326 Horizon		Havre		N. S. Sydov N. S.	Sept.	6784 Totally lost.
327 Howick	Thomas	Newry	Glasson	Ribble Bk.	17 Oct.	6787 Struck.
328 Juno	Lvall	Leith		Davis Straits	16 Aug.	6782 Crew saved.
329 March	Ling	Seaham	London	Off Winterton	18 Oct.	6785 Crew saved.
330 Mary	Wright	Hull	Bridlington	Off Spurlid.	5 Oct.	6784 Crew saved.
331 Prince of Orange	Gibbs	London	Hambro'	Newark R.	8 Oct.	6786 Crew saved.
332 Richard and Sibella	Davis	Jamaica	London	Off Falmouth, Jamaica	1 Aug.	6785 Sold.
333 Science				N. V. D. Land	May	6784 15sd. by Warior
334 Science	Saunders	Vn. D. Land	London	Off C. Horn	21 June	6786 Dismasted & set on fir. cw. sd.
335 Success	Carey	Ayr	Belfast	Sranraer	8 Oct.	6786 Crew saved.
336 Susan	Allen	Halifax	Kingston, J.	Wreck Reef	26 Aug.	6785 Doubtful.
337 Thomas	Maclean	Malaga	Antwerp	W. Capelle	8 Oct.	6786 Crew saved.
338 Venus	Greenwell			Off Flamboro' Head	2 Oct.	6783 Run down, uncertain.
339 Vestal	Davis *	Stancho	London	Marsa Scala	Sept.	6786 One drowned.
340 Vigilant		Liverpool	Havana	Rednos	8 Oct.	6785 Doubtful.
341 William	Vidler	St. John, N. B.	Rye	Outside I.	12 Oct.	6786 Uncertain.
342 W. Neilson	Platt	Liverpool	N. Orleans	Liverpool	8 Oct.	6785 Crew drown'd.
343 Wm. Young	Denchar	Leith		Davis Straits	30 June	6783 Crew saved.

Commerce of the Sandwich Islands.—Capt. Gregory, of the U. S. ship *Falmouth*, has transmitted to the government from Callao, under date of 1st May, a list of vessels whose owners reside in the Sandwich Islands. The vessels are 23 in number, three of which are between 200 and 300 tons burden, eight between one hundred and 200, and the remainder between 20 and 100 tons. The owners of nine of them, including the three largest, are Americans, (Pitman, French, and Co., and J. C.

James, Esq.) three are owned by British residents, and the remainder by Sandwich Islanders. The largest vessels owned by the natives are the *Neo*, of 163 tons, the *Waverley* of 147 tons, and the *Karaimoku*, of 119 tons. The brig *Convoy*, owned by J. C. James, arrived at Callao just before the despatch was forwarded, having left the Sandwich Islands on the 17th February. Every thing was quiet at the Islands—nothing special in the way of news.—*Salem Gaz.*

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN	PARTICULARS.
Aberdeenshire		Aberdeen		44 N 54 W	11 Sept.	6783
Acarion		Liverpool		44 N 30 W	4 Oct.	6786
Amelia	Fry	Liverpool	Constple.	Off Malaga	4 Sept.	6783
Ann	Of S. John's	Liverpool		49 N 10 W	10 Oct.	6786
Andromeda	Wilkie	Liverpool		46 N 30 W	9 Sept.	6780
Andromache		Liverpool		47 N 43 W	14 Sept.	6783
Auna		Loudouder.		51 N 31 W	22 Sept.	6785
Argus		Sligo		New Brun	43 N 54 W	5 Sept. 6783
Bolton	Aldham	London		Bengal	19 S 31 W	27 July 6786
Camerton	Of Whitehaven			Quebec	44 N 51 W	12 Sept. 6783
Catherine	Fann	London	Madras	2 S 82 E.	28 June 6785	
Coromandel		London	Madras	E. of CG Hope	29 July 6786	
Eliza Scott		London	Smyrna	Off Malaga	4 Sept. 6783	
Emp. Alexander		Liverpool		48 N 35 W	9 Sept. 6783	
Equestrian	Harrison	Sunderland	Miramichi	48 N 59 W	29 Aug. 6783	
Fame	Richardson		Mauritius	Off Palma	20 July 6783	
Forth	Hunter	Liverpool	St. John's	43 N 65 W	21 Aug. 6785	
Heroine		Liverpool	S. Andrew's	43 N 62 W	23 Aug. 6785	
Hope	Of Pool	Newfoundld	New Brun	44 N 58 W	3 Aug. 6783	
Industry		Belfast	Demerara	22 N 33 W	1 Sept. 6783	
Irtton		Liverpool	Quebec	46 N 52 W	28 Aug. 6780	
Isabella	Wiseman	Sydney	Madras	6 S 93 E.	10 July 6786	
Isabella		Newfoundld	Oporto	44 N 34 W	27 Sept. 6785	
Jas. Dennistown		Clyde	Barbadoes	49 N 30 W	19 Sept. 6785	
Janet		Liverpool	Trieste	39 N 10 W	19 Sept. 6783	
J. Anderson		Clyde	Miramichi	47 N 26 W	15 Sept. 6783	
J. & H. Cumming		London	New York	46 N 28 W	14 Sept. 6783	
John Hayes			India	12 N 26 W	14 Sept. 6786	
John & Jane	Perriam	Goole	Exeter	Off Bude	18 Sept. 6780	Crew saved.
Mary Ford		Liverpool	Miramichi	46 N 58 W	29 Aug. 6780	
Millicent		London	Jamaica	29 N 21 W	27 Sept. 6785	
Minerva	Metcalf	Liverpool	Bombay	28 S 51 E.	20 July 6787	
Minstrel		Cork	Halifax	43 N 44 W	25 July 6783	Suppd. Provis.
New England		Liverpool	Boston	51 N 14 W	27 Sept. 6783	
New Times		London	Corfu	38 N 9 W	17 Sept. 6783	
North Briton	Morrison	Leith	N. S. Wales	2 S 18 W	29 Aug. 6785	
Orestes	Transport	Halifax	Bermuda	33 N 62 W	21 Sept. 6787	
Recovery	Wellbank		Bengal	Off Palma	30 July 6783	
Red Rover		Liverpool	Constple	Off C Matapan	19 Aug. 6780	
Rokeyb		London	Quebec	46 N 56 W	26 Aug. 6780	
Rosina		London	Smyrna	Off Alicata	14 Aug. 6783	
Roxburg Castle	Denny	London	Bengal	10 N 21 W	12 Sept. 6786	
Sarah Ann		Liverpool	S. Andrew's	45 N 37 W	23 Sept. 6786	
Sarah Ann		Liverpool	New Brun	47 N 29 W	18 Sept. 6783	
Sarah & M. Anne		Maryport	Quebec	46 N 55 W	14 Sept. 6783	
Selina		Liverpool	New York	51 N 13 W	5 Oct. 6786	
Susan		Jamaica	Quebec	31 N 73 W	27 Aug. 6783	Making for Virginia. Master & Mate dead.
Thetis		Limerick	Quebec	44 N 38 W	10 Sept. 6783	
United States		Liverpool	New York	43 N 44 W	21 Sept. 6786	
Victoria		London	Rio Jan.	12 S 31 W	27 Aug. 6787	
Water Witch		Liverpool	Leighorn	36 S 3 E.	10 Sept. 6783	
Wellington		Liverpool	New Brun	43 N 44 W	29 Sept. 6783	
William		Kinsale	St. John's	43 N 65 W	21 Aug. 6785	
Wm. Pitt	Ogilby	Liverpool	St. John's	42 N 48 W	21 Sept. 6785	Lost 2 topsails.

Railroad from London to Greenwich.
—A splendid railway is intended to be constructed between London and that most attractive and populous town, Greenwich, which will commence at the foot of London Bridge, and terminate near Thornton Inn, Greenwich. It will consist of a series of arches forming one continued bridge of a most light and

elegant character; so that besides the utility of the work, it will deserve to be ranked amongst the greatest ornaments of the metropolis. The sum of £400,000 will be expended on the undertaking, principally in the employment of workmen. The journey, including stoppages, will not consume more than twelve minutes.—*London Paper.*

EAST INDIA SHIPPING.

On 17th October a Court of Directors was held at the East India House, when the following ships were thus stationed, viz.: the *Duke of York*, *Scaleby Castle*, *Warren Hastings*, *Kellie Castle*, *Buckinghamshire*, *Castle Huntley*, and *Fansittart*, for Bengal and China;

the *Marquis of Huntley*, *Duke of Sussex*, *Herefordshire*, *Thames*, *Lady Melville*, and *Farquharson*, for Bombay and China; the *Waterloo*, *Thomas Grenville*, *Minerva*, *Rose*, and *Prince Regent*, for China direct.

MOVEMENTS OF TRANSPORTS.

AMPHITRITE—Lieut. Cooley, 24th October, sailed for Plymouth.
INDUSTRY—20th Sept. sailed for Lisbon.
MARSHALL BENNET—Lieut. Ward, Woolwich.
ORESTES—Lieut. Garret, 20th Aug. on way from Halifax to Bermuda.

PRINCE REGENT—Woolwich.
STENTOR—Lieut. E. B. Davison, Deptford. Preparing for South America.
WILLIAM HARRIS—Lieut. Stevens, 3d Oct. at Gravesend.

FOREIGN MAILS.

For **CEYLON**—Peru, Graham, from St. Katherine's Dock, 20th Nov.
FERNANDO PO—Alfred, Martin, from St. Katherine's Dock, 1st Nov.

For **RIO JANEIRO**—Pursuit, Allen, from Liverpool, 1st Nov.

Births.

At Liskeard, the lady of Lieut. Edc, of his Majesty's steamer *Colombia*, of a daughter.

At Penzance, the lady of Mr. Hughes, commander of his Majesty's cutter *Viper*, of a son.

At Falmouth, the lady of Lieut. J. Drew, R.N., of a daughter.

On 3d October, in Upper Greig-street, South-sea, the lady of Captain Molesworth, R.M., of a daughter, being her eleventh child.

At Sutton Court, the lady of Admiral Sir Richard King, Bart., of a daughter.

On 9th October, at Southsea, the lady of Lieut. F. Wood, R.N., of a daughter.

At Southsea, on 11th October, the lady of Lieut. Heriot, Royal Marines, of a daughter.

At Southsea, on 8th October, Mrs. Andrew Russel, R.N., of a son.

In North-street, Chichester, the lady of Lieut. Critchell, R.N., of a son.

Marriages.

Captain S. E. Cook, R.N., only son of the Rev. James Cook of Newton-Hall, to Dorothy Davison, youngest daughter of the late Alex. Davison, Esq., of Swarland-Park, Northumberland.

At Bolney, Sussex, Lieut. H. V. Huntley, Esq. R.N. to Ann, eldest daughter of the late Lieut.-General Skinner, of Chesterfield-street, Mayfair.

At Middleton, Cork, Mr. C. Foster, R.N., son of Col. Foster, Gatecombe, Hants, to Mary, daughter of Sir J. Wallis and Lady Harriet Hoare, and niece of the Marquis of Thomond. On 15th September, Mr. William Boyle, late

of his Majesty's ship *Maldstone*, to Miss Sarah Collins, of Hardway.

On the 11th October, at Titchfield, Lieut. Mayott, R.N. of Greenwich, to Maria, daughter of F. Bedford, Esq., of Greenwich Hospital.

On 15th October, at Anthony Church, by the Rev. William Row, Rector of St. John's, Cornwall, Lieut. P. N. McKeller, R.M., to Mary-Ann, daughter of the Rev. Wm. Row.

On the 18th October, at St. Mark's, Kennington, by special license, James Brown, Esq., Master R.N., to Jane Hope Burgess, youngest daughter of J. H. Burgess, Esq., Purser, R.N.

Deaths.

Monument to the late Captain Foster.—A monument, executed by Mr. Spence, of Liverpool, has just been placed in the chapel of Woodplumpton, near Preston, in commemoration of the character and untimely fate of that able and scientific seaman, and most amiable man, the late Captain Foster. The particulars of the melancholy event, which deprived the country of one of the most promising young men in the British navy, were given in the Chronicle on the arrival of the mournful intelligence in May, 1831. The present testimonial is the result of the combined contributions of his friends. The monument consists of an urn, from which the British flag hangs in negligent folds, and against which a sailor is leaning in the attitude of grief. An anchor and quadrant, and a few nautical and scientific instruments are also introduced; and below the figure the following inscription is engraved in plain Roman capitals:—

SACRED TO THE MEMORY OF
HENRY POSTER, R. N., F. R. S.
Distinguished as well for superiority of intellect
as urbanity of manners,

By a zealous and firm discharge of duty,
he gained the confidence and regard of his
brother officers, and by a successful
pursuit of knowledge attracted the
notice of men of science.

For his philosophical experiments made in the
Arctic regions, the Copley medal of the
Royal Society

was presented to him on the 30th November,
1827; when the Lord High Admiral of
England, with an alacrity honourable
to himself and to the subject of his patronage,
instantly promoted him to the rank of
Commander.

In the year following year he sailed on a
voyage of scientific research.

He had completed his astronomical observa-
tions at Panama, and all things had prospered
in his hand; when, proceeding to his ship,
and anticipating a speedy return to his
native shore, he fell from a canoe, and
in a moment was lost to his country
and his friends.

His body, shrouded in the British flag, was
interred near to the fatal spot on the bank of
the river Chagres, in the Gulf of Mexico,
on the 3th of Feb. 1831, and in the 34th year
of his age.

This monument was erected by several
of his companions and friends as a
memorial of the high esteem they
entertained for his character, and of the deep
regret they felt for his untimely death.

He was the son of the Rev. Henry Foster,
Incumbent of this Chapelry.

At sea, Commander Sandilands, of H. M. S.
Comet, a brave, humane, and highly respect-
able officer.

At sea, on board H. M. S. Jaseur, on his
passage to England invalided from H. M. S.
Badger, Lieutenant Henry Lang, highly
respected.

In Africa, from the combined effects of the
climate and great exertion, Henry Davis, Esq.,
of H. M. Dock-yard, Sheerness, a young man
deservedly esteemed as an officer, a seaman,
and a gentleman.

At Charmouth, in Dorsetshire, of malignant
cholera, Capt. J. S. Smith, R. N.

On the 26th of September, at his house in
Hampshire-terrace, universally respected and
lamented, Commander Robert Parry, R. N.,
in the 71st year of his age.

On Tuesday the 2d of October, of cholera,
at his house, in Lambeth, Molesworth Phil-
lips, Esq., Lieut.-Colonel of Marines, the last
surviving companion of the illustrious cir-
cumnavigator Cook, of whose death he was
an eye-witness, and, to a certain extent, the
avenger.

At Plymouth, Mr. J. Robertson, Purser,
R. N., of consumption, aged 49.

At Thoune, Canton de Berne, on the 27th
September, Capt. Gardiner-Henry Gulon, R. N.

Lately, retired Commanders J. Short, R.
Wright, and C. Burlton.

Lately, on the Coast of Africa, Mr. Davia,
Second-Master, and Mr. James Rae, Assist-
-Surgeon of the Pluto steamer: three of a
seamen had also died.

At his lodging, near London, on the 5th of
October, Captain George Langford, R. N., aged
52. This officer was promoted to the rank of
Captain in March 1808, while commanding
the *Sappho*, for capturing a Danish ship of
war of superior force, called the *Admiral Yæ-
rol*. He served nearly the whole of his time
as Midshipman and Lieutenant in the fleet
under the command of the immortal Nelson,
and was present in the boats commanded by
Sir Thomas Hardy (then a Lieutenant) at the
cutting out of the *Méuse* from the harbour of
Santa Cruz, and at the battles of St. Vincent,
the Nile, landing in Egypt, and capture of the
Guillaume Tell, and in many minor conflicts
in boats, &c. during the active period of war-
fare in the Mediterranean from 1797 to 1800.
The last ship Captain Langford commanded
was the *Alpheus* frigate, on the East India
station, and which was paid off in 1816.

On Friday the 12th October, at his residence
in Cavendish-crescent, Bath, aged 58, Volants
Vashon Ballard, Esq., Rear-Admiral of the
Red, and Companion of the Order of the
Bath.

J. Dupre, Esq., Purser: he served on board
the *Triumph*, in Lord Duncan's victory,
in 1797.

At Wilcove, Joseph Fleeming, Esq., retired
Surgeon in the Royal Navy. Mr. F. had been
on the list of Surgeons for nearly 64 years.

Lately, in the West Indies, deeply regretted,
Mr. Oughton, Assistant Surgeon R. N., son of
G. V. Oughton, Esq., Purser of the *Vernon*.

At Exeter, aged 62, Robert Blanchard, a
Navy pensioner. He was a principal in the
mutiny of 1797, and for the part he took in
that affair he was sentenced to die: his sen-
tence was, however, commuted to a flogging
round the fleet, the marks of which he took to
the grave with him, after a lapse of thirty-five
years.

On the 15th of September, Capt. Lock, the
distinguished amateur artist, was drowned in
the Lake Como. Capt. Lock, who was in his
29th year, was son of William Lock, Esq. of
Norbury-Park, by a daughter of the late
Duchess of Leinster and W. Ogilvie, Esq., and
was alike remarkable for his amiable dis-
position and the beauty of his person, which is
immortalized by the pencil of Lawrence. He
was the original of the beautiful picture "The
Boy and Dog," engraved in the *Cameo Annual*.
About three years ago, Captain Lock married
Miss Selina Tollemache, daughter to Admiral
and Lady Elizabeth Tollemache, by whom he
has left an infant daughter. Captain Lock
and his lady passed the summer with his
parents at a villa on the border of the Lake of
Como, and it is stated that his fondly-attached
wife was in a balcony, looking at her husband
in a pleasure-boat on the lake, when a sudden
gust of wind sunk this boat, and swept him
from her sight for ever.—*Portsmouth Herald*.

THE
NAUTICAL MAGAZINE,

&c.

DECEMBER, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

72. THE FASTNET ROCK, *South Coast of Ireland.*

THE following is a copy of a report from Lieut. Howe, commanding H. M. Brig *Onyx*, to Vice-Admiral Sir Pulteney Malcolm, K.C.B., on the Fastnet, and other rocks in its vicinity.

“ H. M. Brig *Onyx*, off Cape Clear, 30th August, 1832.

“ Sir,

“ It has continued to blow so hard, and so heavy a swell has been running, that I have been prevented from executing your orders to ascertain the position of the rock outlying from the Fastnet, until to-day; but which I have now done, and find it to be twelve hundred and eighty-six feet, or a little less than a quarter of a mile, from the highest pinnacle of the Fastnet; from which is to be deducted that part of the base of the Fastnet which projects towards the shoal, and which I measured, and found to be one hundred and forty feet, leaving eleven hundred and forty-six feet, or rather less than two cables' lengths, between the extreme N. E. point of the Fastnet and the shoal.

“ I came to a grapnel in a boat on the shoalest part of the rock that I could find, at low water to-day, in exactly twelve feet water. From this spot I found the altitude of the Fastnet with my sextant to be $4^{\circ} 34' 40''$, (no index error.) I then went on the top of it, and with a lead-line measured its perpendicular height from the surface of the water, which is one hundred and three feet at low water; and from the spot where the lead lay, I measured the base, (which points directly towards the shoal,) and found it as before stated. With these materials, I have been able to ascertain the position of the shoal with great accuracy; it bears from the Fastnet N. E. by E. one thousand one hundred and forty-six feet.

“ The surface of the shoal is not more than thirty feet over; the lead fell into $5\frac{1}{2}$ fathoms close to its eastern boundary, and the water deepened to ten, twelve, and fourteen fathoms, at a cable's length; on its south-westerly side the lead fell at once into nine and a half fathoms, and deepened very irregularly to sixteen fathoms, which I found close to Fastnet.

"No ship well conducted would go so near to the Fastnet, as this shoal lies, from choice; and should one be compelled to do so, there is a good channel between them. A shoal extends from the Fastnet Rock in a south-westerly direction, about half the distance this rock lies, but no seaman would venture so close to it.

"The N. W. and S. E. sides of the Fastnet are bold to, with from ten to twelve and fourteen fathoms close to them.

"I have the honour to be,

"Sir,

"Your obedient servant,

"ALEX. B. HOWE,

"Lieut. R.N. Commanding.

"Vice-Admiral Sir P. Malcolm, K.C.B., &c. &c. &c."

The foregoing will be a sufficient warning to vessels, particularly our yachts in their sailing excursions, when rounding the Fastnet, to give it a wide berth.

73. NOTICE RESPECTING THE NEW LIGHT-HOUSE ON TORY ISLAND. BY CAPTAIN W. MUDGE, R. N.

The new-fixed light on Tory Island, commenced on the 1st of August last, is a fine, steady, brilliant light, and was seen from the deck of the *Imogene* (a small vessel) distant fifteen and a half miles, in a W. N. W. direction. It is situated on the west end of Tory Island, on the highest part of a long shelving point, and is about 120 fathoms from high-water mark. The base of the light-house is seventy-four and a half feet above the sea, and the lantern being sixty-three feet above the base of the building, makes the total height of the reflectors 137 feet above the mean level of the sea, and it therefore may be seen fourteen miles distant.

This light-house has been erected for the purpose of superseding the use of that on Arranmore Island, as expressed in a notice from the Ballast Office at Dublin, dated in August 1831, a copy of which will be found on page 15 of our first number. The light of Arranmore has been discontinued accordingly.

Tory Island has a bold shore in general, although it is much believed that a long shoal extends from its western side. This appearance arises from the long shelving formation of its western coast, and from the sea running up the low slope, dashing and foaming among the rocks, which gives it the appearance of an extensive reef.

In passing between the coast of Ireland and the Island, generally termed the Sound, the light will be obscured by the intervening heights of Tory Island. The limits of this obscuration are from S. 30° E. to S. 50° E. from the light.

A notice has lately been issued by the Ballast Office of Dublin, differing, in some respects, from the foregoing, with which we have

been furnished by Captain W. Mudge, R.N. employed in surveying that coast. Seamen may therefore depend on the information we have thus been enabled to afford them. In a future number, we propose giving a plan of this island, which has been distorted in direction in nearly every chart extant. The actual direction of its greatest length is N. N. W. and S. S. E.

74. OBSERVATIONS ON THE BAR AND HARBOUR OF OPORTO, AT THE ENTRANCE OF THE RIVER DOURO.

The first precaution to be observed by vessels bound to Oporto is to be certain of their latitude, as there is a great sameness in the appearance of the land, and the towns to the northward of Oporto are seen at a great distance. Oporto may be known with the assistance of the latitude, by its being situated about three miles inland, and partly built on a small eminence, with the black steeple of Torre dos Clerigos in the middle, and Foz before it, on the sea shore. No vessel should attempt the bar without a pilot, as it is constantly shifting, and the freshes render it extremely dangerous. Mr. Charles Gahan, the second-master of H.M.B. *Royalist*, informs us, that vessels are frequently prevented from entering the river for three or four weeks at a time. In addition to which, Mr. H. J. Strutt, the master of H.M.S. *Victor*, commanded by Captain Ellice, says, that no vessel drawing more than 15½ feet of water can pass it at any time.

On the extraordinary and dangerous freshes to which the river Douro is subject, Mr. Strutt makes the following useful observations: "It is, perhaps, superfluous to observe, that the great extent of this river, the steepness of its banks, narrow bed, and debochure, as also the number of streams tributary to it, make it liable to considerable irregularity in rise, and strength of current. Now, the seasons here are tolerably regular; the rains are heavy, continuous, and general. Thus the river is occasionally swollen above its customary level. Again, during the prevalence of W. and S. W. winds, to which its entrance and principal direction is exposed, its stream is more or less impeded; as those winds cause an accumulation of sand along the shore to seaward, and upon the rocks, which are the fundamental basis of the bar. Thus arises its liability to "freshes:" the strength, duration, and importance, depending upon the conjoined operation of some, or all of these causes. The periodical fall of the stream being overcome, and a gradual rise continuing for two or three days, is a certain indication of one being at hand; and when the waters begin to find vent, before the commencement of the run is perceptible, the middle of the river is covered with rubbish, patches of foam, &c. The *Victor* experienced one, accompanied with about ten days' rain, with little intermission, and those chiefly drizzling. During that time, the wind was westerly; but neither very strong nor steady. The first indication, viz., loss of tide, was observed two days before the rubbish and foam were observed; the day following it attained full strength; and subsided on the third morning afterwards, to the usual strength of current. We had 4½ knots alongside; in the middle of the stream it was of twice that velocity. There can be little doubt that the strength of this fresh is very often much exceeded, especially in the spring of the year, when a sudden thaw on the mountainous tracts which border the river occasions the descent of a great body of water. At all events,

the utmost precaution for the holding of the vessel is indispensable; for the bottom is of light soil; soft, but not tenacious, and appears to be considerably agitated; and, strange as it may be thought, two vessels on the opposite shore had their bowers in the stream washed astern, a circumstance which is stated to be not uncommon at such times, owing to the rapidity of the stream."

The following precautions adopted by the Victor may be useful to vessels. The anchorage taken up by this vessel was about a mile west of San Juan da Foz, in thirteen fathoms water.

"Aug. 12, 1832.—Having had much rain, and missing the accustomed fall of the river, completed preparations for a fresh, having the small Bower with 65 fathoms of chain in the stream, on larboard bow, the best Bower buried on shore with a chain, and a hemp cable clenched round a tree, on starboard bow. Stream anchor, with fifty fathoms of chain, on larboard quarter (in the stream;) stream hemp, and a 4 and a half-inch hawser on starboard quarter, to the shore; with spare messenger, and a warp for breast-fasts. The vessel warped into little more than her own draught, with the rise of the water."

We will now give Mr. Gahan's directions for the guidance of vessels in the Douro.

"During the summer months, the best anchorage is off the city, fifty fathoms below the rocks which show at half-tide: there being no other rocks near this place, it cannot be mistaken. Moor head and stern—your small bower-anchor ahead, and stream astern; hove as close as possible to the south shore, by a head and stern hawser made fast to the shore. But on the least indication of a fresh, such as having a continuance of heavy rain, or a fall of snow on the mountains, (more particularly the latter, when thawing,) you must immediately move below St. Antonio de Val de Piedade Convent. The following are the marks for anchoring: Sarra Convent, which is situated on a hill above the bridge just open of St. Antonio point, which is a short distance outside St. Antonio de Val de Piedade Convent, bearing S.E. $\frac{1}{4}$ E. by compass; old burying-ground point, N.W. $\frac{3}{4}$ N.; a large yellow house in a valley, among some trees on the south side S. by W. With these bearings and marks on, you will be in twenty feet water, low water, spring tides. The ship's head being S.E. the small bower anchor is to be let go in fifty fathoms, one point on the larboard bow; the stream in seventy fathoms one point, on the larboard quarter; the best bower cable to be made fast to the bower anchor, which must be taken on shore, and buried in the quay three points on the starboard-bow; a hawser from the starboard quarter to the shore, and a good hawser, or stream cable, from the starboard bow to the shore, to heave in shore by; all cables to be hove well taut; particular attention should be paid to the rise and fall of tide, taking care to heave in shore, immediately the water rises, and remains above high-water mark, as there is scarcely any ebb for one or two days previous to a fresh. Every precaution should be taken to prevent the vessel shearing as you heave, in keeping booms ready to boom off from the shore; a strict look-out should be kept, to ascertain when the water begins to fall, taking great care to heave off as the water falls. After a heavy fresh, it would be advisable to sight your anchors, or in all probability you will lose them. The rise of water in a heavy fresh is twenty feet above high-water mark; the general rise and fall in the river as far up as the town, is twelve feet."

In our fourth number, at page 222, will be found some further observations on the harbour of Oporto.

75. REMARKS on the Passage from England to Maranham, by
Lieut. E. STOPFORD, commanding H. M. Schooner Pickle.

Vessels bound to Maranham may cross the Equator in long. 40° W. which will enable them to fetch the Lançoes Grandes, a landfall deservedly recommended by Baron Roussin. It has been customary to make the lighthouse on the island of Santa Anna, but an error in the longitude will be of less importance by making the Lançoes Grandes.

A vessel arriving off Santa Anna, and not having sufficient daylight to find her way into the bay of St. Mark, may lay to for the night off and on the lighthouse, keeping it as near south of her as possible, distant 6 or 7 miles. The light is revolving and can be seen distant about 15 miles.

As there is constantly a heavy swell on the coast, anchorage should be avoided if possible, as it is both difficult and dangerous to recover the anchor.

From Santa Anna a vessel should steer W. $\frac{1}{2}$ N. ; by doing which she will pass the breakers of Coroa Grande at the distance of about 3 miles, and Mount Itacolomi will be discovered, bearing about west. When distant about 10 or 11 miles from the Mount, alter course to S. $\frac{1}{2}$ W. till the fort and flagstaff of St. Mark's are made out nearly ahead. St. Mark's point should not be passed at a greater distance than a mile and a half, that the bank of De Cerca (on the starboard hand going in) may be avoided ; a reef of rocks run off from the point ; and, to avoid these, it should not be approached within three-quarters of a mile. Within these limits a vessel may coast along until Fort Antonio bears E. or E. b. S. when she should anchor, and wait for a pilot.

A vessel, by following the above route to Maranham will avoid getting entangled among the swash-ways on the Coroa Grande shoals, mentioned by Captain Courtenay as being so very dangerous to strangers. H.M.S. Mersey was nearly among these ; and the Kangaroo fortunately, after getting among them, passed over in safety.

The inhabitants of Maranham, in consequence of their harbour filling up, expect to be obliged to transfer their port of shipment to Alcantra. Lieut. Stopford visited this port, and is of opinion, that it is preferable, in every respect, to Maranham, being easier of access, capable of containing more ships, and allowing them to get in or out, at any time of tide, with the prevailing winds. The depth of water is also greater. The Pickle was anchored about one-third of a cable's length from the shore, in 7 fathoms, at low water, being more than in any part of the harbour of Maranham, even at high water.

Captain Courtenay represents the bottom, along the whole line

of coast, as being composed of quicksands, to which he attributes the frequent loss of anchors by vessels. Lieut. Stopford is of a different opinion, having frequently anchored on all parts of the coast between Maranham and Para. It is, however, indispensable, that vessels should ascertain the quality of the bottom before anchoring, as it is foul in many places. The Pickle lost her small bower before Lieut. Stopford was aware of this, by anchoring on rocky ground. Vessels should be careful not to anchor off St. Mark's point, as the ground is foul, and many anchors have been lost there.

Route from Maranham to Para.

A vessel bound from Maranham to Para, during the rainy season, should get to the northward of the Equator as soon as possible. She will thus avoid the light baffling winds and calms which prevail in this season; and also the current, which sets from E.N.E. to S.E. about two or three miles per hour, occasioned by the water from the various rivers and bays of the coast.

To the westward of the island of Selina there are some white cliffs so nearly resembling those to the eastward of that island, that they have frequently been mistaken for each other. Vessels mistaking the western cliffs for those East of Selinas, have stood on till they have become lost on the Braganza Shoal, or in that equally dangerous place, called the Well. Lieut. Stopford has been informed, that nearly all the losses that have occurred at the mouth of the Amazons have arisen from this cause. The utmost caution is, therefore, necessary to attend to the following directions for anchoring at Selina:—

Bring the town of Selina to bear S. b. E. and anchor in 9 fathoms. The whole coast from Turnivassa is woody, and the white sand-hills are very remarkable.

We have extracted the following from an American paper; and, as the signals appear to agree with those mentioned by Lieut Stopford, vessels should strictly attend to them, when they have gained the anchorage off Selinas:—

“NAVY DEPARTMENT.—*Information obtained from Senhor Saramanhas, the Chief Pilot, Lieut. Page, Commander of the U. S. Schooner Boxer, at Para, S. America.*

“1. A flag hoisted on the flag-staff at Selinas village, is the day-signal that a pilot may be obtained.

“2. If the pilot should not, however, come off during the day, and at night there be shown two lights, the pilot may be expected off the following morning.

“3. If there be three lights shown, the Pilot has no boat, and must have one from the vessel to bring him off; in which case the vessel must bring the village of Selinas to bear south south-west, in soundings of five or six fathoms water, when point Atalaia, (improperly called in the Charts, Atasia,) will be distant about five miles. You may here despatch a boat, well manned, which

must keep close in with the shore of Atalaia, clear of the surf, until it meets with an opening in the reef which lines the coast in front of the village, through which it must pass. Inside the reef, the water is quite smooth, and you may land any where upon the beach.

"4. The boat should be sent at half flood, in order that it may return the same tide. It is high water, on full and change, at 7 o'clock, and off-shore at 8 o'clock.

"Para, June 1, 1832."

H.M.S. Pickle remained at anchor one night, in 7 fathoms, with the town bearing S. b. E. and had no difficulty in regaining her anchor in the morning. Lieut. Stopford observes, that accidents have frequently happened, and lives have been lost, by boats going for the pilots, being swamped in the surf. They have frequently landed immediately under the town, which is very wrong, and Lieut. Stopford recommends them to pass to the westward of the island; by doing this, a river will be observed, which leads up to the town, where boats may land in safety, and thereby avoid the surf outside.

76. CURRENTS OF THE ATLANTIC.

We are anxious to place the following extract from the Greenock Advertiser on record, as affording a remarkable instance of that tendency of the polar waters in our hemisphere to run towards the equator, to be returned again by the constant effects of the Gulf stream.

"In the fall of 1830, a gentleman, on board the *Camillus*, in compliance with a bargain made before he left Greenock, sealed up a letter, addressed to a friend here, in a bottle, which he committed to the deep, about 400 miles to the N.E. of Newfoundland. On arriving in America, he wrote to his friend, informing him of what he had done; but nearly two years having elapsed without hearing anything of it, he gave it up for lost. On Saturday week it was brought to him by the letter-carrier, with the following endorsement: 'Found in a bottle at Grand Canary, April the 19th, 1832, and forwarded by his Majesty's Vice-Consul.'"

Allowing the bottle to have been thrown into the water in September, 1830, the distance it would have travelled in twenty months, (the time stated,) would be about 2000 miles, in a direct course, equal to a hundred miles per month, or about three miles and a half in each twenty-four hours. It is not improbable that it may have taken nearly this course; for as soon as it reached the northern limits of the Gulf stream, it would be drifted over directly towards the Canaries.

77. NEW LIGHT-HOUSES IN THE SLEEVE AND THE BALTIC.

Advertisements have recently appeared in the public prints, giving some particulars of these lights; but as they are evidently

very imperfect translations, we have considered it right to obtain authenticated accounts of them, rather than to risk misleading mariners by inserting these. In the mean time we may observe, that two of them are situated at the entrance of the harbour of Christiansand, on the south coast of Norway. One of these is on the island of Oxoe, to the east of Flekeroe, on the western side of the entrance; and the other is a harbour-light on the island of Oderoe.

A new light-house is also said to have been built on the north-east elbow of the island of Femeren, with the view of facilitating the navigation between the two belts and the Baltic. And a light-house of a novel kind is said to have been erected on Greisswald Oie, between Swinemumde and the island of Rugen in the Baltic. We hope to obtain a correct statement of these lights for our next number.

78. REMOVAL OF THE RED BEACON BUOY FROM THE SOUTH SAND HEAD OF THE GOODWIN.

“ Notice to Mariners.

“ Trinity-House, London, 6th November, 1832.

“The establishment of the Floating Light Vessel near the South Sand Head of the Goodwin Sands, having rendered it unnecessary to retain the Red Beacon Buoy at that station,

“ Notice is hereby given, that the said Beacon Buoy will be taken away forthwith.

“ By Order,

“ J. HERBERT, Secretary.”

79. ANCHORAGE IN THE ARCHIPELAGO.

Mr. R. Easto, lately employed in the Archipelago, and now commanding H.M.S. Jupiter, gives the following maxim respecting anchorage in the Archipelago :

“ Let it be observed as a general rule in the Archipelago, that it is always safe to anchor under the lee of an island or any land with northerly winds, as they never shift suddenly to the southward, but gradually die away, and allow time for a vessel to get up her anchor. But it is never safe to anchor under the lee of an island or any land with *southerly winds*, because they generally shift to the northward in a heavy squall.”

VOYAGES AND MARITIME PAPERS.

I. THE ARCTIC LAND EXPEDITION.

OUR readers are no doubt aware, that active measures are now in operation, to despatch a small party in search of Captain Ross and his companions, consisting of his nephew, Commander Ross, and the crew of his vessel. So desirable, so proper, and so important a measure, we trust is at length in a fair way of being accomplished. It is well known, that, since the summer of 1829, the year in which his vessel left England, nothing has been heard of her. Vain hopes and expectations have been formed that long before now she would have penetrated through Bhering's Straits, and have arrived in some distant port of the Great Pacific Ocean. But time has passed on, no such welcome tidings have been received, and the friends and relations of the whole party are left in an anxious and painful state of uncertainty as to the fate of Ross and his adventurous companions. Mr. Charles Ross, naturally alive to the perilous condition of his brother, has been most active in planning the present expedition, and soliciting attention to it. We are happy to find that he has so far succeeded as to have obtained the support of Government, and to have excited a generous feeling of sympathy among the most influential and leading men connected with Government and the naval profession. He has been no less fortunate in finding many able advocates to forward his views, not only with pecuniary assistance, but with their advice in directing the whole proceedings. The Hudson's Bay Company, with a noble liberality, have been the first to set the example, by sending out directions to prepare provisions for his party, when it was yet uncertain whether his wishes would be accomplished; others have liberally promoted the undertaking, and Captain Back, the intrepid companion of the celebrated Sir John Franklin, has well seconded the humane purpose, by offering to conduct in person the proceedings of the expedition. So far, we may say, Mr. Ross could not have succeeded better.

A meeting took place on the 1st of November, to promote the expedition; at which Vice-Admiral Sir George Cockburn presided, and gave an historical sketch of the whole design in the following terms:

"It will be generally admitted that an officer like Captain Ross, who has devoted his time to the service of science, and has braved in its pursuit the dangers of unknown and ungenial climes, demands the sympathy and assistance of his countrymen. Great Britain has taken the lead in geographical discovery, and there is not one in this country who does not feel pride and honour in the fame she has attained by the expeditions of Parry and Franklin. But

if we wish to create future Parrys and Franklins, if we wish to advance British enterprise and courage, we must prove that the officer who is out of the sight of his countrymen is not forgotten, that there is consideration for his sufferings, and appreciation of his spirit. This reflection will cheer him in the hour of trial, and will permit him, when surrounded by dangers and privations, to indulge in hope—the greatest blessing of man. All know that in 1817 Captain Ross had been employed by the Admiralty to explore Baffin's-bay, and more particularly the north-west passage; all are aware of the skill he displayed in this service. In descending, however, along the western coast, an opening was mistaken by him for an inlet, and the consequence was, that the expeditions of Parry and Franklin were fitted out, which left but a very small part of that coast unsurveyed. It was natural that Captain Ross, a man of sensitive mind, should feel hurt that the object of his exertions was thus, as it were, torn from his grasp, and that the mistake he had made should prey on his feelings. Accordingly, as soon as the Government, finding that the passage could be of little practical utility, had determined to go to no further expense, a ray of hope flashed across his mind that he should re-establish his character. His friends, with an honourable liberality, fitted out an expedition. A steam-vessel was prepared; but, as if misfortune was always to pursue Ross, his crew mutinied. Prudence would have dictated to him the propriety of abandoning the expedition here, but the acuteness of his feelings would not allow him to suffer a chance to be lost. His first object was to reach the wreck of the *Fury*—a vessel, indeed, the fate of which proved the necessity of having two strong ships for such an expedition. It was probable he had succeeded in this, but his vessel could scarcely resist the pressure of the ice, and he, with his nineteen companions, would therefore occupy the *Fury*. If this was their actual position, they had the means, indeed, of maintaining themselves in it, but none whatever of escape, without assistance from their countrymen. It was possible that this gallant band often ascended a rising ground, in the hope that they were not forsaken by their countrymen; and that they would not be left to perish without a hand being stretched forth to save them. I will not believe that nineteen sailors, who had felt no hope of gain but the advantage that would result from their exertions to this country, will be allowed to return in vain, at every season of darkness, to their miserable night, without a struggle being made for their lives. £3,000 would be sufficient for this purpose, and I cannot imagine that in London, where so much is contributed to ordinary charity—where the East India Company, the Trinity-house, and the Merchants' Companies are—there will be a difficulty in raising such a sum. It is impossible. An officer, Captain Back, acquainted with the country, has, in a very manly manner, offered to conduct

the expedition. Government also is not reluctant to lend its aid. Lord Goderich has not only taken a personal interest in the case, and contributed very liberally, but has recommended a grant from the Treasury of £2,000. Mr. Hay, the Colonial Under-Secretary, feels as much anxiety as I do. Thus assisted and encouraged, the expedition cannot be allowed to fall to the ground. Of Captain Back's ability, there can be no doubt. On a former occasion he has saved the lives of a similar party, and, if assisted with money, I have not the slightest doubt of his succeeding in the objects of this expedition. Should it unfortunately happen that our countrymen are no longer alive, yet their fate at least will be ascertained, and, moreover, the survey of the north-eastern coast of America will be completed."

The appeal of Sir G. Cockburn was not made in vain: a liberal subscription was at once commenced, and a committee has since been formed, to regulate the expenditure of the sums collected.

In our last number, we gave a sketch of the route proposed to be adopted by Captain Back. We will not stop to inquire why this undertaking was not set afoot before. When we reflect on what may be the probable condition of Captain Ross, our most strenuous exertions shall be devoted towards promoting it now. Captain Ross had a stock of provisions, when he sailed, which it was calculated would last three years; and there is good reason for believing, that he and his party might augment that stock, by the addition of seals and walruses, even if he did not succeed in reaching the wreck of the *Fury*. It may, therefore, be reasonably concluded, that they have not fallen victims to hunger among the many dangers by which they would be surrounded: but while one plausible reason can be advanced for believing that they may still be safe, humanity demands the immediate employment of all our efforts to rescue them from their perilous condition, ere yet it be too late. Should even our worst fears be realized, should they have already perished, can we calmly dismiss such thoughts, without making the smallest attempt to ascertain whether it has really been so—to find out at least what has been their unhappy fate?

England stands acknowledged as the great depository of freedom, knowledge, and religion; and with blessings such as these, and that unrivalled character as the advocate of every humane design to which her numerous and splendid charitable institutions entitle her—shall it be said of us, that we permitted nineteen of our countrymen to depart from our shores on a perilous voyage; and, after an absence of more than three years, when there existed a probability of their prolonging a miserable existence in the hopes of relief being sent them, that we withheld that relief? Shall we allow it to be said of us by the rest of the world, (as it assuredly will be, if we do not timely prevent it,) that we cared not for them? that we thought of their sufferings with apathy,

and were indifferent to the terrors that awaited them, when it was our duty to succour them, and a trifling *general* subscription would enable us to do so? Let us not then become the scorn of surrounding nations, by omitting such a duty. We call on *all* our countrymen (for it is a national cause) to avert so foul a charge. We call on them every where to follow the splendid example set them by some truly philanthropic individuals, and to contribute as well as they are able, towards the equipment of this expedition. The agents for the Nautical Magazine being duly authorized, will gladly transmit to the committee any sums which they may receive, to promote the 'Land Arctic Expedition.'

Too much cannot be said of the laudable conduct of Captain Back in coming forward, as he has done, to lead the party; but it must be remembered, that his exertions will necessarily be limited by the means placed at the disposal of the committee. The sum required is not yet subscribed, but we do sincerely trust and hope that no ill-timed parsimony on the part of our countrymen, will paralyze the efforts of this gallant officer, in a cause which is founded in humanity, and cannot fail to be advantageous to science.

II. NOTES ON THE ISTHMUS OF DARIEN, AND THE PROPOSED RAIL-ROAD BETWEEN CHAGRES AND PANAMA.

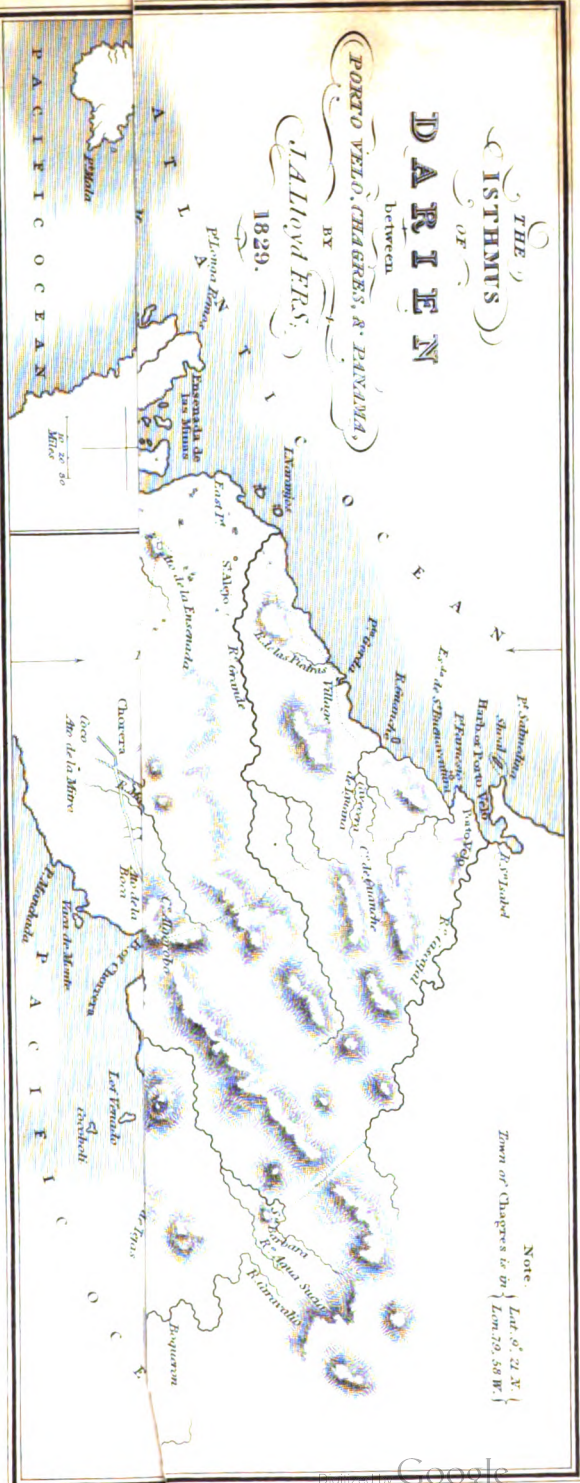
A COMMUNICATION between the Atlantic and Pacific Oceans by means of a rail-road or canal, has been long in agitation, but it was not before the observations of Mr. Lloyd, an officer of General Bolivar's staff, were made, to obtain the difference of level between these seas, that any measures were adopted for the construction of either. And it is yet uncertain whether the exertions of the inhabitants of Panama to effect it will be finally attended with success.

In the course of his servitude with General Bolivar, it had long been a desideratum with Mr. Lloyd to survey the isthmus, and, by a series of observations, to ascertain the actual difference of level between the two oceans, as well as to discover the most eligible line for a communication between them. In November, 1827, he received permission from the General to make this survey, and succeeded to his wishes. The result of his operations has been published in the Transactions of the Royal Society for 1830.

The isthmus of Darien, or, as it is commonly called, 'Panama,' may be considered to lie between the meridians of 77° and 81° west of Greenwich, the narrowest part of which, between the mouth of the river Chorrera and the bay of Limon, is about thirty statute miles across: this breadth, however, is not uniform, but increases considerably at the two extremities.

THE
ISTHMS
OF
DARIEŃ

POKTO VELD, CHAGRES, & PANAMA,
BY
J. ALLOYE ERSS,
1829.



J. C. Walker Sculp.

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Mr. Lloyd tells us, that "there is hardly a mile of land in this whole province, which is not, in the rainy season, intersected by some little river or *quebrada*, which carries off the superfluous water, and is occasionally difficult to pass." The only rivers worthy of notice are the Chagres, Pequeni, Trinidad, and Gatun, which unite with the former, and fall into the Atlantic: the Rio Grande, the Chorrera, the Pacora, Indio, and Baliano or Chepo, fall into the Pacific. We shall confine our observations here to the Chagres and the Trinidad, as being those which it is proposed to make use of in the line of communication pointed out by Mr. Lloyd.

At a considerable distance east of Porto Bello, among the high mountains near the Bay of Mandingo, the river Chagres takes its rise, and, after traversing a considerable extent of country, forms, with the junction of the Pequeni, a fine river, running with great velocity. At Cruces, a town on its left bank, distant twenty-three miles in a direct line from the sea, it runs about three miles and half per hour in the rainy season. Of this river, Mr. Lloyd says, "Few rivers of its size present more beautiful scenery on its banks than does the Chagres above Cruces. For miles together, it is bounded by enormous, abrupt masses of limestone, of the most curious and fantastic forms; in other parts, savannas extend to the very edge of the river, covered with a particularly fine grass called *grammalotti*, and the noble bongo tree is seen studding the banks, something in the shape of a well-trimmed yew-tree, but growing to a much larger size. In most places the river is shaded from the sun's rays by a large tree, called *jigeron*, which extends its branches across the river, its leaves being eagerly sought for by the fish. The water generally runs over a bed of various description of pebbles, and is, in summer, most brilliantly clear. In many places, near its source, it is much wider than at its mouth, occasionally breaking into distinct channels, and forming small islands; but, in the rainy season, these are all connected, and constitute one broad stream, with strong sets and eddies, caused by the abrupt turns, which render its navigation peculiarly perilous. Many years ago, from repeated and long-continued rains, the river rose, until it arrived at the foundation of the church at Cruces, situated on a gentle eminence, about forty or fifty feet above the present level; the greater part of the town was submerged, and no intercourse could take place among the inhabitants for some weeks, unless by canoes. But towards its mouth, as far up as the river Trinidad, it has never been known to rise more than six or eight feet, and this height the banks easily confine."

The river Trinidad takes its rise at a short distance from the south shore of the isthmus, and near the town of Chorrera. It is navigated by canoes of various descriptions, which are employed to bring down produce from Capua, a large town lying to the

south-west of Chorrera to Chagres. After passing through a considerable extent of country, it enters the Chagres at about twenty-four miles from its mouth, having previously become a large river. The navigation of the Chagres below this junction is easy and is even considered by Mr. Lloyd "superior to that of many much larger streams." Above Gatun the depth is generally twenty-four feet, and below that place it varies from twenty-six to thirty feet. The breadth varies from 200 to 380 feet, and the depth is not confined to the middle, but approaches each bank of the river. The current is moderate, the banks formed of porphyry and trap rock, are precipitous, and the depth of water will admit of vessels being brought close to them. At present they are covered to the water-side with wood.

The communication across the isthmus has hitherto been carried on by two lines of roads, one of which extends from Panama to Porto Bello, and the other from Panama to the town of Cruces in the middle of the isthmus, and from thence down the river Chagres to the port of that name on the Atlantic side.

The state of the various roads during the rainy season is such, that they are at present scarcely passable. No care has been taken to avoid steep ascents in their course, as, whether they are level or not, is equally the same to the mules that have to travel them. Nor are the ravines avoided, for a large portion of the road to Gorgona forms the bed of an important stream during the winter season. Of these roads, however, that between Panama and Porto Bello is by far the worst.

The object of Mr. Lloyd being to point out the best line for a canal or rail-road, he has recommended the following:—Commencing a canal on the Atlantic side of the isthmus, at the bay of Limon, called also the Navy bay, about five miles east of the mouth of the Chagres, he would conduct it to that river, as shown in the plan, to a part that approaches near to the bay in its course; from thence proceeding up the river to a favourable situation on the south bank of the Trinidad, and from thence direct to Panama or Chorrera by a rail-road, as marked in the plan. The latter of these two places is the shortest distance, but the former is preferable on account of its being the capital, and having a better sea-port, in Mr. Lloyd's opinion. The relative situation of these places will be seen by a reference to the plan at the commencement of this number.

Porto Bello is justly considered as one of the most unhealthy places in the isthmus; it is such, that no inhabitants can live there long; and even animals, with the exception of pigs and mules, waste away, and shortly die. In fact, it is called "la sepultura de los Europeanos." In consequence of this, the principal communication is by the Chagres, although this river has a bar of rock across its mouth, on which the deepest water is fifteen feet. There is generally a heavy surf on it, which is dangerous to vessels, and

those drawing twelve feet water can only cross it at the most favourable time.

To avoid this impediment, Mr. Lloyd selected the bay of Limon for the commencement of a canal, as it can be approached with safety by night or day. The anchorage is generally good throughout the bay, but as it is entirely open to the north, Mr. Lloyd proposes a break-water to be formed across it, to seaward of the coral rock, which abounds there in great plenty. This rock, he says, is impregnated with a gelatinous matter which gives it the property of adhering to any thing in contact with it under water. The texture of it is close, and, when first dug up, it is as easy to work as chalk; but, on exposure to the air, it becomes very hard. The bottom of the bay is formed by a regularly curved beach of tenacious sand, bounded by a bank a few feet above high-water mark, composed of shells. The anchorage in the bay is much frequented by British vessels; in consequence of which, it is generally called "Navy Bay," and decreases regularly in depth from six to one and a half fathom, close to the shore. The bay of Limon has also the advantage of Porto Bello in point of salubrity; and it is supposed, that when the surrounding woods are cleared away, that it will be still more improved in this respect. A range of cocoa-nut trees are next to the sea; these are succeeded by mangroves, and afterwards by dense forests.

From the bay of Limon, the distance, by the proposed canal to the river Chagres, is two and a half miles; the ground being generally level, and composed of stiff clay. No locks would be required, as the mean height of the river at the point where it would join the Chagres, is nearly the same as that of the ocean.

Vessels having reached the Chagres river by the proposed canal, the navigation to the river Trinidad would be attended with no difficulty whatever, and, having ascended it a short distance, they would arrive at the point from whence Mr. Lloyd proposes to commence a rail-road to Panama. The direction he assumes for this, lies between the different groups of mountains along a low flat country, and the length of it is about thirty-eight miles; or, were that route adopted leading to Chorrera, the distance to the sea will be about twenty-nine miles.

The inhabitants of Panama have always evinced a peculiar turn for commercial pursuits, and, a few months ago, a company was formed there, for the purpose of carrying Mr. Lloyd's plan into execution. The estimated expense was 400,000 dollars, and, although the riches of the inhabitants are not, for the most part, very great, a fourth part of this sum was shortly subscribed. The most wealthy and influential of the natives were at the head of this company, and the cause was warmly espoused by the British consul, Mr. M'Gregor, whose patronage was likely to add no little to the stability of the undertaking. An exclusive privilege was granted to him, by which he had the power of preventing any foreigners,

excepting his own countrymen, from joining the company. The persons who were the principal promoters of the undertaking in Panama, are Don Manuel Hurtado, and a merchant of large property named Paredes. The latter received his education in Europe, and has imbibed, with a large store of information, much liberality of sentiment; the former was some time the resident minister of Colombia in London, is now the richest man in the isthmus, and is much respected by all who know him.

In the midst of their progress, the sudden withdrawal of Mr. M'Gregor has thrown the whole company into consternation, which appears likely to defeat the present attainment of their object, if it does not terminate in their final separation. The principal shareholders are much inclined to leave the isthmus, if no prospect shortly appears of executing the plan. They are entirely at a loss how to act, and it is the prevalent opinion that it will fall into the hands of the people of the United States,* who are well aware of the importance of opening this communication.

The results, in a commercial point of view, that would attend the opening of a communication between the two oceans, can scarcely be anticipated in their unbounded extent. The states of central America would be the first to derive benefit from it—a stimulus would be given to the sluggish trade on the coasts of Peru, Chili, and Mexico, rich and plentiful as they are in all kinds of valuable productions. The tedious and dangerous navigation in passing Cape Horn would be avoided; and the most distant shores of the great Pacific Ocean would be rendered, comparatively speaking, easy of access. The beautiful and spacious bay of Panama would be constantly the resort of numerous shipping, and the passing and repassing of steam-boats would tend still further to expedite the trade. New and vast sources of riches would be opened each day, and a new era would be formed in the commerce of the world. We will close these observations with some remarks on the climate of the isthmus, with which Mr. Lloyd has furnished us in the journal of the Geographical Society.

“The seasons are two—summer, or dry; and winter, or rainy. The first commences about the end of December, and lasts till April; the latter continues from April to December. The quantity of rain which thus falls in the year is prodigious; but its amount varies in different places. The clouds hang chiefly over the wooded heights; and at Porto-Bello, in particular, which is closely hemmed round by them, the rain descends in torrents, frequently accompanied by storms of thunder and lightning, of the most terrific description. Where the ground, to any extent, is level, however, and has been cleared of its wood, a great difference is perceptible; and at Panama the following alternations may be observed. In April the weather becomes cloudy about noon; but after drizzling for half an hour, clears up. In May, from nine to eleven, it is dull,

* We perceive by a paragraph which appeared in the *Morning Herald*, of a recent date, copied from the *American Rail Road Journal*, “that an American company has it in contemplation to open a passage for ships through the Isthmus of Panama.” We have, however, been unable to obtain any account of this company from a well-informed American gentleman.

with slight rain; the afternoons being still fine. In June there is rain every morning and evening; but the mid-days are fair. As the season advances, the rain gradually increases; and is incessant throughout July, August, September, and October. In November the nights are always wet and cloudy; but through the day the sky begins to break. December brings a further improvement. And in January, February, and March, a shower of rain is as uncommon as a gleam of sunshine at the other season of the year.

“One very remarkable phenomenon occurs throughout the whole isthmus. On the 20th of June the rain ceases for five or six days; the sun shines out during the whole day with the utmost splendour; nor is any instance known of irregularity in the recurrence of this break in the ordinary course of the season. It is accordingly reckoned on with great confidence by the inhabitants, kept as a period of social enjoyment, and called *El veranito* (or little summer) *de San Juan*, either from the feast of St. John, which is nearly coincident in time, or, as others say, from the village of San Juan on the Chagres, about twenty-three miles from Panama, where the phenomenon is peculiarly observable.

“The temperature and salubrity of the climate also vary in different places. Porto-Bello is one of the hottest and most unhealthy places in the world. At Panama, on the contrary, the thermometer in the rainy season does not rise higher at night than 82°; in the day than 87°: the winds are variable and cool; and though the rain is incessant, there is thus no stagnation in the atmosphere, nor consequent epidemic sickness. In summer, the temperature rises to 90°, and even 93°; and in the day, the reflection of the sun from the smooth surface of the Pacific, with the heat of the winds which blow steadily from the south-east over a tract of dry savannas, makes it very sultry; but the land-winds at night are cool, coming chiefly from the adjoining mountains: and the climate may be called generally healthy, though a considerable mortality sometimes occurs. ‘This, however, Mr. Lloyd thinks, may almost always be traced to excessive indulgence, especially in the use of raw fruits and vegetables, and occasionally also to the quality of the animal food, which, at particular seasons, is, he thinks, injuriously affected by the excessive richness of the pastures. The family of the British consul resided four years in Panama without an hour’s sickness; and Mr. Lloyd and his companion were seventeen months in the country, during the whole time exposed to the utmost rigour both of sun and rain, yet with entire impunity.’”—p. 78, 79.

There is one point worthy of remark, resulting from the observations of Mr. Lloyd, respecting the tides of the two oceans. The greatest rise and fall of tide at Chagres is scarcely a foot, while that at Panama is about eighteen or twenty feet, the mean level of the Atlantic being about half-way between the high and low water levels at Panama. Sooner or later we expect to see this communication opened, as the narrowness of the isthmus appears designed by nature for such a purpose; and, if British capital is to be employed in it, no time must be lost.

III. THE TRIAL CHRONOMETERS AT THE ROYAL OBSERVATORY.

ONE of the first effects of peace in all civilized countries is the advancement of the arts and sciences; and of the numerous acquisitions which they have made in England during the last few years, the perfection of the chronometer is not the least important. The consequence and value of this machine to a country so ‘essentially

maritime' as Great Britain, has justly obtained it the attention and patronage of Government; and for the last ten years, its improvement has become the object of national reward. In fact, the sum of £500 has been annually expended with this design, in the purchase of the best chronometers that the country can produce. Previous to the year 1828, that sum had been divided into £300 and £200 for the purchase of the two best chronometers; but since that time it has been distributed among the three best, in the proportion of £200, £170, and £130, according to their respective qualities. We shall see that this measure has been attended with salutary effect, for, while it has encouraged the art of constructing the chronometer, it has secured the best of them for the use of the Royal Navy. It has also excited an honourable competition, which has been the means of bringing them to their present perfect condition; one which, until some fresh discovery takes place in their construction, does not seem likely to be surpassed. Another good effect has attended this measure, on the part of Government. Until the establishment of trial chronometers at the Royal Observatory, the public had no criterion to guide them in deciding on their merits, and consequently their proportional value. Until the absolute daily rates were published in their regularly monthly forms, as they are found by comparison at the Observatory, the dark ages of the chronometer may be said to have prevailed: for a veil of darkness hung over the performance of this invaluable machine, and all was uncertainty and conjecture respecting it. The fame of a solitary one now and then broke through this spell, and we heard of its making the land to a mile; but this was considered a *rara avis*, and the owner of it fortunate in his possession. Even Government knew nothing about it, for it was not satisfactorily established what constituted a good chronometer. But by the rigid trial which they underwent, the good were soon distinguished from the bad, and the state of the art in this country was quickly ascertained.

In 1822 the system of the trial chronometers at the Royal Observatory was established, and in order to ascertain the condition of the art, a reward of £300 and £200 was offered by the legislature for the two best chronometers. Notice was published, that any chronometers might be sent to the Royal Observatory, on trial, for the reward, provided that they were the property of the depositor, and that he was a chronometer-maker by profession. As might be expected, chronometers rushed in from every quarter; for, on referring to the printed monthly reports of the Observatory, we find no less than thirty-one were deposited; and it is to be presumed, that those who sent them were their makers, whose names they severally bore.

The result of the first trial was, that, according to the method of deciding on their qualities, the trial number of one Barraud's,

No. 957, was 11,29 seconds, while that of Pennington, 154, was 12,87 seconds; results very different from those of the present day, but sufficient to shew the condition of the art.

We will here take the opportunity of shewing the method by which the merits of a chronometer are decided by what is termed its trial number; a method which we believe was proposed by the late Dr. Young, being the result of an extensive mathematical reasoning.

The trial number is derived from the following formulæ; and the superiority assigned, accordingly, to the smallness of this number.

Put R = the greatest *mean monthly* rate, per diem.

r = the least do. do.

R' = the greatest *daily* rate in each month.

r' = the least do. do.

n = No. of months trial.

Make $(R' - r') = z$

And put $z, z', z'', z''',$ &c. for each successive month.

The Trial No. then is

$$2(R - r) + \frac{1}{n} \times (z, z', z'', z''', \&c.)$$

$$= 2(R - r) + \frac{\Sigma(R' - r')}{n} \text{ where } \Sigma \text{ denotes the successive sums of } z, z', z'', \&c.$$

That is by taking the difference of the greater and lesser mean monthly rate, and multiplying the same by 2, and adding thereto the mean of the monthly extreme variations.

Example.

	Mean Rate.	Extreme Variation.	
1830. October..	-0,69	.....	0,9
November	-0,54	.....	2,1
December	-0,85	.....	2,0
1831. January .	-0,67	.....	1,8
February	-0,58	.....	1,1
March ..	-0,54	.....	1,1
April	-0,31	.....	1,2
May	-0,76	.....	2,0
June	-0,95	.....	1,3
July	-1,01	.....	1,9
August ..	-0,82	.....	1,4
September	-0,60	.....	1,5
	Mean.....		1,53
			Greater Rate in July -1,01
			Lesser do. in April -0,31
			Difference..... 0,70
			Difference $\times 2$ 1,40
			Mean of Extreme Variation, 1,53
			Trial Number 2,93

Thus instituted, the annual trials proceeded regularly at the Observatory; and at the commencement of the 6th trial, in July, 1827, a notice was given, that 'No chronometer is to be entitled to the first premium if the trial number shall exceed six seconds, nor to the second if the trial number shall exceed ten seconds. This at once shews that it had been tolerably well ascertained what were the limits to be allowed to a good chronometer. We have

seen that 11^s,29 and 12^s,87 had been the trial numbers of the two first best chronometers, and we now find it determined that six seconds was to be the trial number for the first prize; and that unless the second chronometer came within ten seconds, it was not to be entitled to a premium; both of which limits were within those of the best at the commencement.

In the trial of 1828, the distribution of the whole sum of £500, into three portions, took place in the manner we have before observed, and the trial numbers were respectively established as follows:

For the 1st premium of £200	not exceeding 5 seconds.
For the 2d	£170 not exceeding 6
For the 3d	£130 not exceeding 7½

Shewing a reduction of one second in the trial number for the first premium; of four seconds, in that for the second; and for the third, a number two and a half seconds less than that which had been first established for the second.

In November 1831, at the commencement of the tenth annual trial, the limits of the trial numbers for obtaining the premiums were again reduced, and established as follows:

For the 1st, not exceeding 3½ seconds.	
..... 2d,	4½
..... 3d,	6

Thus making the third-rate chronometer as good as the second of the former trials; the trial number of the second within half a second of that of the first in the former trials, and the trial number of the first a second and a half less than the first of the preceding trials. This alone furnishes us with a tolerable criterion to judge of the state of the art in 1831, compared with what it was in 1821.

The tenth annual trial has just terminated, and we find a still further reduction in the trial numbers, which now stand as those established for the eleventh trial. They are as follows:

For the 1st, not exceeding 2½ seconds.	
..... 2d,	3½
..... 3d,	4½

Shewing another reduction of one second on the two first, and a second and a half on the limits of the third trial number. It might be asked, can these limits be attained by a chronometer? to which we may reply, that they have been; and if the first should not be reached, Government will be no loser, as it will still have the best chronometer, and the maker will obtain a handsome reward.

We shall now lay before our readers the following table, shewing the prize chronometers since the first establishment of the trials, the names of their makers, their trial numbers, and the number of chronometers deposited at the Observatory to compete for the prizes at the commencement, and the number left at the end of each annual trial.

A STATEMENT OF THE CHRONOMETERS THAT HAVE OBTAINED PRIZES IN THE ANNUAL TRIALS AT THE ROYAL OBSERVATORY AT GREENWICH.

Year.	Premiums.	Makers' Names.	Residences.	No. of Chronometer.	Trial Number	Actual Extreme Variation in Twelve Months.	Extremes of Thermometer.	Number of Chronometers	
								Deposited for Trial.	Left at the End of the Trial.
1823	First..	Mr. BARRAUD	Cornhill	957	1129	3,86	25 to 80	31	18
	Second	Mr. PENNINGTON	Camberwell	154	12,87	5,13			
1824	First..	Mr. MURRAY	Cornhill	816	4,44	1,11	34 to 70	36	18
	Second	Mr. CATHRO	Kirby Street, Hatton Garden	1512	6,84	1,88			
1825	First..	Mr. WIDENHAM	East Street, Red Lion Square	929	5,44	1,80	36 to 70	31	9
	Second	Mr. FRENCH	Royal Exchange	1640	6,12	1,85			
1826	First..	} Mr. FRENCH	} Royal Exchange	372	2,62	0,61	25 to 82	48	13
	Second			975	3,46	0,99			
1827	First..	Messrs. M'CABE & STRACHAN	Cornhill	167	4,68	1,50	29 to 79	59	16
	Second	Mr. YOUNG	Islington	78	5,65	2,00			
1828	First..	Mr. GUY	Radnor Street, City Road ..	1410	4,41	1,41	35 to 78	58	25
	Second	Mr. YOUNG	Islington	85	4,52	1,23			
1829	First..	Mr. DENT	43, King Street, Long Acre	114	2,27	0,54	29 to 73	79	26
	Second	Mr. CARTER	Tooley Street	131	3,80	0,79			
	Third..	Mr. MOLYNEUX	44, Devonshire St. Queen Sqr.	943	4,00	1,28			
1830	First..	Mr. BAKER	6, Angel Terrace, Pentonville	865	3,59	0,98	28 to 80	57	23
	Second	Mr. CARTER	Tooley Street	137	4,04	1,09			
	Third..	Mr. MURRAY	Cornhill	640	4,34	1,13			
1831	First..	Mr. COTTERELL	163, Oxford Street	311	2,93	0,70	27 to 78	73	29
	Second	Mr. FRODSHAM	Change Alley	2	3,65	0,86			
	Third..	Mr. WEBSTER	43, Cornhill	665	3,73	0,89			
1832	First..	Mr. MOLYNEUX	_____	1038	2,82	1,49	39 to 78	62	23
	Second	Mr. YOUNG	_____	110	2,97	1,3			
	Third..	Mr. WEBSTER	_____	695	3,09	1,4			

A glance at the foregoing table will shew the truth of ^{wo. ou} observation on setting out—that a degree of perfection has ^{been} attained in the construction of the chronometer which is not ^{likely} to be surpassed until some further discovery be made in it. This must be directed to the balance-spring, and what is termed the ‘compensation’ in the balance-wheel, or the allowance for change of temperature, in which the whole art of chronometer-making now lies. Mr. Arnold’s escapement has rendered that part of the construction as complete as can be desired at present, although it is said not to be adopted by our neighbours the French; and his new lever compensation is a material improvement on those of the circular construction, although the latter display a depth of ingenuity, and acquaintance with the principles of the art, which can only result from many years application to it.

Many ingenious and highly interesting experiments have been made on these parts of the chronometer, with the view of leading to some discovery respecting them—an account of which we hope to give our readers in some future numbers of our work. Mr. Arnold has already had twelve chronometers deposited at the Royal Observatory, during the last six months, for the purposes of experiment, by the permission of the Lords Commissioners of the Admiralty; and as a proof of his zeal for bringing the chronometer to perfection, he is anxious to place the sum of £100 in the hands of a public board, to be the reward of any *practical* maker who will simplify and improve the performance of the machine.

IV. *Vindication of Mr. Oliver Lang's Claims to the Invention of the Safety Keel, and the method of Midship Magazines, as adopted in His Majesty's Navy, in reply to a paragraph in a recent number of the Portsmouth Herald.*

“Hay casos en que es forzoso hablar de si mismo.”

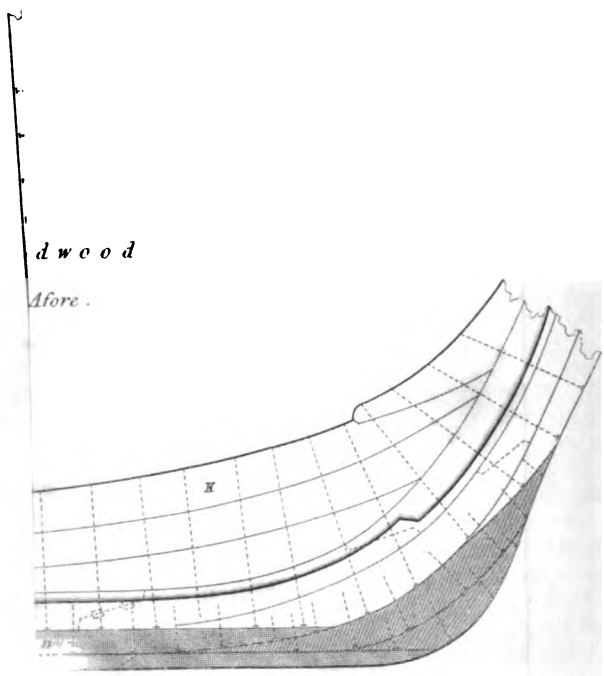
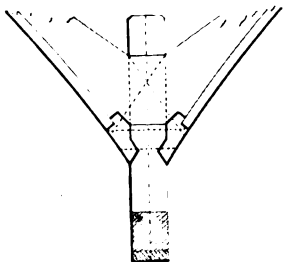
In a former number of this work, we presented our readers with a sketch shewing the method of forming the keel and garboard strake of H. M. S. Vernon, as invented by Mr. Lang, master shipwright of Woolwich Dockyard. The merit of this invention consists in effecting one great desideratum in the art of ship-building, namely, that, in the event of a ship striking the ground, the planks and outer keels may be torn away by the rocks without any water, in consequence, being admitted into her, and her safety thereby endangered.

We little thought, in our humble attempt to give publicity to one of the most important and valuable modern improvements in naval architecture, that we should have brought on Mr. Lang

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CITY OF
BOSTON

Plans of a 7¹/₂ Gun Ship,
+ injury to the fabric.
in Ship *Ardena*, January, 1808.

Section at C.



Engraved by E. Turrell.

the charge of a want of originality in his method. Such, however, appears to be the case, as an anonymous writer in a naval paper, which stands high in our estimation, states, among other equally gross imputations written in a fretful strain, that "the same, or an extremely similar plan, was recommended to the Navy Board at least fifteen years ago, by Mr. Samuel Read, of Chatham Dockyard, and, *if we mistake not*, was adopted by Sir Robert Seppings in the *Satellite*." Having been the innocent cause of this 'want of originality' being imputed to Mr. Lang, we have been at some pains, through the medium of our "good-natured friend," to investigate his claims to it. Our opponent, be he who he may, has so far the advantage of us as to wear the mask of concealment, but we grant it to him. He has thrown down the gauntlet, and, that his assertions may not be received as truth, by remaining uncontradicted, we hesitate not to try a lance with him, in a temperament of mind far different to that which he has shewn towards Mr. Lang, for

"He is doubly armed whose cause is just."

In vindicating this gentleman from the charge of his anonymous assailant, by asserting his rightful claims to the merits of this invention, we shall

"Nothing extenuate, nor aught set down in malice."

and if, in the course of our remarks, the truths which we may advance be not palatable every where, they must not be construed in the accents of malevolence. We shall have no difficulty in proving that neither "the same" nor any "extremely similar plan" was recommended by Mr. Read. This gentleman has signed his name to a letter which appeared afterwards in the same paper, in which he states, that his plan possessed 'the advantage in simplicity.' Had he said 'utility' also, he would have spoken more to the purpose. In this, however, he would certainly have failed; so he has contented himself with merely asserting his claim to 'a *priority of idea*,' and, as he says, leaves it to rest on the *facts* he has stated. But as he has been rather sparing of his facts, we will add a few more, for the sake of perspicuity, in considering his claim to this 'priority of idea.'

Mr. Lang, while he was a schoolboy, in the year 1791, previous to his entering the dockyard service at Plymouth, was much given to constructing and rigging models of men-of-war and cutters. His chief amusement consisted in making and sailing these models, which were of all sizes, large, as well as small, and in trying experiments by forming their keels (which were frequently of lead) so as to be removed from the model, and replaced again at pleasure. Some of his schoolfellows, who are now living, well remember, and can attest to these early symptoms of a genius, which, when matured, produced the plan for forming the keel

in question. In the year 1793, Mr. Lang had commenced his duties in the dockyard at Plymouth, and it happened that three of our frigates, the *Druid*, the *Blonde*, and the *Crescent*, were docked there in that year in consequence of having lost part of their keels, and several planks being cut through near them by their running on the rocks off the French coast. Here then, for the first time, the idea presented itself to the mind of the young architect, of turning to account on the grand scale, the experience he had gained from his models of rendering the keel 'independent' of the vessel, in fact, "of divesting it of that primary importance in the carpentry of a ship, which the method of building allows it to possess; so that any accident happening to it, might not lead to the most fatal results," as Mr. Read very justly observes. Mr. Lang, however, was too young, and considered as too inexperienced for any of his plans of improvement to be entitled to trial in ships of war; and his talents, as it frequently happens with others, were fettered by the will of his superiors. His attempts were discouraged, and it was not until he became the overseer in the repairing of the *Hind* and building of the *Leonidas* frigates in 1805 and 1806, at Frinsbury, that he found an opportunity of accomplishing his designs.

In September, 1807, Mr. Lang addressed a letter officially to the Surveyors of His Majesty's Navy on this subject, and proposed, in addition to his plan of forming the keel, the propriety of continuing the fillings between the timbers higher than the floor-heads, and of securing the lower edge of one plank with bolts to be clinched on the inside, so as to allow of its being caulked. The object which Mr. Lang here had in view was, in case of her keel, her gripe, and as many of her planks as can come in contact with rocks by her grounding, being entirely torn away, still to present an effectual barrier to the water penetrating into the ship. Therefore, Mr. Lang's letters and drawings, shewing his method at this time, are more than ten years prior to that of Mr. Hewitt or Mr. Read, on the acknowledgment of the latter gentleman, who admits that his plan was forwarded to the navy office in 1818, when he was a student at the School of Naval Architecture in Portsmouth Dockyard. Mr. Lang's letter to the surveyors of the navy, was answered by them with a recommendation to propose his plan to the Navy Board, *which answer, with copies of the drawings, and other documents relating to them, are now in Mr. Lang's possession.*

In 1817, when Mr. Lang was assistant surveyor of the Navy, he submitted his designs, (as they had remained unnoticed,) to the comptroller of the Navy. The drawings* described the keel, the gripe, the fore and after dead wood, the stern-post and planking of the bottom for a line-of-battle ship, similar to the engraving at

* These were sent there on the 11th December, 1817, and still remain on record.

the commencement of our present number; and he proposed, at the same time, to fit the Polar ships, which were then ordered to be prepared for the Arctic expedition, on the same principle. These vessels were the *Isabella*, the *Dorothea*, the *Alexander*, and the *Trent*, and he succeeded, as far as circumstances would allow, in fitting them according to his proposed plan. We observed, in a former number, that one of these vessels got aground on her way to the northward, and that, had she not been thus prepared against accident, she could not have proceeded. We will now explain the various parts of the drawings:—

References.

- A Floor.
- B Chock.
- C Internal Keel, as a substitute for the deadwood, the lower part of which is to be fair with the outer part of the plank of the bottom, the upper side to be coaked to the floors, and the said keel to be well secured with bolts through the floors and keelson.
- D External Keel, which may be removed by the ship striking the ground with violence without endangering her safety.
- E False Keel, which may be removed more easily.
- F Thick strakes of Elm, fitted to the sides of the internal keel, all fore and aft, and bolted through and clenched on each side, as well as in an up and down direction through the cross pieces and half floors.
- G The same in principle, terminating with the square body, coaked to the half floors and cross-pieces, and bolted through the thick limber strakes.
- H Plank of Bottom.
- I Thick Limber Strakes, coaked to the half floors and cross pieces.
- K Keelson.
- L Limber Boards.
- M One strake of the bottom, chinned at the inner part to prevent the water from getting into the ship, in the event of the plank being rubbed off the bilge.
- N Plank rubbed off the bottom.

In the month of March, 1818, Mr. Hewitt, a shipwright, employed as a draftsman in Deptford dock-yard, proposed a plan something similar to that of Mr. Lang. But it so happened that this was not done till the *Alexander*, one of the Polar ships, had been fitted on Mr. Lang's principle, before his office window.

We shall merely observe here, that Mr. Hewitt's plan, on account of its *deficiency*, was useless, and that Mr. Read has gained nothing to his cause in advancing this transaction. We might add more, but we will now advert more directly to the claims of Mr. Read, in having invented even that "small portion of the mid-ship part of the floor of a ship," a plan of which he acknowledges to have sent to the Admiralty Board, through the medium of the Lieutenant Governor of the college, with his "fore and after deadwoods."

Was Mr. Read ever in Woolwich dock-yard? If so, did he ever visit the mould-loft there, in company with any one else, in the month of January, 1818? Was Mr. Read in Deptford dock-yard in the same month of the same year when the *Alexander* was

fitting there? Was it Mr. Read who was making so many particular inquiries on this subject? Probably he was not aware that a model of this midship part was then making, from a drawing by Mr. Lang; but it is rather remarkable that, immediately on his return to the academy at Portsmouth, he should have produced his theory, "memoir, drawings, and model," and despatched them forthwith, through the Lieutenant Governor of the college, to the Admiralty Board. Such coincidences, as he observes, do frequently take place, and men of genius do often hit upon the same invention simultaneously; but, if we mistake not, we have no instance of it here. Mr. Read's plan was not "extremely similar to Mr. Lang's," (we have no hesitation in saying this to an anonymous writer.) It possessed greater affinity to those of Mr. Gillet and Mr. Hewitt, but it differed from that of Mr. Lang in more than one particular, which we will name, as it is an essential one. This was, that the inner keel, or lower part of the bottom, being formed of two pieces placed together lengthwise, left a seam which required caulking in the middle; and this was covered by the outer keel at the bottom of the ship!! Does Mr. Read really, after such a lapse of time, still consider this a claim either to superiority or simplicity in his method, when he says, "but neither of these three methods was at all like mine, which, I flatter myself, possesses the advantage over them in simplicity?" If so, we would let him enjoy it; but at the same time we would ask him, why did not those see it who had the power to adopt it? and why has Mr. Lang's perfect keel been adopted in preference? But, unfortunately, Mr. Read's system is far from that of rendering the keel "independent" of the rest of the fabric, he takes good care to secure it firmly to the ship, in a manner so that it cannot be torn away by rocks without risking her safety. Mr. Read acknowledges that he was shown the drawings of Mr. Lang's method at the Navy Office, but he says nothing of his being made acquainted with the fate of Mr. Hewitt's. Probably he may have learned the fate of his own by this time, which, although recommended strongly for its simplicity, required something more substantial, in the shape of utility, to secure its adoption, notwithstanding all the encouragement he received from his superiors.

On a retrospect of the foregoing, and considering the excitement occasioned by the fitting of the Polar ships on Mr. Lang's method, previous to the appearance of those, either of Mr. Hewitt or Mr. Read, we consider Mr. Lang's "*originality of idea*" to be fully and fairly established. We are well satisfied that Mr. Hewitt failed in depriving Mr. Lang of any credit due to him for the invention, and as we have seen that Mr. Read's 'extremely similar' plan is altogether different, we cannot concede to him that superiority which he imagines it to possess. This we withhold, on the grounds of its inefficiency, and from not seeing it adopted, although invented fifteen years ago.

Mr. Read has said something about a plan of the same kind, produced by Mr. Gillet, which he considers as the oldest of the four in question. Surely, Mr. Read cannot be ignorant of a paragraph that appeared in the Hampshire Telegraph, a few years ago, to the effect that this gentleman *had given up his claim to the plan in question*. Where was the necessity of adducing claims which had been long ago relinquished by the parties themselves? or, does he imagine, that by so doing, he will better secure his own, by involving them in greater ambiguity? Nor could he have been ignorant of the circumstances attending Mr. Hewitt's claim, which he has so unnecessarily advanced, although it might suit his purpose to forget that, while he was employed at the Navy Office as a draftsman, in 1822, Mr. Lang informed him of it personally.

These are the facts we were anxious to add to those of Mr. Read; and we are not surprised at the failure which he tells us was the result of endeavouring to amalgamate these four methods, as he would have us believe. No doubt, the attempt on the *Acteon*, the *Satellite*, and the *Tyne*, in 1825, turned out to be "an unhappy one;" we should have been surprised, had it not been so; and if a method had succeeded, which we much doubt was nothing more, with all its boasted "simplicity," than the misconceived notions of a genuine invention originating with Mr. Lang. But we would ask him, did Mr. Lang's plan, without that amalgamation, fail in the case of the *Polar ships*? did it fail in the various merchants' yards to which, on application, it was given by Mr. Lang? and has it failed since in the ships of his Majesty's Navy, including steam-vessels, in which it has been adopted by Mr. Lang? We see no simultaneous invention here, but we do see an ungracious attempt to snatch the palm of merit from its rightful owner; and we could have wished that Mr. Read, when he considered it necessary to explain how far he was concerned in maintaining his right to this method, had kept before him the motto of our immortal Nelson,

"*Palmam qui meruit ferat.*"

Let us now revert to the anonymous writer in the *Herald*, who, in a single paragraph, would invidiously deprive Mr. Lang of any credit due to him for his inventions; for such is the tenor of his illiberal production. Here we have ambiguity in abundance. Had he been more definitive in his dates, we should have been better satisfied; but probably such a course did not suit his purpose. "Very many years ago," is doubtless a convenient term; for our own part, we are at loss to assign its limits. But we will meet him on his own terms, such as they are, and wish that we could say as much of his "good-nature" as he has been pleased to say of ours. He may be assured that we will do all in our power to preserve his good opinion, but we must inform him, on the subject of midship magazines, that we are not "mistaken" in asserting, that "very many years ago"

the French had no sixty-gun frigates, and that, before they had them, a Frenchman, celebrated for his scientific attainments, came to this country, and obtained permission to visit the several dock-yards. Now, we have it on sufficient authority, that this gentleman obtained from Mr. Lang his ideas, that the proper place for the magazine of a man-of-war is in midships; previous to which, Mr. Lang had designed midship magazines, and had made drawings of them, including their internal arrangements, as well as of those both afore and abaft, for every class of ship in his Majesty's navy. Neither can we be "mistaken," when we assert, that not only all midship magazines, but every other, have been fitted on Mr. Lang's plan. The French gentleman, above alluded to, after having very properly obtained as much information as he wanted, returned home *before the ship, which Admiral Willaumez commanded, had been fitted out!*

Doubtless "it is a well-known fact, that Admiral Willaumez fitted one on board a French sixty-gun frigate," (query 'very many years ago?') but the foregoing transaction does not go far to support this anonymous writer, when he affirms that the original principle "unquestionably does not belong to Mr. Lang." We have here advanced sufficient to establish the contrary, and that, instead of the idea being borrowed from the French, who adopted it very many years ago, that it was carried over to them, and that the originality of the invention does 'unquestionably' belong to Mr. Lang.

In the same self-sufficient manner, the writer exultingly asks, 'Who will father the *practical* arrangements of the Vernon's magazine?' He may rest assured that Mr. Lang will do so, besides those of the Thunderer, and the Barham likewise, and we are probably not 'mistaken' when we observe, that his information must surely have been derived from some impure source, when he deliberately insinuates that an alteration in it is necessary. The Vernon's magazine requires no alteration. It is an exact copy of the Barham's, fitted by Mr. Lang about two years ago, and approved of by those who know what a magazine should be. It is less complicated in its arrangements than those formerly used, and affords more facility in supplying the guns in time of action, and greater security from fire, than has ever yet been found in any ship of war. But we are not considering its superior qualities. Our present purpose is to establish Mr. Lang's claims to the original invention of it; which we have already done.

One more word with our anonymous friend, and our 'good-nature' will be satisfied. In his spleen, he would not be contented in endeavouring to deprive Mr. Lang of his claims to these inventions, but he must indulge himself in still further sullyng his good name, by his observations on the circumstances which attended the docking of the Vernon at Sheerness. Now, really, in doing

this, he has given us no very bright sample of his ingenuity in naval architecture, or of his knowledge of the qualities of a ship. He does not seem to like the idea of the Vernon being the only ship in His Majesty's navy, that would submit to be docked, with all her masts, rigging, sails, and stores on board, without being shored, as other good ships are; and, by way of depreciating this important fact, coolly asks, whether "any other good-conditioned BOAT, vessel, or ship, in His Majesty's navy," would not do the same. As he could scarcely have been in his senses, when he compared a boat standing on her keel, to a frigate with all her stores on board, we will let him enjoy his opinion respecting her; but, if he will try 'any good-conditioned ship of His Majesty's navy,' we suspect he will repent the experiment. The fact is, that not only was the Vernon so firmly built, and her timbers so well secured by diagonal iron braces, but the very form of her bottom was favourable toward maintaining that form in such a situation. Had he seen the many 'good-conditioned' ships of the same size as the Vernon, that have been docked with *nothing* in them, he would have observed the alteration which is produced in the form of their bottoms, from the pressure of the shores alone, besides that which takes place when they are unsupported by the water; nothing of which was observed in the Vernon, notwithstanding she had her masts, all her water, provisions, crew, and even four of her guns, on board at the time.

But Mr. Lang had built her; he took care to introduce his own improvements in her construction, and so satisfied was he of the strength which these, as well as the peculiar form of her bottom, gave to her whole frame, that he hesitated not to put it to the severest trial to which a ship can properly be exposed—a trial which had never before been made, and which so far surprised those whose experience in such matters enabled them to form any opinion of the consequences, that with one accord they endeavoured to dissuade him from it. The manner in which she behaved justified the fullest expectations of Mr. Lang, and called forth the admiration of those who witnessed it. Now, this may be "*all very fine*," as the anonymous writer observes, but it is nevertheless, *all very true*, and his remarks on it betray either his ignorance of these matters, or an invidious feeling which does not belong to a generous mind.

We have now fulfilled our promise—we trust, in that perfect 'good nature' which our anonymous friend allows that we possess. And he would do well to recollect, when next he assails the justice of another's claim, that such feeling is the only real foundation of fair discussion by which the truth is to be attained; that, frequently, where it is not found, both a want of liberality, and a deficiency of argument, is substituted for it; and that it is one thing to make assertions, and another to support them.

V. ON THE COMMERCE OF RUSSIA.

(Continued from page 459.)

WE have already stated, that more than two-thirds of the commerce of the whole Russian empire is carried on through Petersburg and Kronstadt. In order to form a correct idea of the commercial resources of these two ports, we shall add here to what we have already advanced on the subject of the exports and imports of late years—that in 1749 the former amounted to only 3,184,322, and the latter to 2,942,242 silver roubles, and that consequently they have since increased in a ten-fold ratio. The custom-house duties which, in 1786, were only 3,278,050 silver roubles, amounted in 1823 to more than 22 millions of roubles. In fact, the commerce of the whole empire has increased in the same proportion.

Before we specify the value of the imports and exports of late years, we shall shew what they were from 1780 to 1789.

Value of Imports and Exports during nine years in Silver Roubles..

	Exports.	Imports.
1780	10,981,138	8,656,379
1781	12,206,484	9,582,352
1782	11,467,347	
1783	10,098,791	11,484,956
1784	12,941,573	12,172,345
1785	13,497,645	10,063,211
1786	13,360,011	11,775,577
1787	16,086,799	15,979,295
1788		15,824,948
1789	18,719,694	15,617,002
Total for nine years ..	119,357,482	111,156,065

In 1825, Russia exported merchandise and ingots to the value of 236,351,242 paper roubles, while the imports of the same year amounted to 195,095,250 roubles, which left a balance in favour of Russia of more than 41,255,992 roubles. In 1826, the first year after the introduction of the prohibitory system, the exportations amounted to 181,782,254, and the imports to 186,807,182 roubles; the balance was consequently against Russia: the exportation of tallow and linen suffered a considerable reduction. In 1827, the exports were 234,770,423, and the imports 172,303,676 roubles. Here there was a difference in favour of Russia of 62,466,747 roubles. The excess in favour of the country for these three years amounted therefore to 98,697,841 roubles.

* Four paper roubles are equal to one silver rouble; but their value differs in different parts of the empire. One paper rouble has again 100 copecks in copper. All government payments are made in paper money.

The following table will shew upon what points these imports and exports are effected, and the relative importance of each branch of the Russian commerce :

Places of Import, or Export.	No. of Vessels cleared inwards and outwards.	Value of Exports in Roubles	Value of Imports in Roubles.
<i>1. Commerce of Europe.</i>			
White Sea	468	7,810,925	834,024
Baltic Sea	5,552	169,702,349	146,974,722
Western European Frontier, (by land,)	—	18,139,857	7,065,726
Black Sea, and the Sea of Azof	1,497	25,885,171	8,448,025
Total,.....	7,517	221,538,302	163,322,497
<i>2. Commerce of Asia.</i>			
Caspian Sea.....	432	2,582,487	3,804,556
Frontier, from the Caspian to Semi- palatinsk	—	4,216,817	6,267,298
Kiakhta	—	5,503,344	5,503,344
Georgia	—	890,498	3,809,158
	432	13,193,146	19,384,356
Add as above	7,517	221,538,302	163,322,497
Total.....	7,949	234,731,448	182,706,853
<i>Commerce of Countries annexed to Russia.</i>			
Poland.....	—	4,143,759	6,021,246
Finland	—	2,262,824	553,672
Bessarabia	—	4,640,009	2,362,950
	—	11,046,592	8,937,868

The revenues of the different custom-houses were

In 1822	39,946,752
—23	40,586,743
—24	49,693,084
—25	54,092,830
—26	55,667,322

Total, 239,986,731 roubles.

For the same period the revenues of the custom-houses at St. Petersburg and Kronstadt amounted to 134,052,199 roubles.

Articles of exportation during the years 1825, 1826, and 1827, with their values in paper roubles annexed.

Articles of Export.	1825.	1826.	1827.
Corn and Flour	16,454,821	16,766,833	37,462,878
Flax	36,317,321	25,494,669	25,722,842
Hemp	26,379,426	24,966,390	26,270,322
Iron and Copper	15,000,000	14,500,000	7,869,084
Wool	5,206,544	1,545,604	—

Articles of Export.	1825.	1826.	1827.
Timber	11,882,348	7,919,156	8,654,537
Potash	3,568,404	2,666,303	—————
Tallow	37,056,610	38,053,678	38,808,559
Linseed	8,500,000	7,577,563	—————
Hogs' Bristles.....	12,000,000	3,847,600	—————
Wax	4,858,252	3,819,634	—————
Cordage.....	—————	—————	11,838,427
Sail Cloth, &c.	—————	—————	11,721,139
Hides, Raw	—————	—————	3,011,151
Do. Dressed	—————	—————	5,667,907

Table of the principal articles of Importation during the years 1825, 1826, and 1827, with their value in paper roubles.

Articles of Import.	1825.	1826.	1827.
Champagne Wine	2,943,175	1,552,817	2,412,522
Other Foreign Wines.....	8,073,132	7,522,634	10,865,676
Coffee	6,769,147	4,640,670	6,342,449
Tea	4,807,049	5,675,992	6,719,166
Fruit	4,570,201	4,401,374	—————
Salt	5,326,153	4,520,166	—————
Cotton Goods.....	11,174,775	12,627,631	15,126,902
Silk Do.	—————	—————	8,428,633
Woollen Do.	—————	—————	9,783,083
Printed Cloths	—————	—————	16,006,284

Such is the actual state of the commerce of the Russian empire. When we reflect on her admirable geographical position, the singular aptitude of her people for commercial pursuits, the principles of improvement and increase in her provinces, and which have a wider field for their development than any other country, excepting, perhaps, the United States of America; when we consider her magnificent inland navigation, connected by an admirable system of canals in every part, and her various inland seas, which, presenting every variety of coast and depth of water, afford such fine nurseries for seamen; we may safely conclude that Russia is destined to occupy, at some no very distant period, the first place among the maritime and commercial powers on the globe.

Only so far back as 1788, Russia imported all her cloths from England. Cotton-spinning was not commenced in Russia till 1814, and she still continues to import the article. But, in order to embrace at a glance the entire development of Russian industry of late years, we shall add, that the value of articles manufactured in Russia amounted in 1824 to 117,625,734, and the total of those imported only 26,481,779 roubles, the half only of their amount in the year 1820.

Industry in Russia is perfectly free and untrammelled; there are no other monopolies than that of salt, brandy, and playing-cards. The national industry is more than ever encouraged under the present government, which, by a severe prohibitory system, protects

it from that which, in its infant state, might be fatal to it. The Tariff, promulgated and confirmed by an imperial ukase of 30th December, 1823, is maintained with the strictest severity.

In 1802, there were already 2270 manufactures of different kinds in Russia. The manufactory of arms at Tourla employs 6001 workmen, furnishes the state annually with 17,000 muskets, 6500 pairs of pistols, and 16,000 "armes blanches." Twenty-three cloth manufactures furnish cloth to the crown annually to the value of 700,000 roubles.

VI. THE LOG-BOARD.

"Two boards shutting together like a book, and divided into several columns, containing the hours of the day and night, the directions of the wind, the ship's course, and all the material occurrences that happen during the twenty-four hours." Such is the definition given us by John-Hamilton Moore, of this most primitive contrivance, one of those clumsy relics of antiquity handed down to us by our ancestors, and which should long since have been replaced by some other, more in unison with the improvements by which it is surrounded.

The present method of registering the proceedings of a ship is one among the various arrangements of her internal organization that is susceptible of much improvement. To keep a faithful account of the transactions on board, and the observations of various kinds that present themselves, would require more space than the log-board affords. And even were it of larger dimensions, we much doubt whether it would be a fit receptacle for any important record. It not unfrequently happens, that much of what has been written at night by a dripping wet hand is effaced either by rain or salt-water before it can be entered in the log-book the next day. And "Fresh breezes, and cloudy," in sprawling characters, occupy, with a provoking distinctness, an immensity of space, to the exclusion of some more important remark. This department, therefore, in order to keep pace with the improvements that have been made in the various parts of a ship's equipments, requires something more in unison with them than the scarcely legible characters of chalk that are now in use. Much more, however, we believe, is recorded in the log-book than ever appeared on the log-board, and, were it required, we could have no better proof than this of its inefficiency.

The foregoing observations presented themselves, on the consideration of a method for expressing any particulars of the wind and weather, by means of numbers and letters. This method, which originated with Captain Beaufort, the present Hydrographer to the Admiralty, is the result of long experience, and affords a

FIGURES to denote the Force of the Wind.

- 0 CALM.
 - 1 LIGHT AIR, . . . Or just sufficient to give steerage way.
 - 2 LIGHT BREEZE, . . . Or that in which a well-conditioned man-of-war, with all sail set, and clean full, would go in smooth water, from { 1 to 2 knots.
 - 3 GENTLE BREEZE, { 3 to 4 knots.
 - 4 MODERATE BREEZE, { 5 to 6 knots.
 - 5 FRESH BREEZE, { Royals, &c. Single-reefed topsails and top-gallant sails.
 - 6 STRONG BREEZE, { Or that to which she could just carry in chance, full and by
 - 7 MODERATE GALE, { Double-reefed topsails, jib, &c.
 - 8 FRESH GALE, { Triple-reefed topsails, &c.
 - 9 STRONG GALE, { Close-reefed topsails and courses.
 - 10 WHOLE GALE, Or that with which she could scarcely bear close-reefed maintopsail & reefed foresail.
 - 11 STORM, Or that which would reduce her to storm stay-sails.
 - 12 HURRICANE, Or that which no canvas could withstand.
- If the above mode were adopted, the state of the wind might be regularly marked, in a narrow column, on the log-board every hour.

LETTERS to denote the State of the Weather.

- b BLUE SKY; whether clear or hazy atmosphere.
 - c CLOUDS; detached passing clouds.
 - d DRIZZLING RAIN.
 - f FOGGY—f Thick fog.
 - g GLOOMY dark weather.
 - h HAIL.
 - l LIGHTNING.
 - m MISTY hazy atmosphere.
 - o OVERCAST; or the whole sky covered with thick clouds.
 - p PASSING temporary SHOWERS.
 - q SQUALLY.
 - r RAIN; continued rain.
 - s SNOW.
 - t THUNDER.
 - u UGLY threatening appearances.
 - v VISIBLE clear atmosphere.
 - w WEST DEV.
 - . Under any letter, indicates an extraordinary degree.
- By the combination of these letters, all the ordinary phenomena of the weather may be expressed with facility and brevity. *Examples* :—*Bcm*, Blue sky, with passing clouds, and a hazy atmosphere. *Gv*, Gloomy dark weather, but distant objects remarkably visible. *Qpdl*, Very hard squalls, with passing showers of drizzle, and accompanied by lightning, with very heavy thunder.

We had intended inserting a complete leaf of the log-book of a ship at sea; but the abbreviations we have adopted are sufficient to shew their application, without the detail of her proceedings.

H	R	F	Courses.	Winds.	Strength	Sig.	Remarks, &c.
1	3	4	North	E. N.E.	4		Am. Cdm.
2	3	..	N. b. E.	Variable	5		R.
3	3	6	N. b. W.		5		Cdm.
4	3	..	..		5		Bpv.
5	2	6	N. N.W.	N.E.	4		Bep.
6	3	4	N.W. b. N.		4		Bcd.
7	4	6	N.W.		4		Bvc.
8	5	..	..		2		Be.
9	3	..	..		3		Bcm.
	Ho	ve	to				
10	2	4	N. N.E.	East	2		Bm.
11	1	..	North		0		Bm.
12	..	..		Calm	0		M.

Course.	Distance.	Latitude DR.	Lat. Ob.	Long. DR.	Long. Chron.	Bearings and Distance at Noon.
N. 10 W.	44'	39° 10' N.	39° 9' N.			

1	..	..	N. N.E.	Calm	2		Bm.
2	2	4	N. N.E.	N.W.	4		Bev.
3	3	..	..		4		Ogu.
4	5	..	North	W. N.W.	5		O r g.
5	4	4	..		5		Ogrit.
6	4	4	N. N.W.	W. N.W.	5		O q r lit.
7	4	..	..		6		O r .
8	5	..	N. b. W.		8		Odm.
9	4	..	North		7		Ogm.
10	4	..	..		5		M b.
11	4	..	N. b. W.		5		M b.
12	5	..	N.W.	S.W.	5		M o d.

In the foregoing, the force of the wind, and the state of the weather, is expressed every hour, which is not done according to the ordinary method; and there is ample space left for other observations connected with the appearances of weed, obtaining soundings, communication with vessels, and the particulars of making and shortening sail, besides a variety of other remarks which repeatedly occur. Our limited space prevents us from enlarging on this subject; but we shall conclude it with observing, that it is now adopted by several ships at present employed, and we hope to see it become generally used in his Majesty's Navy.

VII. THE TRAVELS AND RESEARCHES OF ALEXANDER VON HUMBOLDT: *being a condensed Narrative of his Journeys in the Equinoctial Regions of America, and in Asiatic Russia; together with Analyses of his more important Investigations.* By W. MACGILLIVRAY, A.M. Edinburgh. Oliver and Boyd. 1832.

A WORK, describing the travels of the celebrated Humboldt, must be an acquisition in almost any shape. It would not be easy to find among those of its class, a narrative more interesting or instructive than this, which contains so much valuable information on central America, conveyed in the pleasing style of this eminent philosopher. A period of about thirty years has elapsed since these travels were performed, and about half that time since they appeared in English. Little, comparatively speaking, has been added since to our knowledge of a country which presents one of the richest fields on the face of the globe, for the researches of the traveller. M. Bonpland, the companion of Humboldt, we believe, is now on the point of returning from that country; and we hear of a commercial expedition from our own capital, to penetrate up the Amazons by steam, which cannot fail to be attended with the most valuable acquisitions in a mercantile as well as a scientific point of view. It is now some time since Lieut. Maw advocated such an undertaking, and, we trust, that the projected expedition will not fail to derive the full benefit of the experience which he gained in his passage down this most majestic of rivers.

But our purpose is with the work before us, and we have selected the following extract relating to Cumana, as illustrative of the manner in which the subject has been treated:—

“The city of Cumana, the capital of New Andalusia, is a mile distant from the landing-place, and in proceeding towards it, our travellers crossed a large sandy plain, which separates the suburb inhabited by the Guayqueria Indians from the seashore.

“Crossing the Indian suburb, the streets of which were very neat, they were conducted by the captain of the Pizarro to the governor of the province, Don Vicente Emparan, who received them with frankness; expressed his satisfaction at the resolution which they had taken of remaining for some time in New Andalusia; shewed them cottons dyed with native plants, and furniture made of indigenous wood; and surprised them with questions indicative of scientific attainments. On disembarking their instruments, they had the pleasure of finding that none of them had been damaged. They hired a spacious house in a situation favourable for astronomical observations, in which they enjoyed an agreeable coolness when the breeze arose, the windows being without glass, or even the paper panes which are often substituted for it at Cumana.

“The soil around Cumana is composed of gypsum and calcareous breccia, and is supposed at a remote period to have been covered by the sea. The neighbourhood of the city is remarkable for the woods of cactus which are spread over the arid lands. Some of these plants were thirty or forty feet high,

covered with lichens, and divided into branches in the form of a candelabrum. When the large species grow in groups, they form a thicket which, while it is almost impenetrable, is extremely dangerous on account of the poisonous serpents that frequent it.

"The fortress of St. Antonio, which is built on a calcareous hill, commands the town, and forms a picturesque object to vessels entering the port. On the south-western slope of the same rock are the ruins of the castle of St. Mary, from the site of which there is a fine view of the Gulf, together with the island of Margareta and the small isles of Caraccas, Picuita, and Boracha, which present the most singular appearances from the effect of mirage.

"The city of Cumana, properly speaking, occupies the ground that lies between the castle of St. Antonio and the small rivers Manzanares and Santa Catalina. It has no remarkable buildings, on account of the violent earthquakes to which it is subject. The suburbs are almost as populous as the town itself, and are three in number: namely, Serritos, St. Francis, and that of the Guayquerias. The latter is inhabited by a tribe of civilized Indians, who, for upwards of a century, have adopted the Castilian language. The whole population in 1802 was about eighteen or nineteen thousand.

"The plains which surround the city have a parched and dusty aspect. The hill on which the fort of St. Antonio stands is also bare, and composed of calcareous breccia, containing marine shells. Southward, in the distance, is a vast curtain of inaccessible mountains, also of limestone. These ridges are covered by majestic forests, extending along the sloping ground at their base to an open plain in the neighbourhood of Cumana, through which the river Manzanares winds its way to the sea, fringed with mimosas, erythrinas, ceibas, and other trees of gigantic growth.

"This river, the temperature of which in the season of the floods descends as low as 71.6°, when that of the air is as high as 91°, is an inestimable benefit to the inhabitants; all of whom, even the women of the most opulent families, learn to swim. The mode of bathing is various. Our travellers frequented every evening a very respectable society in the suburb of the Guayquerias. In the beautiful moonlight, chairs were placed in the water, on which were seated the ladies and gentlemen, lightly clothed. The family and the strangers passed several hours in the river smoking cigars and chatting on the usual subjects of conversation, such as the extreme drought, the abundance of rain in the neighbouring districts, and the female luxury which prevails in Caraccas and Havannah. The company were not disturbed by the *bavas*, or small crocodiles, which are only three or four feet long, and are now extremely rare. Humboldt and his companions did not meet with any of them in the Manzanares; but they saw plenty of dolphins, which sometimes ascended the river at night, and frightened the bathers by spouting water from their nostrils.

"The port of Cumana is capable of receiving all the navies of Europe; and the whole of the Gulf of Cariaco, which is forty-two miles long and from seven to nine miles broad, affords excellent anchorage. The hurricanes of the West Indies are never experienced on these coasts, where the sea is constantly smooth, or only slightly agitated by an easterly wind. The sky is often bright along the shores, while stormy clouds are seen to gather among the mountains. Thus, as at the foot of the Andes, on the western side of the continent, the extremes of clear weather and fogs, of drought and heavy rain, of absolute nakedness and perpetual verdure, present themselves on the coasts of New Andalusia.

"The same analogy exists as to earthquakes, which are frequent and violent at Cumana. It is a generally received opinion, that the Gulf of Cariaco owed its existence to a rent of the continent, the remembrance of which was fresh in the minds of the natives at the time of Columbus' third voyage. In 1530, the

coasts of Paria and Cumana were agitated by shocks; and towards the end of the sixteenth century, earthquakes and inundations very often occurred. On the 21st October, 1766, the city of Cumana was entirely destroyed in the space of a few minutes. The earth opened in several parts of the province, and emitted sulphureous waters. During the years 1766 and 1767, the inhabitants encamped in the streets, and they did not begin to rebuild their houses until the earthquakes took place only once in four weeks. These commotions had been preceded by a drought of fifteen months, and were accompanied and followed by torrents of rain which swelled the rivers.

“ On the 14th December 1797, more than four-fifths of the city were again entirely destroyed. Previous to this, the shocks had been horizontal oscillations; but the shaking now felt was that of an elevation of the ground, and was attended by a subterranean noise, like the explosion of a mine at a great depth. The most violent concussion, however, was preceded by a slight undulating motion, so that the inhabitants had time to escape into the streets; and only a few perished, who had betaken themselves for safety to the churches. Half an hour before the catastrophe, a strong smell of sulphur was experienced near the hill of the convent of St. Francis; and on the same spot an internal noise, which seemed to pass from S.E. to N.W., was heard loudest. Flames appeared on the banks of the Manzanares and in the Gulf of Cariaco. In describing this frightful convulsion of nature, our author enters upon general views respecting earthquakes, of which a very brief account may be here given.

“ The great earthquakes which interrupt the long series of small shocks, do not appear to have any stated times at Cumana, as they have occurred at intervals of eighty, of a hundred, and sometimes even of less than thirty years; whereas, on the coasts of Peru,—at Lima, for example,—there is, without doubt, a certain degree of regularity in the periodical devastations thereby occasioned.

“ It has long been believed at Cumana, Acapulco, and Lima, that there exists a perceptible relation between earthquakes and the state of the atmosphere which precedes these phenomena. On the coasts of New Andalusia the people become uneasy when, in excessively hot weather and after long drought, the breeze suddenly ceases, and the sky, clear at the zenith, presents the appearance of a reddish vapour near the horizon. But these prognostics are very uncertain, and the dreaded evil has arrived in all kinds of weather.

“ Under the tropics, the regularity of the horary variations of the barometer is not disturbed on the days when violent shocks occur. In like manner, in the temperate zone the aurora borealis does not always modify the variations of the needle, or the intensity of the magnetic forces.

“ When the earth is opened and agitated, gaseous emanations occasionally escape in places considerably remote from unextinguished volcanoes. At Cumana, flames and sulphureous vapours spring from the arid soil, while in other parts of the same province it throws out water and petroleum. At Rio-bamba, a muddy inflammable mass called *moya* issues from crevices which close again, and forms elevated heaps. Flames and smoke were also seen to proceed from the rocks of Alvidras, near Lisbon, during the earthquake of 1755, by which that city was ravaged. But in the greater number of earthquakes it is probable that no elastic fluids escape from the ground, and when gases are evolved, they more frequently accompany or follow than precede the shocks.

“ The subterranean noise which so frequently attends earthquakes, is generally not proportionate to the strength of the shocks. At Cumana it always precedes them, while at Quito, and for some time past at Caraccas and in the West India Islands, a noise like the discharge of a battery was heard long after the agitation had ceased. The rolling of thunder in the bowels of the earth, which

continues for months, without being accompanied by the least shaking, is a very remarkable phenomenon.

“ In all countries subject to earthquake, the point at which the effects are greatest, is considered as the source or focus of the shocks. We forget that the rapidity with which the undulations are propagated to great distances, even across the basin of the ocean, proves the centre of action to be very remote from the earth's surface. Hence it is clear that the earthquakes are not restricted to certain species of rocks, as some naturalists assert, but pervade all; although sometimes, in the same rock, the upper strata seem to form an insuperable obstacle to the propagation of the motion. It is curious also, that in a district of small extent, certain formations interrupt the shocks. Thus, at Cumana, before the catastrophe of 1797, the earthquakes were felt only along the southern or calcareous coast of the Gulf of Cariaco, as far as the town of that name, while in the peninsula of Araya, and at the village of Maniquarez, the ground was not agitated. At present, however, the peninsula is as liable to earthquakes as the district around Cumana.

“ In New Andalusia, as in Chili and Peru, the shocks follow the line of the shore, and extend but little into the interior,—a circumstance which indicates an intimate connexion between the causes that produce earthquakes and volcanic eruptions. If the land along the coasts is most agitated because it is generally lowest, why should not the shocks be equally strong in the savannas, which are only a few yards above the level of the sea?

“ The earthquakes of Cumana are connected with those of the West Indies, and are even suspected to have some relation to the volcanic phenomena of the Andes. On the 4th November, 1797, the province of Quito underwent so violent a commotion, that 40,000 persons were destroyed; and at the same period shocks were experienced in the Eastern Antilles, followed by an eruption of the volcano of Guadaloupe, in the end of September, 1798. On the 14th December the great concussion took place at Cumana.

“ It has long been remarked, that earthquakes extend their effects to much greater distances than volcanoes; and it is probable, as has just been mentioned, that the causes which produce the former have an intimate connexion with the latter. When seated within the verge of a burning crater, one feels the motion of the ground several seconds before each partial eruption. The phenomena of earthquakes seem strongly to indicate the action of elastic fluids endeavouring to force their way into the atmosphere. On the shores of the South Sea the concussion is almost instantaneously communicated from Chili to the Gulf of Guayaquil, over a space of 2070 miles. The shocks also appear to be so much the stronger the more distant the country is from active volcanoes; and a province is more agitated, the smaller the number of funnels by which the subterranean cavities communicate with the open air.” p. 63—76.

Every one is acquainted with the travels of Humboldt, but those who do not possess his valuable work, will find an ample abridgment of it in the tenth number of the Edinburgh Cabinet Library. It would perhaps be the most interesting point falling within the reach of the contemplated expedition to which we have just alluded, to trace again that *lusus naturæ* on a grand scale, the natural canal connecting the waters of the Orinoco and Amazons, the existence of which was first announced by Humboldt.

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE
AND ART.

THE NEW NAUTICAL ALMANAC.

IN some of the preceding numbers of this work, we have given at length, the report of the committee appointed by the Royal Astronomical Society, respecting the New Nautical Almanac, and to this we added, in our last number, a list of the articles proposed to be inserted in it. We were also careful to record the names of the persons forming the committee, that our readers might know to whom we shall be indebted for the valuable production which is contemplated. Several circumstances, in addition to the mass of new matter adopted, have tended to delay the publication of this important work, and it is only now that we have been favoured with the first sheet of it, immediately from the press. A sufficient idea will be obtained of it, from a perusal of the report alluded to, and it is unnecessary to enter here into further detail respecting the eminent advantages it possesses. We will briefly observe, that there is not an element which the navigator has to use in it which he will not find *easier of access*, in consequence of its being given for smaller intervals of time than before, and accompanied by differences for decimal parts. This is particularly observable in the moon's tables, and in the tables of lunar distances; those of the planets are introduced in common with the stars and sun, a measure which will be the means of extending the advantages of this observation.

We believe that the whole of the Almanac for 1834, will be published in the early part of the ensuing month, and we cannot close our remarks without expressing our satisfaction in seeing this important national work appear in its present useful shape, under the auspices of a new superintendent, Lieut. Stratford, of the Royal Navy. While we can fully appreciate the exertions of Lieut. Stratford, in the laborious task he has encountered, in the commencement of his avocations, we consider his fitness for such a responsible duty as reflecting credit on the profession to which he belongs, and are glad to find that the Nautical Almanac is likely to prosper so well, even in nautical hands.

NAVAL EVOLUTIONS; *a Memoir by Major-General Sir Howard Douglas, Bart., &c., refuting Mr. Clerk's Claims in relation to Lord Rodney's Engagement on the 12th April, 1782.* Boone, London.

THE Rodney controversy not settled yet? Enough has been written on this subject by the leading journals, although each has

taken a different view of the matter; and to go fully into the question would require more space than we can command. To the friends of Mr. Clerk we would observe, in the words of a French great Captain, "There is no readier way of getting beaten in war than to lay down before-hand fixed rules of attack and defence, and to arrange the whole plan of a campaign from a cabinet. The system to follow is that which is pointed out, and rendered necessary as the enemy is to be resisted or assailed." Now we think, that, in spite of books, and conversation over wine and walnuts, that this system was adopted on the 12th of April, 1782; and we see no violation of the etiquette of rank in a subordinate officer holding so responsible a situation as that of Captain of the Fleet, to offer any suggestions to his Admiral which may present themselves; on the contrary, we know it to be his duty. A host of living witnesses have attested that this was done; and those of our readers who are interested in the question will find it worth the trouble to peruse the mass of interesting evidence collected in this work.

A TREATISE ON NAVAL GUNNERY, published with Approbation and Permission of the Lords Commissioners of the Admiralty. By Major-General Sir Howard Douglas, Bart., &c. Second Edition, Murray.

WE are glad to see this valuable work in a second edition. The high character which it bears in that profession to which it is peculiarly addressed, renders it unnecessary for us to say more.

The ENTRANCES to the RIVER SCHELDE. Admiralty, 1832. Size, Half Double Elephant. (No. 205.)

From a survey of Lieut. Ryk of the Netherland Royal Navy. This chart also contains the North and South Stone Banks, the Rabs, the Soundings in the Schoonveld, Stone Deep, and all the outer soundings and banks, from a survey of Mr. G. Thomas, Master, R.N. in 1812-13. It is a gratifying proof of the general correctness of Mr. Thomas's work, with the scanty means he had at his command, in the midst of war, to find that his work in this chart coincides so well with the surveys of the Netherland officer, with his superior means, and the advantage of peace for his operations. The surveys of these officers coincide so closely together throughout the coast, as to afford the best possible proof of their correctness, and that the general limits of the banks have not undergone any material change for several years past. This is the first of the following series.

The SCHELDE from FLUSHING to ANTWERP. Admiralty, 1832. Size, Half Double Elephant. (No. 203.)

This chart is copied principally from the surveys of M. Beautemp's Beauprè. The part about Flushing is from Lieut. J. C. Ryk, and the Vondelingen Flats to the north of South Beveland are from Lieut. Keu-
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chenius, both of which officers belong to the Netherland Royal Navy. The scale adopted is rather more than three-fourths of an inch to the mile, which shews the banks sufficiently for navigation.

The EAST SCHELDE from the ROOMPOT to BERGEN-OP-ZOOM. Admiralty. *Size, Half Double Elephant.* (No. 204.)

This chart also includes the entrance to Browsershaven and the southern part of the entrance to Hellevoetsluis, and is founded on the surveys of Lieutenants Keuchenius and Ryk of the Royal Netherland Navy, in 1827, with additions from the surveys of M. Beauprè in 1817. The Hellevoetsluis channel from the outer buoy, off Goree, to the Haring Vliet, is entirely from Lieut. Ryk's surveys, and a few additions have been made in the chart from the remarks of officers in the Royal Navy.

The foregoing charts will be accompanied by sailing directions, translated from those of the Netherland officers alluded to, partly by Mr. Chas. Gambier Becher, containing the most recent information. On comparing the above charts with those of M. Beauprè, several differences will be found in the islands, which have been partly surrounded by dykes, which were not constructed when his survey was made.

The INNER ROAD of OSTENDE. Admiralty, 1832. *Size, Large Quarto.* (No. 202.)

A neat little plan reduced from a survey, by M. Beauprè, in 1816, to which is added a plan of the town and fortifications, as well as the harbour of Ostende, from a large plan, by M. De Brock, in 1831. The condition of the fortifications on the western side of the town, in compliance with a late treaty, are clearly shewn. This plan is on the scale of about three inches to the nautical mile.

IMPROVEMENT IN THE SEXTANT AND QUADRANT.

IN our last number we alluded to a valuable improvement made in the Sextant and Quadrant, by an ingenious mechanic of London; and we are anxious to correct a mis-statement that we then made in his name. Mr. David Rowland, of No. 68, Crawford-street, is the individual in question; and we believe his invention has been laid before the committee alluded to in our numbers for September and October to decide on inventions. Several experienced naval officers of rank have expressed their favourable opinion of this invention, which we have also examined, and are in hopes of seeing it speedily brought into use. Mr. Rowland informs us that he has also succeeded in the invention of an artificial horizon, to be used at sea, decidedly the first desideratum of the mariner. Our readers are, no doubt, aware of the numerous experiments that have been made to obtain this invaluable acquisition.

M. DOUVILLE.

THE Supplement, which accompanies our present number, contains the defence of M. Douville from the attack on him in the Foreign Quarterly Review. We have printed it for the reasons

there assigned. We have since seen the rejoinder of the Review, as well as a proof of the *Revue des deux Mondes*, which also makes allusion to M. Douville. We have acquitted ourselves of what we consider to be our duty, and it remains for M. Douville to do the same.

PORTABLE METALLIC THERMOMETERS.

THE construction of this machine has been renewed, after a considerable lapse of years, by Messrs. Arnold & Dent, of the Strand. It consists of two thin laminas of steel and brass firmly soldered together, and fixed in a circular form, in a case shaped like a pocket watch. The action of the laminas is communicated by a rack wheel to a hand, which indicates the temperature on the principle of the common thermometer. Various metals have been successfully applied to this purpose by Arnold, Breguet, and others, and the present application of steel and brass is found to answer perfectly well, and to mark the divisions of its scale with as much accuracy as when applied to the compensation balance of a chronometer for the division of time. The most perfect machine of this kind that we have been able to trace, is a self-registering one, made by the late Mr. Arnold, for Mr. Aubert of Islington, about fifty years ago. At his death, it was purchased by Dr. Kitchener. Those made by Arnold and Dent range from 30° below zero of Fahrenheit to 150° above it; and are made also to register themselves when required.

To the Editor of the Nautical Magazine.

“Fratton, Portsmouth, October 12, 1832.

“Sir,

IN turning over a portfolio a few weeks back, containing plans and descriptions of ideas of improvement in nautical affairs, some of which have already been before the public, I recognised a simple contrivance that occurred to me, about nine or ten years ago, by which a half or a quarter point of the compass, may be as easily steered upon as any of the cardinal points.

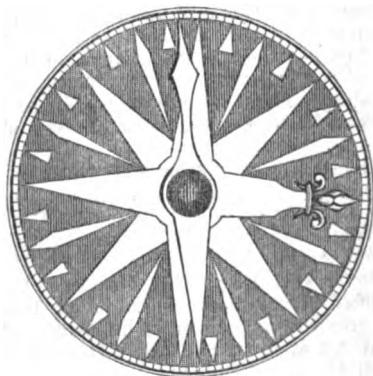
“As it sometimes happens that the most simple, yet useful contrivances, which a child might imagine, remain the longest concealed, merely because no person considers them sufficiently important to notice, I shall no longer hesitate to impart, on the score of its simplicity, what, if generally known, might prove useful, particularly to merchant-ships, by relieving the eye of the helmsman from the incessant fatigue of watching a small speck, and consequently rendering the steerage more correct; and also by enabling a sailor ignorant of the compass, to steer on any given course. I accordingly avail myself of an opportunity of forwarding these lines for insertion in your valuable Magazine, should you deem them worthy of a place.

I believe I may say, that it has often been a practice, when a long course fell upon a half or a quarter point, to take the nearest point, particularly at

night, because there was a greater certainty of that course being more correctly steered, on account of the whole points being much more conspicuous than the half or quarter points, which are mere specks. It occurred to me that, if a hand of very thin bright brass, or of some light material, as stiff pasteboard, or dry wood, painted a conspicuous colour, were laid upon the compass card, and gently compressed down to preserve it in its place, by the cap which screws on at the centre, it might be adjusted to any point required to be steered on, and when sailing by the wind, made to coincide with the North and South points; or, if preferred, taken off altogether. To preserve the just balance of the card, the hand should extend right across it, although one arm would suffice to indicate the course. Now, as it is evident that the vibrations of a long hand are more easily discerned than those of a small speck, and being assured, by the best authority on this subject, that no impediment whatever can arise from the traversing of the compass card, from the trifling addition in weight of the '*Course Indicator*,' as I call the hand, I am inclined to believe that the assistance which it will afford in steering by compass, particularly with a dim binnacle light, will be obvious to all who see these lines, and that the contrivance will be adopted, since every seaman is sufficient mechanic to fashion and apply a hand of some suitable material.

"I am, Sir,
 "Your most obedient Servant,
 "CHARLES MORTON,
 "Commander, R.N."

The hand in the diagram shews the Course Indicator; and being of any light colour, by attending to it alone, the eye is not fatigued and bewildered by watching one, among a variety of similar points.



We have heard of this somewhere before now, but are nevertheless much obliged to Captain Morton for his suggestion, the utility of which must be evident to seamen.

NAVAL SURVEYS.

WE have received the following from a correspondent, who signs himself "Scrutator," and shall merely observe, that as his remarks, although written in rather an ironic style, appear to be perfectly justifiable, we have inserted them at length, in the hope that some officious friend of the parties in question will see that his services are not likely to be very beneficial in the line which he has adopted.

"Junior United Service Club, Nov. 5th.

"Mr. Editor,

"As I am always desirous of seeing 'the most beautiful specimens of any work extant,' I determined on treating myself to a sight of Lieutenant Denham's Surveys, mentioned in the last number of the *United Service Journal*—besides, I thought I would write, and tell you all about them, for I know you to be an admirer of such things. Only imagine, Mr. Editor, the gratification I anticipated. The drawings of Cook, Vancouver, Flinders, and a host of living naval surveyors, to say nothing of those actually employed on our own coasts, all sunk into insignificance compared with what I was to see.

"Well, Mr. Editor, I likewise have been 'favoured' with an inspection of Lieutenant Denham's charts in manuscript; and only imagine my surprise and disappointment in finding them to be nothing more than mere schoolboy productions—what any youth, if he had the remotest idea of drawing, would surpass with ease. It was rather vexatious, too, for some of the drawings of Captain Hewett, Lieut. Slater, and Lieut. Frazer, happened to be lying by their side; and as to comparing them, Mr. Editor, why, you might as well compare the writing of a child with copperplate printing. So much for 'the most exact and beautiful specimens of Hydrography extant,' thinks I to myself, as well as the judgment of the Milford correspondent in the *United Service Journal* into the bargain, respecting charts. He may know all about sailings and arrivals, but, if he does not know more about specimens of hydrography, the less he says about them, the better.

"By the bye, Mr. Editor, if I am not intruding too far on your time, this same gentleman expresses a vast deal of concern lest the 'specimens of Hydrography' which he speaks of, should be mutilated in the same way, as that of his own darling harbour, Milford Haven, by the 'excision of its approaches.' I wonder whether he is a sailor or not? If he is, I should like to know what more he would have. Now, I happen to have seen this engraved chart of Milford Haven, about which he has been grumbling so much, and will just give you my opinion of the matter. Now he has got the coast to the eastward as far as St. Goven's Head, he has got a clear space of two miles outside of the Turbot bank, lying nearly three miles off the entrance of his harbour, and he has got the lights on St. Ann's Head on the west, which are sufficient to run for on a given bearing; and all this he has got on a scale of two inches and three eighths, that is, nearly two inches and a half to the mile. And what more would he wish the good people of Pembrokehire to have? Or what does he think that the merchants of Swansea have got, by the Admiralty having allowed them to engrave the 'Specimens of Hydrography on the same scale as the original.' Why, Mr. Editor, the idea is preposterous, altogether absurd; but no bad thing either for the copper and paper merchants.

"Probably, this gentleman wanted to include the islands of Shomah and Shoahm in the plan of Milford Haven; nay, his ideas of chart-making might have made him anxious to see Grassholm, or even the Smalls Rocks make their appearance on the plan of his favourite Haven, as he dwells so much on the excision of its approaches. We wish him joy with such table-cloth charts. But depend on it, Mr. Editor, he is no sailor, or he would have seen at once that such excisions belong to the next chart; for he might have supposed that these 'Specimens of Hydrography,' which combine all the wonderful fine things that he speaks of, such as 'the numerous rocks, shoals, banks, and,' even 'sands, upon the dangerous coast of South Wales, the soundings admirably portrayed, excellent tide-tables, and appearances of head-lands' would all be included in a series of charts as they became completed. But, pray tell me, Mr. Editor, are these usual in Hydrographic surveys, because, if they are, there does not appear to me to be any thing more in them than in laying down roads, rivers, villages, and towns, in a map.

"By the bye, I heard something about its being necessary to draw views of headlands about Milford Haven again, in their proper proportion, after being sent finished to the Admiralty, as they did not coincide with an infallible test, established by the hydrographer, Captain Beaufort, for I know that these things undergo a tolerably strict ordeal in his hands before they are given to the public, which may perhaps be the reason that they are so 'exact.' But what do you think Mr. Editor, talking about exactness, some one whispered to me while I was looking at the engraved plan of Milford Haven—(mind, he only whispered it as a secret, so you needn't mention it,) that the depth of water on the Chapel Rocks at the entrance, was taken from Mr. Fitzmaurice's Survey made about ten years ago. I suppose that Mr. Fitzmaurice was more exact in his tide-table than Lieut. Denham. Probably, the gentleman at Milford was not aware of this. And so, after all, Mr. Editor, I see nothing particular 'to be lamented,' except the loss of my time, and the disappointment I experienced in running after Lieutenant Denham's 'Specimens of Hydrography.'

"I see something more about Lundy Island, and a parcel of harbours in the Bristol Channel, which I don't exactly comprehend. Perhaps, you will have the kindness to explain it to me. So, without intruding further on your time,

"I am, your, ———

"I had just finished my epistle; and nothing, my dear Mr. Editor, could have induced me to intrude further on your valuable time, but to give you a piece of news, at which I am sure you will be quite delighted. Only imagine a *voyage of discovery to LUNDY ISLAND*. And when do you suppose it took place? In the time of the ancient Britons, when they braved old ocean's dangers in their crazy barks of hide? or, in the time of the Romans, with their many-oared galleys? or, would you more rationally suppose that some daring Phenician had made a trading excursion from the Mediterranean, to see what was to be got in Great Britain? for you know these fellows were always mighty mysterious in their Atlantic voyages. Come, I'll not tantalize you any longer, so don't puzzle your brain. It was made in the year we live in, *dictu mirabile monstrum*, yes, the veritable year, 1832, famed for the Reform Bill, the Dutch War, and the Cholera, and, *ante omnes*, the discovery of a "TERRA INCOGNITA" in Lundy Island. So says the Devonport Telegraph, just put into my hands, and who is to doubt it, when the leading daily journals of all England, announce the fact. Yes, indeed, Mr. Editor, we are gravely told that it seems strange, that after the numerous voyages round the world, to the North Pole and the South Pole, to the

East and to the West, it should have been left for these gentlemen to make a *voyage of discovery to an island*, no further from our own shores than the entrance of the British (? Bristol) *channel* ! Really, this is a feat which the most desperately enterprising cockney, in a voyage from the London Docks to Margate, could scarcely excel. Now, it does most unfortunately happen that at the very time the Polar voyages were going forward, a survey was also going forward of Lundy Island, by Mr. Fitzmaurice, and the grand anchorage there has been as long known to the Bristol men, as Canvey Island, at the mouth of the Thames, to the river traders.

“ Well, I will give you all the information I can get about this ‘*terra incognita*’ to nineteen-twentieths of the people of England ;’ a tolerably close calculation that, Mr. Editor ; but I doubt if even a twentieth part of our countrymen know any thing about it. ‘ It is situated in the channel, about midway between Devonshire and Pembrokeshire ; and although only five miles in length and two in breadth, we believe its only inhabitants are the inmates of a solitary farm-house, and the keepers of light-houses. It is encompassed by inaccessible rocks, having but one entrance, where scarcely two persons can pass abreast.’ Pray, Mr. Editor, didn’t the Ordnance people survey this island some years ago. Really, if they did, it was very remiss in them to keep such secrets to themselves, to the risk of the numerous vessels passing up and down the channel ; but perhaps, as there were no doubt some geologists among them, they had a suspicion about the valuable silver and copper mine just found there, and wanted it for themselves.

“ At any rate, you will agree with me, that those west-country folks must be sad goths to let an island surrounded by rocks remain a ‘*terra incognita*’ under their very noses, to the year 1832, and not to have taken a trip there on pleasure before these enterprising officers made their voyage of discovery. I hope, now it is found, that some of our philanthropic gentlemen, who locate the poor on an acre or two of land in different parts of our country, will take it into their heads to send some there on the same principle. It will hold a good many, Mr. Editor—five miles long, and how many broad ? eh ?

“ But I have already intruded more than I had at first intended, on your valuable time, Mr. Editor ; and, requesting that you will not forget to make this discovery known to the chart-makers, in case they should not have heard of the *voyage*, as, of course, they can know nothing of the island. I remain, until my next,

“ SCRUTATOR.”

GALLOWAY'S PADDLES FOR STEAM VESSELS.

EXPERIMENTS have been made with Galloway's improved paddles fitted to H.M.S.V. Carron. On the 16th of November, the Carron proceeded round the Nore Light-vessel from Sheerness. Her speed was found to be fully equal to that obtained on the old plan of fitting the paddles, besides which, all concussion was removed, and the motion of the vessel was such, that a person on board would not have known that he was in a steamer. No lateral waves or undulation was occasioned, which was proved by a boat manned, being towed close alongside the paddle-wheel. We look on this improvement as most important, and one of the gradual steps to the perfection of steam-vessels. In a seaway, the advantage of the floats of the paddles entering and leaving the water feathered, will be still more evident.

NAUTICAL MISCELLANY.

NOTES OF THE EDITOR.

Political affairs do not belong to our cruising ground; but we give the following extracts which have led to our fleets being so actively employed by them at present:—

“That no ships or vessels belonging to any of His Majesty’s subjects be permitted to enter, and clear out, for any of the ports within the dominion of the King of the Netherlands, until further orders.

“That a general embargo be made of all ships and vessels whatsoever, belonging to the subjects of the King of the Netherlands, now within, or which shall hereafter come into any of the ports, or harbours, or roads, within His Majesty’s dominions: and that the Commanders of His Majesty’s ships of war do detain, and bring into port, all merchant ships and vessels bearing the flag of the Netherlands.”

By a Decree of the King of the Netherlands, dated the 16th instant, English and French vessels were to quit the ports of Holland in three days; and such vessels arriving on the coast, would be warned not to enter for the present.

The following ships form the combined squadrons now blockading the ports of Holland. The French ships are written in italics:—

Ariane, 32, Capt. M. Le Roy.

Bayonnaise.

Calypso, 56, Capt. M. Lalande.

Castor, 36, Capt. Right Hon. Lord J.

Hay.

Childers, 18, Com. R. Deans.

Conway, 28, Capt. H. Eden.

Creole, 24, Capt. Dubreuil.

Dec, St. Ves. Com. R. Oliver.

Donegal, 74, Capt. J. Dick. Flag of

Vice-Adm. Sir P. Malcolm, K.C.B.

Larne, 18, Com. W. S. Smith.

Malabar, 74, Capt. Hon. J. Percy.

Medee, 44, Capt. Troude.

Melpomene, 60, Capt. Rabandy.

Resolue, 44, Capt. Le Maitre.

Revenge, 78, Capt. D. H. Mackay.

Rhadamanthus, St. Ves. Com. G. Evans.

Rover, 18, Com. Sir G. Young, Bt.

Satellite, 10, Com. R. Smart.

Scout, 18, Com. W. Hargood.

Snake, 16, Com. R. Robertson.

Southampton, 52, Capt. J. M. Laws.

Spartiate, 74, Capt. R. Tait.

Stag, 46, Capt. N. Lockyer.

Suffrein, 90, Capt. Keudrain. Flag of
R.-Adm. Villeneuve.

Syrene.

Talavera, 74, Capt. T. Brown.

Vernon, 50, Capt. Sir F. Collier, Kt.

Volage, 28, Capt. Right Hon. Lord
Colchester.

With the view of assisting all in our power towards promoting the subscription now going forward, for the relations of the unfortunate sufferers at the Shetland Islands, we insert the following, wherein our readers will find ample claims on their benevolence in plain, unvarnished fact:—

The Shetland Islands have been visited with an awful dispensation of Providence. The fishermen, while engaged in their usual occupation, a great distance from land, were suddenly overtaken by a hurricane of unprecedented violence, even in that tempestuous region. Some were fortunate enough to gain the shore; others were picked up at sea by passing vessels; many were doomed to a watery grave. Seventeen boats sunk under the fury of the elements; and of 108 men who composed the crews, and who had left their homes full of hope and joy, not one returned to tell the tale of their disaster. To describe the distress occasioned by this frightful loss of life, would be a needless task. When the simple fact is stated, that these ill-fated mariners have left nearly eighty widows and several hundred children exposed to all the evils of extreme poverty, aggravated by the rigours of a northern winter, the details of the picture of wretchedness will readily present themselves to the most unreflecting mind. To afford anything like adequate assistance to so many sufferers, is far beyond the very limited means of the community to which they belong. An appeal is therefore made in their behalf to the gene-

city of their fellow-subjects whose lot is cast under a milder sky, and whom a bountiful Providence has blest with the comforts of life, in the hope that out of their abundance they will spare a mite towards the relief of those desolate families, who have now no support but that which they may derive from the charity of the benevolent. Subscriptions will be received at the banking-houses of Sir Claude Scott and Co. 1, Cavendish-square; Messrs. Drummonds, 48, Charing-cross; and Messrs. Ladbroke and Co., Bank-buildings, Cornhill; also by the Committee for furthering the subscription, viz.: James Copland, M. D., Bulstrode-street, Cavendish-square; Arthur Anderson, Esq. 46, Lime-street, city; Francis Yates, Esq., 21, Mincin-lane; Rev. Dr. Barclay, Grove-hall, Bow; John Robertson, Esq., Lime-house; Capt. Wm. Barclay, Stepney; Capt. James Barclay, Jamaica Coffeehouse; Theodore Gordon, M.D., Duchess-street, Portland-place; John Ross, Esq., Popham-terrace, Islington; Robert Linklater, Esq., High-street, Wapping; and John Henderson, Esq.,

seven knots, had time to put her helm down, and thus struck the frigate with diminished force. The bowsprit of the former was badly sprung, and her cut-water carried away by the concussion. The frigate's damages were of a far more serious nature, having been struck a midships on the larboard side, by which every thing standing was carried away, even to the water's edge. Her beams and timbers were started, and she was in so bad a condition, that had there been any sea on at the time, she would have inevitably sunk. About 50 of her men jumped on board of the Talavera, expecting the frigate to go down every instant. The two ships immediately proceeded to Sheerness to repair.

DUTCH VESSELS DETAINED.

VESSELS NAMES.	CAPTORS' NAMES.	WHEN.	WHERE SENT.
Zeelust	St. Cl. Gd. at		
Catharina	Dung-nos	12 Nov.	Dover.
Henrietta	Sylvia R.C.	12 Nov.	Weym.
George	Local	11 Nov.	Plymth.
Drie Vrienden	Local	12 Nov.	Hull.
Goede Verwagting			
De Liefde	Vernon	15 Nov.	Margate
Herstelling	Satellite	15 Nov.	Deal.
Diana	Roebuck	14 Nov.	Portsm.
Gesina	Dove R.C.	13 Nov.	Falmth.
Palembang	Ditto		Penzan.
Redentore	Ditto		Ditto.
Gesina	Ditto		Ditto.
Auna Maria	Southamp.	14 Nov.	Yarmth
Vrouw Jantua	Royal Char.		
	lotte R.C.	14 Nov.	
Kron Princess	Castor	14 Nov.	Down.
Maria	Local	14 Nov.	Liverp.
Egellina			
Goede Verwagting	Squadron	18 Nov.	Medway
Ystrom			
Johanna	Snake	17 Nov.	Ramsgr.
Goede Hope	Melpomene	19 Nov.	
Maria	Conway	18 Nov.	Portsm.
Henrietta			
Clasima			
Harmonie	Stag		
Haitzema			
Victor	Dove R.C.	17 Nov.	Penzan.
Catherina	Ditto		Ditto.
Reijerslaad	Conway	21 Nov.	Portsm.
Il Redenatore	Dove		

We regret to say, that our table of wrecks is even greater in our present than in our last number. They amount to 62 vessels!

The Corporation of the Ballast Office, at Dublin, have come to a resolution to commence burning the Lights on the whole of the Irish coast at sun-set every evening, similar to those on the coast of England, under the direction of the Trinity House.

An accident happened on the night of the 18th, which, if the weather had been bad, would have most probably been occasioned with loss of life to a serious extent. The French frigate Calypso, in returning from her cruising ground off Goree, and sailing with the wind on her larboard quarter, met the British squadron on a wind on the starboard tack. The French frigate crossed the bows of the Donegal within about a quarter of a mile without seeing the Talavera on the Donegal's lee quarter, till this vessel was on board of her. Happily, the Talavera then going six or

East India Commerce.—The number of vessels which reported at Anjier, passing the Straits of Sunda in 1831, out and home, was 238. Of the were Dutch, 58 out, 54 home; American 29 out, 29 home; English, 28 out, 27 home; French, 2 out, 1 home; Spanish, 3 out, 1 home; Hamburg, 2 out, 1 home; Russian, 1 out; Swedish, do; Danish 1 home.

NAVAL INTELLIGENCE.

FLAG-OFFICERS IN COMMISSION IN COMMAND OF STATIONS, FLAG-LIEUTENANTS, AND SECRETARIES.

Stations.	Flag-Officers and Commanders.	Ship.	Date of Appt.	Flag-Lieutenants	Secretaries.
Nore	{ Vice-Admiral Sir John Poo Beresford, Bart. } K.C.B.	a	30 July 30	{ John Wash- } ington. }	William Christy
Portsmouth	{ Admiral Sir Thomas Foley, G.C.B. }	b	22 April 30	Charles Gayton ..	James Pinhorn
Plymouth	{ Admiral Sir Manley Dixon, K.C.B. }	c	22 April 30	Matthew Foot ..	Thos. Woodman
North Sea	{ Vice-Admiral Sir Pal- } tenev Malcolm, K.C.B. } { Vice-Admiral Hon. Sir } Hen. Hotham, K.C.B. } G.C. St. M. and G.	d	9 M y 32	Rich. Morgan (a,	Joseph Edye
Mediterranean ..	{ Vice-Admiral Sir E. G. } Colpoys, K.C.B. }	e	30 Mar 31	Joseph F. Stirling	John Irving
West Indies .. }	{ Vice-Admiral Sir E. G. } Colpoys, K.C.B. }	f	20 Feb 30	{ Hon. A. W. } { Monckton. }	Edward Lawes
Halifax and .. }	{ Rear-Admiral Sir Thos. } Baker, K.C.B. }	g	9 Jan 29	John Bazeley ..	Alexander Kant
Newfoundland }	{ Vice-Admiral Sir John } Gore, K.C.B. }	h	16 Dec 31	{ Wm. Chesel- } { deu Brown }	Richard Haig
South America .. }	{ Rear-Admiral William } Parker. }	i	9 Sept 31	Wm. Hen. Jervis	Richard Hillyar
East Indies	{ Rear-Admiral Fred. Warren }	k	5 Aug 31	Rd. L. Warren ..	John P. Lamey
Lisbon					
Cape of Good Hope and Coast of Africa					

THE ROYAL NAVY IN COMMISSION.

* S. V. signifies Surveying Vessel, and St. V., Steam Vessel.

ACTÆON, 26—Hon. F. W. Grey, 6th Oct. sailed from Malta for Tripoli.
 ÆTNA, S. V. 6—Com. E. Belcher, Gibraltar, 5th Nov. at Oporto.
 ALBAN, St. V.—Woolwich.
 ALBERT, 18—Com. J. C. Fitzgerald, Pacific.
 ALFRED, 50—Capt. R. Maunsell, 20th Sept. Alexandria
 ALGERINE, 10—Com. Hon. J. F. F. De Roos, 20th Sept. at Pernambuco.
 ALLIGATOR, 28—Capt. G. R. Lambert, 24th June, Madras.
 ARACHNE, 18—Com. W. G. Agar, 15th Aug. Bay Fundny.
 ARIADNE, 28—Capt. C. Phillips, 12th Sept. sailed from Jamaica for Havana.
 ASIA, 8—Capt. P. Richards. Flag Ship, (i) Tagus.
 ASTREA, 8—Capt. W. King, Falmouth.
 ATHOL, Troop Ship—Mr. A. Karley, 22d Nov. left Woolwich.
 BADGER, 10—Com. G. F. Stowe, June, Mauritius.
 BARHAM, 50—Capt. H. Pigot 5th Oct. at Malta.
 BRACON, (late METEOR,)—Com. R. Copeland, 5th Oct. Gibraltar.
 BEAGLE, 10—Com. R. Fitz-Roy, August, Monte Video.
 BELVIDERA, 42—Capt. Hon. R. S. Dundas, 4th Oct. left Malta for Tripoli.
 BLANCHE, 46—Capt. A. Farquhar, K. H. C. B. 10th July, Barbadoes.
 BRISK, 3—Lt. J. Thompson, Gold Coast.
 BRITANNIA, 120—Capt. P. Rainier, 27th Oct. sailed for Lisbon. 5th Nov. Tagus.
 BRITON, 46—Capt. J. D. Markland, C. B. of Oporto Bar 5th Nov.
 CALEDONIA, 120—Captain J. Hillyar, Tagus.

CARRON, St. V.—.... Sheerness.
 CASTOR, 36—Capt. Rt. Hon. Lord John Hay, North Sea.
 CHALLENGER, 28—Capt. C. H. Freemantle, 9th July, at Madras.
 CHAMPION, 18—Com. Hon. A. Duncombe, 14th Oct. Sailed for Med. with Ceylon.
 CHARYBDIS, 3—Lieut. R. B. Crawford, Benin.
 CHILDERS, 18—Commander R. Deans, 12th Nov. arrived at Portsmouth. North Sea.
 CLIO, 18—Com. J. J. Onslow, 24th June, at Valparaiso.
 COLUMBIA, St. V. 2—Lt. R. Ede, Woolwich.
 COLUMBINE, 18—Com. O. Love, 12th Aug. Halifax.
 COMET, St. V.—Sheerness.
 COMUS, 18—(late Comet) Com. W. Hamilton, Plymouth.
 CONWAY, 28—Capt. Eden, North Sea.
 CORDELIA, 10—Com. C. Hotham, 5th Oct. Smyrna.
 CRUIZER, 18—Com. J. Parker, 3d June, Madras.
 CURAÇOA, 26—Capt. D. Dunn, 3d June, at Trincomalee.
 CURLEW, 10—Com. H. D. Trotter, 26th Aug. left Cape for Mauritius.
 DEE, St. V.—Com. R. Oliver, North Sea.
 DISPATCH, 18—Com. G. Daniell, 15th Oct. Sailed for Jamaica.
 DONEGAL, 74—Capt. J. Dick. Flag Ship. (d) North Sea.
 DRUID, 46—Capt G. W. Hamilton, C. B. June 20th, Pernambuco.
 DUBLIN, 50—Capt. Rt. Hon. Lord J. Towns- end, 27th June, at Lima.
 ECHO, St. V.—Lieut. Olway, Oporto.
 FAIRY, S. V. 10—Com. W. Hewett, Sheerness.

- FAVOURITE**, 18—Com. J. Harrison, 6th Aug Bonny River.
- FIREBRAND**—Lieut. Buchanan, Woolwich.
- FIREFLY**, 2—Lieut. J. M'Donnell, Cuba.
- FIREFLY**, St. V.—Lieut. F. Baldoek, Woolwich.
- FLAMER**, St. V.—Lieut. R. Bastard, 11th Nov. sailed from Falmouth.
- FLY**, 10—Com. P. M'Quhae, 31st August, 22d Oct. at Bermuda.
- FORRESTER**, 3—Lt. W. H. Quin, Chatham.
- GANNET**, 18—Com. M. H. Sweney, 11th Oct. at Jamaica from S. Martha.
- GRIFFON**, 3—Lt. J. Pariby, Chatham.
- HARRIER**, 18—Com. H. L. S. Vassal, 7th June, sailed from the Cape.
- HERMES**, St. V.—Lieut. J. Wright, Woolwich.
- HORNET**, 6—Lieut. F. R. Coghlan, 20th Oct. sailed for South America.
- HYACINTH**, 18—Com. W. Oldrey, 26th Aug. Sailed from Vera Cruz.
- IMOGENE**, 18—Capt. P. Blackwood, 8th July, Madras from Bengal.
- INVESTIGATOR**, 16—Sheerness.
- ISIS**, 50—Capt. J. Polkinghorne, Flag Ship, (k) August, Simon's Bay.
- JUPITER**, Troop Ship. Mr. R. Easto, 14th Nov. arrived at Cork.
- KANGAROO**, 3—Lieut. J. Hookey, August, Nassau.
- LARNE**, 18, (*late Lightning*.)—Com. W. S. Smith, North Sea.
- LEVERET**, 10—Lieut. W. F. Lapidge, at Oporto.
- LIGHTNING**, St. V.—Woolwich.
- MADAGASCAR**, 46—Capt. E. Lyons, 5th Oct. Trieste.
- MAGICIENNE**, 14—Capt. J. H. Plumridge, June, at Malacca.
- MAGNIFICENT**, 4—Lieut. J. Paget, Port Royal.
- MAGPIE**, Cutter—Lieut. J. Moffat, Sheerness.
- MALABAR**, 74—Capt. Hon. J. Percy, North Sea.
- MARTIFF**, 6, S. V.—Lieut. J. Graves, Archipelago.
- MELVILLE**, 74—Capt. H. Hart, June, at Madras. Flag-ship. (b)
- MESSENGER**, St. Transp.—Lieut. B. Aplin, Woolwich.
- METEOR**, St. V.—Lieut. Symons, 21st Sept. Malta.
- MINX**, 3—Lieut. G. G. Miall, Bahamas.
- NAUTILUS**, 10—Com. Rt. Hon. Lord G. Paulet, 27th Oct. sailed for Oporto.
- NIMBLE**, 5—Lieut. J. M. Polbury, Bahamas.
- NIMROD**, 20—Com. Lord E. Russell, 11th Nov. sailed from Falmouth for Lisbon.
- NORTH STAR**—Capt. W. Paget, 18th Oct. at St. John's, Newfoundland. 19th, sailed for Bermuda.
- OCEAN**, 80—Capt. S. Chambers. Flag-ship, (a) Sheerness.
- ONYX**, 10—Lieut. A. B. Howe, Plymouth.
- ORSTES**, 18—Com. W. N. Glascock, Oporto.
- PALLAS**, 42—Capt. W. Walpole, 8th Sept. at Jamaica.
- PEARL**, 20—Com. R. Gordon, 9th Sept. Port au Prince.
- PELICAN**, 18—Com. J. Gape, 5th Oct. Patras.
- PELORUS**, 18—Com. H. Meredith, 8th Aug. Cape.
- PHILOMEL**, 10—Com. W. Smith, 5th Nov. Gibraltar.
- PICKLE**, 5—Lieut. E. Stopford, Bahamas.
- PIKE**, 12—Lt. A. Brooking, Plymouth.
- PINCHER**, 5—Lt. W. S. Tulloh, Bahamas.
- PLUTO**, St. V.—Lieut. G. Buchanan, Bight of Benin.
- PYLADES**, 18—Com. E. Blankley, 31st Aug. at Bahia.
- RACEHORSE**, 18—Com. C. H. Williams, 2d Oct. sailed for Jamaica.
- RAINBOW**, 28—Capt. Sir J. Franklin, Knt. 5th Oct. at Corfu.
- RALEIGH**, 18—Com. A. M. Hawkins, 17th Sept. Alexandria.
- RAPID**, 10—Com. C. H. Swinburne, 5th Oct. Sicily.
- RATTLESAKE**, 28—Capt. C. Graham, Valparaiso, May.
- RAVEN**, S. V. 4—Lieut. W. Arlett, Oporto.
- RECRUIT**, 10—Lt. T. Hodges, Bermuda.
- REVENGE**, 78—Capt. D. H. Mackay, North Sea.
- RHADAMANTHUS**, St. V.—Com. G. Evans, North Sea.
- ROMNEY**, Troop Ship, Tagus.
- ROVER**, 1—Com. Sir G. Young, Bart., North Sea. Off the Texel.
- ROYALIST**, 10—Lieut. R. N. Williams, 16th Nov. sailed for Oporto.
- ST. VINCENT**, 120—Capt. H. F. Senhouse, 5th Oct., Napoli di Romania. Flag-ship. (e)
- SALAMANDER**, St. V.—Woolwich.
- SAMARANG** 28—Capt. C. H. Paget, 14th Aug. Left Rio for M. Video.
- SAN JOSEPH**, 110—Capt. R. Curry, Plymouth, Flag-ship. (c)
- SAPPHIRE**, 28—Capt. Hon. W. Wellesley, 4th Oct. Halifax from Cuba.
- SATELLITE**, 18—Com. R. Smart, North Sea.
- SAVAGE**, 10—Lieut. R. Loney, Plymouth.
- SCOUT**, 18—Com. W. Hargood, North Sea.
- SCYLLA**, 18—Com. Hon. G. Grey, 5th Oct. at Napoli.
- SEAFLOWER**—Lieut. J. Morgan. 17th Nov. sailed on Cruise.
- SERPENT**, 16—Com. Symonds, Woolwich.
- SKIPJACK**, 5—Lieut. W. Shortland, Bahamas.
- SNAKE**, 16—Com. W. Robertson, North Sea.
- SOUTHAMPTON**, 52—Capt. J. M. Laws, North Sea.
- SPARTIATE**, 74—Capt. R. Tait, North Sea.
- SPARROW**, Cutter—Lieut. C. W. Riley, Portsmouth.
- SPARROWHAWK**, 18—Com. Currie, act. 1st Oct. at St. John's from Quebec.
- SPEEDWELL**, 5—Lieut. W. Warren, August, Jamaica.
- SPEEDY**, Cutter—Lieut. J. P. Roepel, Plymouth.
- STAG**, 46—Captain N. Lockyer, North Sea.
- SULPHUR**, 8—Com. W. T. Dance, 5th June, at Swan River.
- SWAN**, 10—Lieut. J. E. Lane, North Sea.
- SYLVIA**, 1—Lieut. T. Spark, 23d Nov. at Portsmouth.
- TALAVERA**, 74—Capt. T. Brown, North Sea.
- TALBOT**, 28—Capt. R. Dickinson, C. B. 12th June, Mauritius.
- TRINCULO**, 18—Com. R. Booth, 12th Nov. sailed for Mauritius.
- TWEED**, 28—Com. A. Bertram, Aug., at Jamaica.
- TYNE**, 28—Capt. C. Hope, 30th Sept. Sailed for South America.
- UNDAUNTED**, 46—Capt. E. Harvey, June, at Mauritius.
- VERNON**, 50—Capt. Sir F. Collier, Knt North Sea.
- VICTOR**, 18—Com. R. Russell, 4th Oct. Halifax. 12th Oct. sailed for West Indies.
- VICTORY**, 104—Capt. H. Parker. Flag ship (b) Portsmouth.
- VIPER**, 6—Lieut. H. James, off Tagus.

VOLAGE, 28—Capt. Right Hon. Lord Colchester, North Sea.
WARSPITE, 76—Capt. C. Talbot, Flag-ship, (g) August, at Rio.
WINCHESTER, 52—Capt. Rt. Hon. Lord W. Paget, 21st Oct. left Halifax for Bermuda, Flag-ship. (f)
WOLF, 18—Com. W. Hamley, June, at Trincomalee.
ZEBRA, 18—Com. G. L. A. McMurdo, act. March, at Otaheiti.

Paid off into Ordinary.
FROLIC (Packet)—at Plymouth.
HOPE (Packet)—at Plymouth.
TYRIAN (Packet)—at Plymouth.
Commissioned.
ATHOL, 00—at Woolwich.
CARRON, St. V.—Sheerness.
COMUS, 00—at Plymouth.
SAVAGE, 10—at Plymouth.
SPARROW, Cutter—at Portsmouth.
SPEEDY, Cutter—at Plymouth.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.—Commander, J. B. L. Hay. Lieutenants, George Rose; Frederick Cannon. Surgeon, Isaac Wesley.

ÆTNA, 6—Mr. David Millar, *Act. Surg.*
ALGERINE, 10—Mr. Webb, *Master.*
ASIA, 84—Rev. Joseph Cooper, *Chaplain.*
ATHOLL, 28—Mr. Alex. Karley, *Master* Commanding.
BRITANNIA, 120—*Lieut.* John Maxwell.
BLONDE, 46—Mr. Turner, *Gunner.*
CARRON, St. V.—Mr. Thomas Hancorn, *Second Master*; Mr. J. W. Elliot, *Assistant-Surgeon*; Mr. Frampton, *Clerk.*
CASTOR, 36—*Lieuts.* Hon. S. Carnegie, F.D., Hastings; Messrs. Joseph Mc Gowan, L. Place, *Midshipmen.*
CHAMPION, 18—Mr. C. H. Niblett, *Clerk.*
COMUS—*Commander.* W. P. Hamilton; Mr. John Dallas, *Master*; *Lieuts.* S. G. Freeman-tele, R. Dowse; Mr. A. N. Earle, *Purser*; Mr. George Symes, *Surg.*; Mr. W. Gill, *Assist. Surg.*
CONFIANCE, St. V.—Mr. Edw. Hoblyn, *Mate.*
DONEGAL, 78—Mr. Chas. Martelli, *Mate.*
EGMONT, 74—Mr. T. Lloyd, *Boatswain.*
EXCELLENT, 58—Mr. Scagrove, *Gunner*; Mr. J. Brown, (a) *Second Gunner*; Mr. J. Johnson, *Boatswain.*
FIREBRAND, St. V.—*Lieut.* W. William G. Buchanan.
FIREFLY, 3—*Lieut.* Thomas Baldock.
FLY, 18—Mr. Smith, *Acting Lieut.*
GRIFFON, 3—Mr. Alexander Bryson, *Assistant Surg.*
HERMES, St. V.—*Lieut.* John Wright.
HORNET, 6—*Lieut.* T. Woods.
HYACINTH, 18—*Lieut.* W. Louisa.
ISIS, 50—*Lieut.* Ralph Hay.
MAGPIE, Cutter—*Lieuts.* J. Richards, John Moffatt.
MALABAR, 74—*Lieuts.* Henry Jellicoe, Charles Eden, Owen Stanley; Mr. George Johnson, *Assist.-Surgeon*; Mr. W. Ellis, *Master*; Mr. H. Arnott, *Assist.-Surgeon.* R. M. Capt. Drury; *Second Lieuts.* Molesworth, Phillips.
MINX, 3—*Lieut.* G. G. Miall.
MONKEY, 3, Tender—Mr. Stoll.
NIMROD, 20—Mr. H. Willmott, *Gunner.*
NORTH STAR, 28—*Lieut.* Welsh.
OCEAN, 80—Mr. George Doak, *Assist. Surg.*
PIKE, 12—Mr. Henry Osman, *Assist. Surg.*
RACEHORSE, 18—Mr. Joseph Stevenson, *Surgeon.*
RHADAMANTHUS, St. V.—Mr. Wm. Hodder, *Master*; Mr. Thomas Jelfery, *Purser.*
REVENGE, 78—*Lieut.* Coryndon Spettigue; Mr. Joseph Brown, *Second Master.* R. M. Capt. Samuel Garmston; *Second Lieut.* S. S. Crispo.

SAMARANG, 28—*Lieut.* Rich. Inman.
SATELLITE, 18—Mr. Philip Millman, *Master.*
SAPPHIRE, 28—*Capt.* H. G. Colpoys.
SAVAGE, 10—*Lieut.* R. Loney.
SERPENT, 16—Mr. John Bell, *Purser*; Com. J. C. Symonds; Mr. T. T. Jelfery, *Pur.*
SHAMROCK, Rev. Cruiser—*Lieut.* John James Keeling.
SOUTHAMPTON, 52—J. B. L. Hay, *Com.*; *Lieut.* J. E. Bingham; Mr. James Morrison, *Assistant-Surgeon.*
SPARROW, 10—*Lieut.* C. W. Riley; Mr. Chequin, *Second Master*; Mr. J. M. Starcke, *Clerk*; Mr. Alexander C. Macleeroy, *Assist.-Surgeon*; Mr. W. C. Harris, *Master's Assistant*; Mr. Colin Macdonald Speck, *Midship.*
SPARTIATE, 76—*Lieuts.* Frederick Hennah, Wm. Fanshawe Glanville; Mr. Evan Bowen, *Surgeon*; Mr. Mahard, *Schoolmaster*; Mr. N. S. Knott, *Admiralty Mate*; Mr. S. Hawker, *Midshipman*; Messrs. Patrick Campbell, and P. W. Gibbon, *Mates*; Mr. Brown, *Boatswain*; Mr. Lock, *Gunner.*
SPEEDY, 8—*Lieut.* J. P. Roepel; Mr. Byrth, *Purser.*
STAG, 46—*Lieut.* J. G. Dick; James Laddon, *Purser*; *First Lieut.* Thomas Stephens, R.N.; *Second Lieut.* J. J. Winne, R.N.
VERNON, 50—Mr. A. Lascelles, *Mate*; Mr. Brothers, *Gunner.*
VICTORY, Rev. Cutter—Mr. J. Cowley, *Mate.*
VICTORY, 104—*Lieut.* H. Eyres; Mr. Thos. Brennan, *Assistant-Surgeon*; Rev. T. Ferrica, *Supernumery Chaplain*; Messrs. G. Moore and C. Rankine, *Supernumery Assist. Surgs.*
VOLAGE, 28—*Second Lieut.* Murton, R.M.
WINCHESTER, 52—*Capt.* Hon. Wm. Wellesly; Mr. Arthur Savage, *Surgeon.*

Commander Wm. Haswell, of the Coast Guard service at Weymouth, is appointed to the Plymouth district, vice Morgan to the Malabar; *Lieut.* S. Osmar (1798) to the retired *Commander's* List of 1830; *Lieut.* G. W. Tonkin, to the Coast Guard on the coast of Sussex; *Lieut.* George P. Westbrook, of the Coast Guard service, on the Hapishbrook station, is removed to the Cromer station; Mr. J. Richards, *Gunner*, of H.M.S. Donegal, is ordered to be borne on the cheque at Portsmouth, having been superseded by Mr. J. Brothers, *Gunner*, of the Blonde; Mr. T. Crossman, late *Gunner* of H.M.S. Larne, is removed from the cheque at Portsmouth, to the cheque at Plymouth; Mr. Lloyd, *Boatswain*, is ordered to be borne on the cheque; *Commanders* John Monday, Thomas Bushby, George Charles Blake, and Mr. Worsley,

to the Coast Guard service; Lieut. John Hay (c) to the Coast Guard; Mr. Andrew Russell to be Assistant-surgeon of the Dock-Yard at Chatham, vice Whitmarsh placed on half-pay, in consequence of the sentence of a Court-Martial lately held on Capt. Burchell, on charges preferred against him by Mr. Whitmarsh; Capt. Millar Worseley is appointed Inspecting Officer on the Irish Coast Guard station; Commander Joseph Sherer, of the Lymington Coast Guard, is removed to the Weymouth district; Commander E. Bisset, to the Coast Guard service at Lymington; Com. C. Blake, to the Coast Guard service at Poole; Mr. R. Gallon, Gunner, of the Prince, has been discharged on a superannuation of £65 a year; and Mr. J. Rigg, Boatswain, of the President, on a superannuation of £45 a year.

ROYAL MARINES.

PROMOTIONS.—*Captains*, Unattached.—Prat; Ashmore; Pepsat; Cook; Delacombe; George Hookey. *First Lieuts.*—S. Hawkins; J. K. Wilson; R. A. Bridges; William Lee; H. W. Parke; A. B. Stransham.

CHATHAM DIVISION.—*First Lieutenant*—S. Hawkins.

PORTSMOUTH DIVISION.—*First Lieuts.*—J. K. Wilson, R.A.; Bridges; C. Robinson. *Assist. Surg.* Plimsole.

PLYMOUTH DIVISION.—*First Lieutenants*—William Lee; H. W. Parke; G. Watson.

Assistant-Surgeon Plimsole is appointed to the Portsmouth Division, and to be attached to the battalion under Major Parke at Cork; and the Assistant-Surgeons who were appointed when the cholera was apprehended have been discharged. Second Lieutenants Clapperton and Cossor, of the Chatham Division, have been ordered to the Portsmouth head-quarters, for embarkation.

WOOLWICH DIVISION.—*Capt.* C. C. Pratt, vice Capt. J. J. Wilde.

COAST GUARD.

Lieut. A. Kortwright (late Etna.)
CHILDERS, 19—J. L. Cooper, *Midship.*
FIREFLY, St. V.—F. Baldoek, *Lieut.*
HERMES, St. V.—W. Ellis, *Mate* (late Dryads.)

SPARROW, *Cutter*—W. C. Geary, *2d Master.*
ST. VINCENT, 120—Mr. Parker, *2d Master* late of Beacon.)

SNAKE, 16—J. Yule, *Master.*
SYLVIA, *Cutter*—J. Willcox, *Midshipman.*

VICTORY, 104—C Rankin, *Assist. Surgeon.*

CHAPLAIN.—The Rev. P. Panter is appointed to the Rectory of Thorney, in the gift of the Admiralty, in Northumberland, vice the Rev. E. Brice, resigned.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR THE PRESENT YEAR.

Reported to 20th October.				Reported to 20th November.			
VESSELS.	RIG.	TONS.	WHERE BUILT	VESSELS.	RIG.	TONS.	WHERE BUILT
Amelia	Brig	158	Hull.	Active	Schooner	89	Plymouth.
Ann & Sarah	Sloop	34	Maryport.	Ann Petley	Schooner	81	Dundee.
Arethusa	Barque	214	Liverpool.	Anna	Snow	250	Sunderland.
Blackney and Hull Packet	Sloop	52	Wells.	Betaey	Brig	145	Sunderland.
Blessing	Sloop	52	Knottingly.	Boyne	Brig	147	Greenock.
Branch	Schooner	86	Kirkaldy.	Cabrero	Snow	171	Sunderland.
Brilliant	Schooner	91	Cardiff.	Clutha	Snow	244	Newcastle.
Catherine	Schooner	68	Carnarvon.	Columbus	Ship		Whitby.
Daphne	Brig	166	Hull.	Elizabeth	Ship	445	Bristol.
Enchantress	Brig	189	Yarmouth.	Elvira	Snow	240	Sunderland.
Erin	Sloop	45	Bideford.	Emily	Snow	169	Sunderland.
Euphemus	Snow	223	Sunderland.	Envoy	Schooner	101	Selby.
Fly	Sloop	55	Peterhead.	Erin	Smack	46	Bideford.
Francis and Ann	Schooner	96	Barnstaple.	Fanny	Snow	124	Chepstow.
Francis and Mary	Schooner	109	Workington.	Francis	Ship	340	Liverpool.
Govlands	Brig	180	Sunderland.	Gentoo	Barque	368	Dumbarton.
Great Britain	Snow	224	Sunderland.	Gloria	Barque	199	Liverpool.
Houghton le Spring	Snow	273	Sunderland.	Henrietta	Snow	266	Hull.
Indus	Barque	368	Dumbarton.	Isabella Dick	Schooner	154	Graggemth.
Intrinsic	Ship	342	Chepstow.	John Stamp	Barque	400	Shields.
Kara	Schooner	136	Chepstow.	Kyle	Barque	332	Dumbarton.
Lusitania	Brig	132	Glasgow.	Nancy Brown	Schooner	96	Cork.
Maria	Snow	236	Sunderland.	Pearl	Brig	159	Whitehaven.
Medora	Brig	231	Sunderland.	Prosperous	Schooner	72	Cowes.
Percy	Brig	253	Shields.	Queen	Schooner	103	Newcastle.
Reform	Snow	156	Peterhead.	Rodolph	Brig	148	Greenock.
Reuben	Sloop	73	Wakefield.	Sarah	Schooner	109	Ipswich.
Royal Tar	Schooner	217	Aberdeen.	Shamrock	Schooner	53	Dunfanaghy.
Sisters	Snow	214	Peterhead.	Susan & Ann	Brig	181	Montrose.
Tempest	Snow	234	Sunderland.	Tyrer	Ship	334	Sunderland.
Thos. Leech	Brig	188	Liverpool.	Zaida	Brig	210	Sunderland.
Thornley	Snow	237	Sunderland.				
Widow's Friend	Schooner	54	Maryport.				
Zaida	Brig	210	Sunderland.				

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 501.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
344 Albion Packet	Marwood	Maldon	Sunderland	Orford	17 Nov.	6796 All saved.
345 Albion	Bowen	Bury	Carriagu	Off Tenby	14 Nov.	6795
346 Amity	Mayor	Limerick	London	R. Shaanon	20 Oct.	6789 Aband.off Riv
347 Beaver		Londouder.		Banks New-foundland	25 Aug.	Quebec paper
348 Bee	Anderson	Bangor	Sligo	Killough	28 Oct.	6791 Doubtful.
349 Boyne	Wadsworth	London	Leeds	Eastern Coast	11 Nov.	6794 Run t.of.cw.sd
350 Busy Bee	Purvis	Bangor	Berwick	Campbletown	10 Nov.	6796 1 Drowned.
351 Captain	Smith			Buchan	10 Nov.	6795 Totally lost.
352 Carnation	Carr	C. Haytieu	Cowes	Near Henegaz	12 Sept.	6791 Crew aud part cargo saved.
353 Cossack	Donald	Archangel	Wick	Off Drouthm.	22 Sept.	6788 Doubtful.
354 Dartmouth	Cridge	London	London	E.of Dartmth	10 Nov.	6794 6 drown. 1 sd.
355 Emerald Isle		London	Preston	Near Crosby	3 Nov.	6792 Doubtful.
356 Experiment	Millican	Maryport	Dumfries	Off Whitehvn	21 Oct.	6791 All drowned.
357 Favorite	Forrest	Liverpool	Narva	Halnestat	4 Oct.	6788 C.Sweden, sd.
358 Fleetwood		Bridge watr	Quebec	Off Trinity	10 Oct.	6792 Crew. A.C. sd.
359 Flora		Quebec	Padstow	Anticosti	Sept.	Quebec paper.
360 Flora	Sherriff	Sydney	Batavia	Forres Straits	April	6794 Crew saved.
361 George and Thomas		Quebec	Dublin	Langley Isle	6 Nov.	6793 Total.
362 George and Thomas						
363 Grain		Barbadoes	Quebec	Langley Isle	12 Aug.	6791 Crew saved.
364 Guardian	Dixon	Copenhagn.	Nemel	Nemel	3 Nov.	6795 Crew saved.
365 Harrey		Yarmouth	Gainsbro'	Whitton Isle	13 Nov.	6795 Crew saved.
366 Helen	Cook	Hull	Terceira	Cal.	17 Nov.	6796 All saved.
367 Helen and Maryann	Vaux	Archangel		C. Norway	17 Sept.	6790 Cw.&kt.cgo.sd
368 Hope	M'Taggart	Campbletn.		Green Stn Pnt	4 Nov.	6796 All drowned.
369 Hope	Prentice	Glasgow	Limerick	Fairhead	10 Nov.	6795 Crew saved.
370 Hull				Strandhaff	12 Oct.	6799 Of N. Shields.
371 Hyndman		Stockton	Miramichi	Gabarus	1 Oct.	6796 Crew saved.
372 Hyperion	Meritt	London	St. Andr. N.B.	Off Little Rim	22 Sept.	6791 Cw. 1 drowned
373 Hypolite	Tonge	Cronstadt	London	Cronstadt	16 Oct.	6792 Crew saved.
374 Industry		Halifax		R. St. Charles	11 Oct.	6794 Crew saved.
375 Inverness	Pong	Sligo	London	Rosay	24 Oct.	6780 Abandoned 15
376 Johns	Johnson	Shields	Inverness	North Shields	10 Nov.	6794
	Rickaby	Archangel	Hull	Candense	21 Sept.	6794 Sold for 3350 roubles.
377 Lady Peel		Liverpool	Bristol	Flatholmes	11 Oct.	6789
378 London Merchant	Ward	London	South Seas	Youl Reef	18 Dec.	6791 All lost.
379 Margrit & Ann	Rae	Newcastle	Belfast	Near Obau	3 Nov.	6794 Crew saved.
380 Maria	Wak-field	Petersburg	London	Gothenburg	22 Oct.	6792 On hittle Rks
381 Marie Joseph	Richards			St. Lawrence	1 Oct.	6791 Crew saved.
382 Martha	Boulanger	Gaepe	Quebec	Pt. St. Peter	1 Sept.	6790
383 Mary-Ann	Davis	Youghall	Liverpool	Anglesey	1 Nov.	6792 Doubtful.
384 J. Munro	Munro	London	Westport	Doerennes	12 Nov.	6795 Arround.
385 Neptane	Gordon	Dunbar	Rosehearty	Off Aberdeen	30 Oct.	6792 Capsized in sq. crew saved.
386 Ocean				Vlieland	20 Oct.	6789 Of Yarmouth
387 Ocean	Krank	Liverpool	Wyburg	Stavanger	7 Oct.	6792 Crew saved.
388 Orion	Mawson	Sunderland	London	Eastern Coast	10 Nov.	6794 By fire.
389 Perseverance	Morrison	Liverpool	Bremen	St. Ives	6 Nov.	6793 One boy lost.
390 Prince of Orange		London	Hambro'	Vogelaud	24 Oct.	6790 Stranded.
391 Prince of Waterloo		Cork	Quebec	At sea	Aug.	Quebec p. shandnd
392 Quebec Packet		London	Quebec	Egg I., S. I.	21 Sept.	6791 Crew saved.
393 Rebecca	Lanrie	Glasgow	Quebec	Near C. Chat	21 Sept.	6791 Cw. & cgo.sd.
394 Resolution		Ayr	St. John. N.B.	Banks New-foundland	13 Oct.	6793 Aband.cw.sd.
395 St. Patrick	Digby	Demerara	Belfast	I. Grenada	7 Aug.	6789 Crew saved.
396 Snipe		St. Michael's		Vill. Condo	29 Sept.	6790 Cw & pasng.sd
397 Sophia	Ingerman	Harsley	Lynn	Grimsby	24 Oct.	6789 Leaky.
398 Swift				Douglas Bay	10 Nov.	6796 Fcundered.
399 Tiber	Gibbeson	London	P. D' Arenas	May	6790 Destroyd. b. fr	
400 Unicorn	Troup	Liverpool	Quebec	Cutseau Bay	2 Oct.	6788 New-foundland. cw. sd.
401 Water Witch	Holt	Cephalonia	Hambro'	Anerum	Nov.	6795 Crew saved.
402 Wellington	Batty	Lynn	Goole	Whitton Sand	10 Nov.	6795 Crew saved.
403 William Appleton	Frans	Liverpool	Jamaica	Arklow Bk.	29 Oct.	6791 Aband.cw.sd.
404 William IV.	Brown	Newry	London	Near Land's End	5 Nov.	6793 All lives lost. wreck sld. f. 102.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Active Cistus Douglas	Bentley Graham	London Newcastle Plymouth	Hall London	Agronnd Harwich St. Andrew's, N. B.	10 Nov. 6794 7 Nov. 6793 Oct. 6793	Near Saltfleet. Been aground Dismasted.
Jubilee Lara	Furse Beddell	Plymouth	Newport Cronstadt	Scilly	7 Nov. 6794 18 Oct. 6792	On shrs. betw. Cron. & Tolbuha Light-house.
W. M'Leay Peggy Protector	Cassady Sim Burtenshaw	Liverpool Waterford Bombay	Limerick Liverpool	Kingstown Bardsey Mauritius	7 Nov. 6794 5 Nov. 6793 6 Aug. 6795	Been on flanks In sinkig. state Leaky.
Rose Samuel & Jane Warsaw	Dobbins Coulson Scott	Galipoli Sunderland Petersburg	Petersburg London London	N. Deep Bridlington Christand.	2 Nov. 6793 29 Oct. 6791 2 Oct. 6789	Been on flanks In sinkig. state In sinkig. state

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
Albion		Limerick	St. John's	43 N 60 W	8 Oct. 6793	
Bolton	Oldham	London	Madras	36 S 22 E	18 Aug. 6791	
Cordelia	Weaver	Liverpool	Bombay	27 S 51 E	30 July 6793	
Centurion		London	Quebec	47 N 54 W	30 Sept. 6791	
Eleaour		Liverpool	Miramichi	44 N 48 W	2 Oct. 6791	
Flora	King	Clyde	Bombay	11 N 26 W	15 July 6789	
Golden Fleece	English	Newcastle	Rio	33 N 27 W	7 Nov. 6796	
Henrietta	Smith	Madeira	Newfound	43 N 31 W	3 Nov. 6796	
Hippomenes	Duthie	London	Valparaiso	29 S 36 W	8 Aug. 6796	
Joanna		Clyde	Bengal	33 S 48 E	16 June 6791	
Lady Charlotte		Liverpool	Africa	36 S 20 W	4 Nov. 6796	
Lord Hungerford		London	Madras	56 S 22 E	17 Aug. 6791	
Minerva		Lancaster	St. John's	43 N 58 W	3 Oct. 6793	
Mulgrave			Bombay	Off Bourbon	10 Aug. 6791	
Mulgrave Castle		Liverpool	Quebec	48 N 58 W	9 Oct. 6791	
Orissa		Clyde	Bengal	37 S 9 E	31 May 6791	
Othello		Jersey	Rio Jan.	2 N 21 W	17 Sept. 6791	
Pomona	Hall	Limerick	Miramichi	46 N 59 W	10 Oct. 6793	
A. Robertson	Gray	London	C. G. Hope	8 S 23 W	1 Sept. 6794	
Stephen		Falmouth	Pictou	44 N 45 W	5 Oct. 6791	
Traveller		Liverpool	St Domingo	40 N 44 W	3 Nov. 6796	
William	Donald	Liverpool	Savana	47 N 24 W	28 Oct. 6796	
Zephyr	Evans	Liverpool	St John N. B	48 N 37 W	15 Oct. 6793	

EAST INDIA SHIPPING.

On the 20th Oct. a Court of Directors was held at the East India House, when the following ships were thus timed, viz.—*Duke of York* and *Scaely Castle*, for Bengal and China; *Marquis of Huntly* and *Duke of Sussex*, for Bombay and China,—to be afloat on the 3d December, sail to Gravesend on the 24th, stay there twenty-one days, and be in the Downs, January 14. *Warren Hastings*, *Keltie Castle*, and *Buckinghamshire*, for Bengal and China; *Herefordshire* and *Thames*, for Bombay and China,—to be afloat January 7, stay there twenty-one days, and be in the Downs, January 28. *Lothier Castle*, for St. Helena, Bombay, and China; to be afloat January 2, sail to Gravesend on the 23d, stay there

twenty-one days, and be in the Downs, Feb. 13. *Vansittart* and *Castle Huntly*, for Bengal and China; *Farguharson* and *Lady Melville*, for Bombay and China,—to be afloat, Jan. 16, sail to Gravesend, Feb. 6, stay there twenty-one days, and be in the Downs Feb. 27. *Inglis*, *Prince Regent*, and *Waterloo*, for China direct; to be afloat, March 4, sail to Gravesend on the 25th, stay there twenty-one days, and be in the Downs, April 5. *Rose*, *Minerva*, and *Thomas Grenville*, for China direct; to be afloat, March 18, sail to Gravesend, April 3, stay there twenty-one days, and be in the Downs, April 29.—*Hants Telegraph*.

MOVEMENTS OF TRANSPORTS.

AMPHITRITE—Lieut. Cooley, River Thames.
DILIGENCE—Portsmouth.
HOPE—Lieut. Ryder, sailed from Plymouth.
INDUSTRY—Lisbon.
MAITLAND—Sailed for Lisbon with coals.

MARTIAL BENNET—Woolwich.
ORESTES—Lieut. Garrett, at Deptford.
PRINCE REGENT—River Thames.
STENTOR—Lieut. E. B. Davison, Deptford.
WILLIAM HARRIS—Lieut. Stephens, Thames

FOREIGN MAILS.

BOMBAY—Runnymede, Wildridge, from London Dock, 15th Dec.
 Providence, Campbell, from St. Katharine's Dock, 5th Dec.
BATAVIA—Lion, Bathie, 10th Dec. from Liverpool.
CALCUTTA—Ganges, Ingram, 1st Dec. from East India Dock.
CEYLON—Africa, Skelton, 5th Dec. from St. Katherine's Dock.

LA GUAYRA—Breechin Castle, Newlands, 1st Dec. from Liverpool.
MADRAS—Orontes, Reeves, 15th Dec. from West India Dock.
RIO JANEIRO—M. Plummer, Leighton, from Liverpool, 1st Dec.
ST. HELENA—Maria, Nunn, 10 Dec. from St. Katherine's Dock.

Births.

In North-street, Chichester, on 10th Oct., the lady of Lieutenant Critchell, R.N., of a daughter.

At Southsea, on 25th October, the lady of Mr. John Yule, Master R.N., of a daughter.

On 2d November, at Elm-Grove, Portsmouth, the lady of J. B. E. Soden, Esq. Purser of H.M.S. Samarang, of a son.

On 6th November, the lady of Captain Kempe, R.N., Lemon-street, Truro, of a son.

Lately, in London, the lady of Lieutenant Urquhart, R.M. of a son.

At Cheltenham, on the 8th November, the lady of Lieutenant Bradley, R.N., of a son.

Marriages.

Lieut. Mayott, R.N. of Greenwich, to Maria, daughter of F. Bedford, Esq. of Greenwich Hospital.

On Thursday, November 1, at Alverstoke Church, Mr. William Cook, R.N., to Mrs. Elkins, both of Brockenhurst.

On the 28th Oct. Mr. J. T. Dormer, Master, R.N. to Elizabeth Carter, eldest daughter of William Jewell, Esq. Kingstone Crescent.

At Cothridge, Worcestershire, by the Rev. Edward Green, Captain Holbrook, R.N. to Mary, widow of the late Lieut. William Stock, R.N.

At Thornton-le-Fen, Lincolnshire, H. B. H. Long, Esq. Purser, R.N. to Elizabeth, daughter of the late Rev. W. Broadbent, Vicar of Baumber, Lincolnshire.

At Gresford, Captain Mostyn, R.N. of Llewesog, Denbighshire, to Susanna, daughter of the late J. S. Townshend, Esq. of Trevalyn, in the same county.

Deaths.

At Hardway, near Gosport, Lieut. Thomas-James Broderick, R.N., leaving a widow and five children, eldest son of James Broderick, Esq. of Plymouth.

Thomas Boys, Esq., Vice-Admiral of the Blue, a humane, brave, and honourable man.

Suddenly, on 7th November, at Berwick-upon-Tweed, Commander William Saunders, inspector of the coast-guard in that district.

At his residence, near Fratton, on 4th November, Lieut. Abraham Hughes, R.N., after a protracted illness of two years.

Late Melancholy Death of Captain Skinner, R.N.—Captain Skinner, commanding the Escape post-office steam-packet, sailed from Howth on Tuesday morning, at nine o'clock, with a fair wind, for Holy-Head. Between two and three that day, about five miles from the land, the packet was struck by two very heavy waves following each other. The second dashed Captain Skinner, and his mate William Morris, (a stout and able seaman,) through the bulwarks overboard, carrying away binnacle and compass, and knocked down the man at the helm, who fortunately got entangled in the chain of the wheel, which was broken, and by this means he was saved. It is supposed Captain Skinner and the mate were killed on the instant, as they were seen for twenty minutes floating with their faces downwards, and no appearance of life. Every exertion was made, and several times they were caught with the boat-hook by their clothes, which gave way. On the arrival of the packet at Holy-Head, the pier was crowded by persons of all ranks, anxious to know what misfortune had happened, having previously learnt by signals made at the station-house on the top of the head mountain, that an accident had occurred. It is totally impossible to describe the effect the melancholy tidings had on the multitude—the screeches and lamentations were awful. The loss of Captain Skinner will be severely felt at Holy-Head, particularly by the poor, to upwards of one hundred of whom he weekly gave out of his private purse an allowance of bread. He was esteemed by every person who knew him; and from the length of his servitude in his Majesty's packet service, (nearly forty years,) together with his civil, obliging, and gentlemanly manners, he became a decided favourite, and most families of distinction preferred crossing by the vessel he commanded. In the year 1821 he had the honour of bringing over his late Majesty George the Fourth, by whom he was offered knighthood, which he declined. The highest honour that could be bestowed on him, so as to retain the situation of Captain in the Holy-Head station, was graciously conferred, by his Majesty promising him to be Master and Commander of the Royal Navy. Captain Davis of Holyhead has offered a reward of £10 for the recovery of his body.—*Dublin Register.*

Supplement
TO
No. X.
OF THE
NAUTICAL MAGAZINE,
&c.

DECEMBER, 1832.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

Reported Danger to the North-east of ASCENSION considered.
Lat. $6^{\circ} 35'$ S. Long. $12^{\circ} 57'$ W.

ON the authority of Commodore Hayes, and Mr. A. Weir, the master of H.M.S. Dryad, we can no longer give credit to the statement of Mr. Fraser, of the ship St. George, in 1830, relating to the existence of a dangerous rock to the north-east of Ascension. By the following it will be seen, that the Dryad and her tender went in search of it; and from the care taken in the observations, as well as the common occurrence of shoals of fish being frequently seen in those latitudes, and the great probability that it would have been discovered before, had such a rock existed, we must conclude that there is no such danger.

The master of the ship St. George, on her passage to the Island of Ascension, in the employ of Government, on the 14th October, 1830, having reported the existence of an extensive danger in lat. $6^{\circ} 35'$ S. long. $12^{\circ} 57'$ W. and left with the commandant of Ascension an extract from his log relative thereto, H. M. S. Dryad, accompanied by her tender, sailed from that island on the 14th January, 1832, to search for, and, if possible, give so dangerous a shoal a positive position.

On the following day, at 11 A.M., the Dryad was upon the exact spot, the tender bearing N. W. four or five miles, the day very fine and clear, a five or six knot breeze by the wind, and sufficient swell to break upon a shoal: nothing, however, indicating the existence of a shoal could be detected.

NO. 10.—SUPPLEMENT. 4 B

The Dryad's chronometers were regulated by sights taken with the false horizon at Fernando Po, (using the meridian of Point William, as assigned to it by Captain Owen,) on the 3d November, 1831, from which day, until the 14th January, 1832, these chronometers preserved a very fair rate, by daily comparisons, and gave the longitude of the Island of Ascension, on the 13th January, 1832, as follows:—

1969 Arnold	14°	24'	40" W.
512 Murray	14	22	50 W.
632 Westwood	14	21	25 W.
186 Mc. Cabe	14	26	0 W.

Mean 14 23 44 W.

By these results, the position of the Dryad, on the 14th, aided, on that day, by excellent observations for the chronometers, as well as the latitude at noon, must be considered as accurately obtained, and was as follows:—

Latitude 6° 29' S.
 Longitude, mean of 4 chronometers 12 51 W.

On reading the paper left by the master of the *St. George*, it appears that the night was cloudy: on referring to the Nautical Almanack for October, 1830, it appears, when the reef was seen, that the moon was four days in the last quarter; and, on laying the position of the *St. George* off by the bearings given of the reef, both when first seen, and three times subsequently, as well also by the statement itself, it appears that the reef was from a mile to a mile and a half from the ship—a distance at which a danger could not be visible, under the circumstances of the night being cloudy, and unassisted by a glimpse of the moon. It is more probable that a laudable anxiety for the safety of vessels making the voyage, converted some of the shoals of fish frequently met with in the sea about Ascension, into a dangerous reef, than that any such reef really exists.

The following is a copy of remarks from the log of the ship *St. George*, R. Wylam, master, the 14th October, 1830, on her passage from London to the Island of Ascension:—

“A. M. Fresh breezes and cloudy, the ship steering S.W. by W. $\frac{1}{2}$ W. going at the rate of $6\frac{1}{2}$ miles per hour. At 2h. 40', observed broken water, or reefs, on the lee-bow, bearing by compass W. by S., three cables' length off. Put the helm down, when the ship came up to S. $\frac{1}{2}$ W. At 2h. 50', they bore N.W.; at 3, North; and at 3h. 10', lost sight of them, last bearing N. E.

“There appeared to be a reef running in the S. by E. direction, about one mile in length.

“N. B. Saw three distinct rocks or breakers, the sea breaking very high on them, the wind E. S. E.

“Ship's latitude 6° 35' South.

“Longitude 12 57 West.

(Signed)

“HUGH ROSE FRASER, Chief Officer.”

On the Longitude and Anchorage, off British ACCRA, on the West Coast of Africa.

British Accra is laid down in the charts on the meridian of Greenwich, and in lat. 5° 32' N. H.M.S. *Dryad*, Commodore Hayes, anchored there on the 15th of February 1832, in $6\frac{1}{2}$ fms., with the fort at British Accra bearing N. N.W. by compass, and the fort at Danish Accra N.E. by N. by compass, off the shore

about three miles. For several days, the latitude was observed at noon, and sights obtained for chronometers. The ship's anchorage was found to be in latitude $5^{\circ} 30' 15''$ N. and longitude by the undermentioned chronometers, which had been carefully regulated at Sierra Leone, on the 1st February, 1832, (allowing King Tom's Point, at Sierra Leone, to be in $13^{\circ} 14' 30''$ W.) as follows:—

1969 Arnold	$0^{\circ} 12' 55''$ W.
512 Murray	0 14 32 W.
632 Westwood	0 13 18 W.
186 Mc. Cabe	0 12 35 W.

Mean 0 13 20 W.

Variation . . . 19° W.

This will give the fort at British Accra in lat. $5^{\circ} 32' 27''$ N., and long. $0^{\circ} 15' 20''$ W. The anchorage of the Dryad is better than either farther in shore (being less affected by the swell when it sets in) or to the westward of the fort, as the ground in the latter place is composed of such hard and tenacious clay, that ships on this account frequently come to with their stream anchor and bower chain shackled to the same.

On the Geographical Position of Little Popoe, by Mr. Weir, Master of H.M.S. Dryad.

This place is generally laid down in lat. $6^{\circ} 9'$ N. and long. $2^{\circ} 6' 30''$ E. On the 24th February, 1832, in H. M. S. Dryad, latitude by observation was $6^{\circ} 2'$ N., and longitude, by the undermentioned chronometers, regulated at Sierra Leone, as follows, considering King Tom's Point in long. $13^{\circ} 14' 30''$ E. :—

1969 Arnold	$1^{\circ} 47' 32''$ E.
512 Murray	1 45 30 E.
632 Westwood	1 46 34 E.
186 Mc. Cabe	1 47 52 E.

Mean 1 46 52 E.

The ship Africanus, of London, from Little Popoe, was boarded by the Dryad, and the master stated, that a brig, seen from her mast-head, was at anchor in the roadstead of Little Popoe, bearing from her at noon, N.N.W. by compass, distance fifteen miles. Mr. Weir is, therefore, of opinion, that the roadstead of Little Popoe is in lat. $6^{\circ} 13'$ N. and long. $1^{\circ} 36'$ E.

This, of course, can be called only an approximation to the correct situation, though certainly more to be depended upon than the chart.

On the Penedo de San Pedro, by Commodore Brou, commanding the French ship-of-war Hermoine, on the coast of Africa, as determined by him in 1825:—

The Penedo de San Pedro is a mile in extent, in a N. E. and S.W. direction, and it may be seen from four to five leagues off in fine weather: when bearing N.W. it appears in the form of three small pinnacles of sharp, naked rocks, of a remarkable shape. The S.W. pinnacle is separated a short distance from the others.

This islet appears to be safe to approach; I did not perceive any breakers in the offing, which would lead me to suppose there were any sunken rocks.

We sailed round it on the east side, at the distance of five miles from the shore: we did not try for soundings; but the colour of the water leads me to

believe that bottom could not be found in this direction, and at this distance from the shore. These rocks are the abode of a great number of aquatic birds.

The currents hereabouts have set us to the westward at the mean rate of 18 miles, and to the north 6 miles, in 24 hours, between the parallel of 8° N. and the equator, and the meridians of 28° W. and 30° W.

At Penedo the currents change their direction, and set us to the northward at the rate of 18 to 20 miles a day, without much increasing the longitude.

Position of	Latitude	0° 51' 00" N.
Penedo.	Long. by chron. 136	29 23 07 } W.
	Do. distance of (*	29 23 27 }

The longitude by time-keeper was determined by three series of sights, taken in the evening, being nine miles to the north of Penedo.

The foregoing position of Penedo, by Commodore Brou, may be depended on, as it agrees very well with that assigned to it by Captain Fitzroy, in *H.M.S. Beagle*; but we find it very erroneously laid down in some books of directions. The longitude is reduced to Greenwich.

CALLAGAUK ISLAND, Gulf of Martaban. By Captain Ross.

Callagauk, including a small island that is close to its south point, extends six miles in a direction north and south; it has three hummocks on it, the northern one of which is the highest, and, when viewed from the westward, has the appearance of a peak. The island is broadest at the northern part, being about 1½ mile thereabouts, and generally about ½ a mile to the southward.

The latitude of the smaller island is 15° 29' 43" N. and it is east of Amherst 5' 45".

The space between Callagauk and the continent is 4 miles wide; and in traversing about it, we did not meet with any danger, excepting near to the continent, where there are some high black rocks, extending a short distance from the shore: the depth varies from 6 fathoms at low water, near to Callagauk, to 11 or 12, deepening as the continent is approached.

The eastern side of the island lies about north and south, and appears to be free of danger, excepting a small reef that runs about ½ a mile off the smaller island to the south-west.

The ground is all mud, and holds well; the tides are moderate, running at about 3½ on the springs; and the rise and fall, I apprehend, will be found to be at 18 feet at that time.

On the east side of Callagauk, a short distance above the highest hummock, we found a pool of very good fresh water, in December, at a sandy beach; and judging from the springs which we saw forcing themselves from the pool through the sand, at low water, I think it probable that the watering-place may be made fit for ships by digging a well; although, had we required to water there, we might have done so in December. There may be other springs on the island, as we did not look closely for them.

To the northward of Callagauk there is a long sand-bank, stretching to the N.N.E.; it is nearly six miles long, and its southern end approaches Callagauk so near as to leave a narrow and shallow channel; the northern end terminates about 1½ mile to the westward of a small island, rendered remarkable by some tall trees on the west brow; the sand is steep to thereabouts, and the depth from 12 to 10 fathoms.

The long sand is dry in several places at half-ebb neap tides, and at low springs must be nearly all dry. One spot about the middle of it, I am led to believe, is never covered, as it has some grass and other vegetation on that part, and is resorted to by numerous turtles. The space between the sand and the coast is about 3 miles wide, with depth of five to seven fathoms at low water, and the dry part of the sand has seven fathoms near to it. I am of opinion that the anchorage between Callagauk will be found safe for shipping in the S.W. monsoon, with the advantage of being able to enter or quit by night or day; I would not recommend going in by the north between the sand and continent, but always to go round the small island, which is off the south end of Callagauk, and to anchor in the S.W. monsoon, about $\frac{1}{2}$ a mile or $\frac{3}{4}$ of a mile off the shore, a little above the highest hummock, in seven fathoms at low water, neap tides, or six fathoms at spring tides; hereabouts you will have the long sand to the north preventing any swell approaching from that quarter. The island of Callagauk will bear from about N.W. to S $\frac{1}{2}$ W. the same depth will be found between the ship and the island. You will be about 31 $\frac{1}{2}$ miles from Amherst. There is a small projecting hummock of the main land, about east from the dry part of the long sand; it has a pagoda on it, and a creek and fishing-stakes. I apprehend the creeks do not penetrate, for in the four that I saw, (between the south end of Callagauk and the island with the trees on its brow,) their entrances were dry at low water.

The lands opposite to Callagauk appear favourable for cultivation, for about 7 or 8 miles from the coast, as the high land commences at about that distance.

In the N.E. monsoon a ship could anchor close to the main, when abreast the north part of Callagauk; but further to the southward, abreast the small island, there is a long ledge of rocks, with many others bordering the shore, about $\frac{1}{2}$ or $\frac{3}{4}$ of a mile off; therefore, in turning to the anchorage, keep nearest to Callagauk in from 10 to 7 fathoms, remembering that it deepens towards the rocks of the continent to 12 or 13 fathoms. The latitude of the highest hummock on Callagauk is 15° 34' 26" N.

The long sand is steep to all along its western side, having 12 or 13 fathoms close to it; and the west side of Callagauk should not be approached under a mile, as there are a few straggling rocks along the island.

The latitude observed on the dry part of the long sand is 15° 38' 2" N.

(Signed)

D. Ross,

Marine Surveyor General.

WEST COAST OF SCOTLAND. *Remarks by Lieut. Lane, R.N. commanding His Majesty's Cutter Swan, 1832.*

SOUND OF ISLA. A rock lies off Mackerter's Head, bearing from it E.N.E. a full cable's length from the shore, on which are four feet at low water.

SOUND OF MULL. A rock, on which are 14 feet water, lies one-third from Caretenach Point, and two-thirds from Artornish Castle, in a direct line between them; Castle Duart being on with Scalisdal Point. The Port Mahon struck on this rock in 1815.

The New Rocks in this Sound are 2 $\frac{1}{4}$ miles from Tobermoney, and 1 $\frac{1}{2}$ mile from the nearest part of Mull Island.

RONA ISLAND. Off Ganichaw Rock, which is one mile from Rona, is a reef of detached rocks, running N.E. three-quarters of a mile from the Ganichaw, on which are only four and six feet at low water. To clear these, Portree Harbour must be open of Rona, at least two sails' breadth.

VOYAGES AND MARITIME PAPERS.

ON THE DEFECTS PRODUCED IN SHIPS' BOTTOMS BY MARINE ANIMALS, with Descriptive Remarks on some of the most Destructive Kinds; by Mr. Willcox, of His Majesty's Dock-yard at Portsmouth.

It is generally observed, in the examination of ships in dock, whenever the copper is found to have been materially decayed, or beaten off any part of the ship's bottom, that the plank is injured by the attacks of marine animals.

In some climates (particularly in the East and West Indies, on the coast of Africa, and in the Mediterranean,) the destruction of the timber is found to be much more rapid than in others, from the abundance of these animals which there infest the seas. The danger to be apprehended from them there, is very great; and indeed it is every where unsafe to allow any part of the bottom of a ship to remain unprotected from their attacks. Many methods of covering the surfaces of ships' bottoms with protecting substances have been proposed, but nothing has been yet found to answer so well as copper sheathing.

The most destructive of the marine animals are, the *Teredo*, the *Pholas*, and the *Lepisma*; of these three, the most destructive is the *Teredo*. This genus is said to have been originally imported from India. They penetrate the hardest wood, and gradually increase in size as they proceed in their devastation, making such havoc, that the part which is attacked by them frequently becomes like a honeycomb. It is, however, rather an uncommon circumstance for them to bore through, although they approach the interior surface within a very small distance, after leaving a substance not thicker than the twentieth part of an inch from the inside. Such circumstances must be attended with the probability of serious consequences, as the natural effects produced by the action of the water on such reduced parts, must in a short time open a passage into the ship.

An instance occurred in the case of his Majesty's ship *Sceptre*, of seventy-four guns, which fully proved the danger caused by their attacks: she left Bombay, destined for England, in 1807, and after being some time on her passage, was obliged to return in consequence of a serious leak, which was found to have proceeded from the bow; and on her being examined, it was ascertained to have originated in consequence of some of the copper having been rubbed off, and the parts of the bottom and the gripe thereby exposed, having been attacked by the *Teredo*, which had penetrated these places to such an extent as to render her quite unsafe to pursue her voyage, without putting new plank on the bottom, and shifting the gripe.

The writer has many opportunities of examining these destructive animals, in their various stages of existence. His observations have in many cases agreed with the accounts given by Turton, although in some respects he is led to differ from that naturalist.

The species of *Teredo* most commonly found in ships' bottoms is the *Teredo navalis*. The shell is a tube, more or less thin, semitransparent, white, smooth, tapering until the animal is at its full size, length frequently found several feet, the tube very irregular in form, and extends as the animal advances, which continues to bore as long as the aliment is suitable to its life. To the head of the animal, Turton says, are attached two hemispherical valves, which are "very convex, both sides tapering longitudinally, or from the hinge

• From the Papers of Naval Architecture.

to the front margin to an obtuse point, giving them a triangular appearance; on the side of each, close to the hinge, is a somewhat triangular projection, which is regularly, but rather remotely, striate transversely; behind this is a narrow space, minutely and closely striate longitudinally in straight lines; the remaining surface irregularly striate in a curved direction; on the opposite side, close to the hinge, is a smooth rounded projection, defined on the under-side by an oblique longitudinal ridge, inside white, glossy, with a thick knob at the termination of the smaller end; hinge with a long slender curved tooth in each valve, placed interiorly as in the *Pholas*, besides a tooth-like projection seated upon the hinge, which in one valve terminates in a small reflected lamellar point, locking into the opposite valve." These valves are supposed by this author to be attached to the cylindrical tube: this, however, does not appear to be the case; for, if a piece of wood which contains these animals be split, the valves may be discovered in a perfect state a little beyond the tube, unconnected; and by inserting the point of a penknife between the valves, the animal may easily be drawn out, without any apparent injury. The tubes are formed of a calcareous secretion, and are useful in affording to the animal an easy and smooth passage; they also prevent the encroachment of the animals on each others' courses, the holes being so numerous, and the interstices of the wood consequently so very thin, that, without the defence afforded by these tubes, their passages would break into each other.

The hemispherical valves at the head of the animals are surrounded by a white gelatinous substance, which they discharge at pleasure, and which possesses a solvent power over the wood, and lessens the friction, while making their volutions, or perhaps semivolutions, cutting or scooping away the wood thus partly decomposed. This aliment undergoing a preparation, forms a secretion which becomes consolidated, and composes the tube as the animal advances. If these valves, which are similar to each other, and resemble exactly the cutting part of a round-nosed auger, make complete volutions, one valve only can be effective, which must be extended before the other. From this circumstance, and from their similarity, it appears probable that semivolutions take place, both valves being then effective by their extension alternately; by which the animal would not be required to turn round, which, from its apparent deficiency in muscular strength, it is probably incapable of doing, without being twisted up. I have seen several of those animals, after separating wood which contained them, drawn up in the manner that a leech will contract itself, by which means they completely filled and pressed hard against the sides of the tube, which greatly facilitated their forcing forward in the performance of their labour. The termination of their courses is always spherically concave.

The supposition that the destruction of the wood is chiefly by actual mechanical action is agreeable to the opinion of Sir Everard Home, in his remarks on this animal, in the *Philosophical Transactions* for 1806, who appears to have mistaken the term of centre-bit for the auger-bit alluded to; the centre-bit always making the termination of the hole, when boring, abruptly truncate, and the auger-bit hemispherical.

There may be observed, by a careful examination, on the exterior surface of wood which contains these animals, small lumps of a gelatinous substance, which I suppose to be the young of the animal; and when taken off there may frequently be seen the commencement of a small hole in the wood, having the appearance of those made by the animal in question at their entrance.

Turton mentions tubes protruding from a quarter of an inch to an inch and a half beyond the surface of the wood, but does not assign any reason for such appearance. Many opportunities have been afforded me of breaking off parts

from such tubes, some of which have been as much as six or seven inches in length, but very different in form, tapering to the size spoken of at the entrance of the animal, with a small aperture in the end, white, and semitransparent; others with their ends much larger, and open, with a laminated interior; some of them forming rings, six or seven in number, with one side projecting a third across the tube, which may have been occasioned by some obstruction the animal may have met with, and may not be a general character of the tubes. Others, of the same size at their ends, had the inside quite plain, and perfectly smooth. Those tubes with large apertures may probably have had their ends broken off by some accident, as the outer end of the tube, when perfect, is almost invariably found to be very small.

The protrusion of the tubes is occasioned by the wood they were lodged in having been rotten and washed away, or destroyed, by the ravages of a most destructive marine insect, which will be mentioned hereafter.

A short time since, I observed on board a merchant ship, in a piece of round African timber, which was ten inches through, and seven feet long, about thirty holes in its ends, of an unusual size, some of which were an inch in diameter, bored, as I suppose, by the *Teredogigas*. The captain informed me that this piece of wood had been used as a fender, for the protection of the side of his ship, while he was taking in his cargo of timber on the coast of Africa. After having several pieces cut off transversely, the remainder, which was about five feet long, was split to pieces, to ascertain the length and structure of the tubes, and also the probability of finding some hemispherical valves of a remarkable size. No valves were, however, found; many of the holes ran from end to end, and others, entering at the exterior surface, then took the direction of the fibre, and passed out at the end. All the holes were lined with the tubes, which were in a perfect state.

The *Pholas* is another remarkable genus of these destructive animals. The species *Striata* is more generally found in the bottoms of ships than others of the same genus. It will answer the following description:—"Shell white, oblong, or conic, rounded and obtuse at the larger end, which is rough with raised curved lines, and nearly closed, the frontal margin folding back, and forming a smooth surface around it; the narrower end gaping and striate both longitudinally and transversely; hinge with a somewhat heart-shaped plate at the back, the point of which is upwards, beneath which is a long narrow one connecting the valves; in front is a plate on each side the opening, and a third narrow one down the middle; teeth long, slender, curved; length half an inch; breadth nearly an inch."

This animal is not only found buried in timber under water, but also in stones, clay, &c. This species emits a viscous humour, which partially decomposes the material they inhabit, by its solvent properties.

The animal bodily advances and recedes a short distance, sometimes turning half round, which action assists in the enlargement of the cavity. The wood which is taken away by the animal is thrown out through the posterior compartment of the trunk in small pieces retaining the general appearance of the wood.

It is said the presence of the atmospheric air is necessary in forming the solvent, the oxygen of which, combining with the secretion, forms phosphorous acid, which effects a decomposition of the material the animal inhabits. This, however, appears doubtful, as in many instances specimens of the *Pholas* are in my possession which have been cut out of the keels of ships, where atmospheric air can have been but very rarely present.

They make their attack in a similar manner to the *Teredo*, by burying when young; the holes at their first entrance being not more than a quarter of an

inch in diameter; the animal increasing in growth as it advances, and when at maturity ceasing to bore, as it does not obtain its sustenance from the wood, as the *Teredo*, but from the inhabitants of the water. The holes which contain them are little larger than themselves, and perfectly conical, which prevents their being extracted whole, except by cutting away the substance in which they are buried, the depth of which is seldom more than will enable them to protrude their proboscis to the surface nearest the water.

The *Lepisma* is an insect (before alluded to) which, though small, is extremely destructive.

It preys on wood, and is known to seize upon it immediately after being immersed in sea-water. The bottoms of ships, where the copper is rubbed off, are frequently attacked by great numbers of them; in some cases they collect so closely together, that the space of two inches square serves two or three hundred to prey on.

These insects are so numerous in the East Indies as to render it necessary to get unprotected boats taken out of the water, when not in use, in consequence of the bottoms having been known to be eaten through in so short a time as three or four weeks.

The copper sheets which are commonly used for the protection of the bottoms of ships from the attacks of these animals are known to vary greatly in point of durability, either from a difference in their purity, or from other causes not very easily to be accounted for.

Not only does the copper on one ship's bottom often last good more than twice as long as the copper on another ship's bottom, but even some of the sheets on the same bottom are frequently found to be decayed so as to have holes through them, while others adjoining, or very near them, are in a good state. The causes of the very great difference frequently observable in the sheets of copper on the same ship may be, that the impurity of some sheets by a mixture of some other metal with the copper, by galvanic action, may be the means of their being destroyed, while other sheets in the vicinity are thereby preserved, agreeably to the principle on which Sir Humphry Davy recommended the use of iron or zinc plates to be secured on ships' bottoms as a protection of the copper.

The circumstance of so great a difference in this article has called the attention of most that are concerned in the manufacturing of it; by which means it may be expected that copper sheets may be produced which shall have more uniformity and durability than any that have been hitherto in use.

Copper being sometimes found to have holes in it in so short a time as two years, while the principal part of the copper on the bottom may generally last at least seven or eight years, if the ship be not brought into dock till the expiration of that period from any other cause, so considerable a time will have elapsed, that the plank of the bottom, where the copper was decayed, will have been exposed to the attacks of these destructive animals.

Planks on the bottom of a ship where the copper has been either decayed or worn through, have been found to have been penetrated very nearly through by the *Teredo navalis*. I have known an instance in which it was found necessary to shift several planks, on account of their being nearly eaten through a few inches below the water-line. This suggests the propriety of having the timbers of the frame of all ships filled in and caulked, as is the custom in his Majesty's ships; and if the fillings were carried up as high as the load draught of water, it would render the danger arising from the attacks of these animals much less.

It may probably be considered advantageous to cover the bottom of ships more generally with felt instead of tarred paper, which is commonly used, but

is objectionable in consequence of its' susceptibility of absorbing water; and when in this state it soon becomes rotten; and where it is exposed to the action of the fluid from the copper being off, it is very soon washed away, leaving the plank uncovered. The advantage of felt on ships' bottoms consists in its' being impervious to water, and, by its' adhesiveness, stopping many of the casual leaks; and from its' being also impervious to the attacks of the marine animals which are destructive to ships' bottoms.

If the bottoms of ships were sheathed with board over the felt, and caulked, it would be an additional security, and effect a better contact with the felt and the plank. In the event of copper being broken or rubbed off by any accident, the sheathing would protect the felt from being torn, and the plank of the bottom by this means would be guarded.

The expense, however, of sheathing is a great objection to it. The least objectionable method of giving ships' bottoms full protection from the danger caused by these marine depredators, is probably the filling in and caulking between the timbers of the frame as high as the load-water section.

CUSTOMS OF THE MOSQUITO INDIANS.

THE Mosquito Indians, although inhabiting a tract of country not very distant from our principal West India possessions, are as little known, even in the present day, as some of the barbarous tribes of the Pacific Ocean. Near Cape Gracias à Dios, the north-east elbow of Guatemala, is a small town named Bullen-Town. We had been told a good deal about the singular customs of these people at Cape Gracias à Dios, and hearing that a funeral was to be celebrated at Bullen-Town, we determined on being present at the ceremony. To find animals was no great difficulty, but to provide them with saddles puzzled some of our party exceedingly; and as the possibility of obtaining any thing in the shape of English manufacture was out of the question, sacks, cloths, and cloaks, with plenty of lashings, were put in requisition; and we sallied forth in quest of adventure, on the morning of a broiling hot day. The distance which we had to travel was rather more than two miles, in a direct line; but the tedious course we were obliged to take, sometimes through savannas, and at others wandering through groups of cocoa-nut and palm trees exposed to a tropical sun, seemed to render it more than double. It was, moreover, no easy matter to get through these savannas. The weight of the horses was too much for their soft swampy nature, and they sunk in them up to their middle, much to our annoyance. One of them, desirous of cooling himself in the water on the surface, after toiling half through one of these marshes, was vicious enough to lay himself down in it, to the utter destruction of the beautifully white trowsers of his rider, who was left to shift for himself. This, of course, occasioned much merriment, although, had any of us deviated from the usual track, it is more than likely that we should not have got out again.

A ride of about two hours brought us to Bullen-Town, and we immediately proceeded to the dwelling of the deceased Indian. The huts of these people are constructed of large wooden poles driven firmly into the ground, in a circular form, about eight feet apart from each other, the diameter of the circle being about thirty feet. In the centre, another pole, considerably larger and longer than the others, is fixed in the ground; from the upper end of which, rafters rest on the tops of the others. Thus a conical roof is formed, which, being thatched with palmetto leaves reaching to within five feet of the ground, affords a tolerable degree of shelter. There are two kinds of palmetto trees, which are distinguished by the names of the Royal and the Humble; and both are abundant hereabouts. The former grows to a considerable size, and is particularly durable when exposed to water. It is the leaf of the latter that is used for thatching. The sides of the hut being left open, keeps them cool in the hottest weather. In the middle of the hut, the corpse of a female Indian, apparently about fifty years of age, was lying in a hammock fastened to two opposite poles, and covered with a toonow. The toonow is a covering consisting solely of the bark of a tree, and is much used by the Mosquito Indians. The process of making it is by stripping the bark off the tree in an entire state, and placing it in a stream of running water, where it is allowed to remain about a week, in order to soften it. Children are then employed to beat it in the water with heavy flat pieces of wood, till it is reduced in thickness to about the consistency of a fine blanket. It is generally about six feet long, and four broad. It forms a very warm covering, is very white, and as soft as a fine sponge.

The relations of the deceased were assembled in the hut, and consisted of a large group of males and females. The loss of their relative seemed to lie easily on the minds of the former; some of whom were lolling carelessly in hammocks suspended in the hut, while others were standing round her remains, chattering together with apparent indifference. Observing us enter the hut, one of them immediately accosted us with a demand for some rum; to which we considered it politic to assent. A bottle having been promptly procured by an Indian, at our expense, they quickly divided it among themselves. Far different from that of their male companions was the occupation of the female relatives of the deceased. These women, amounting to about twenty-two in number, seemed by their lamentations to be conscious of their loss; sometimes throwing themselves on the ground with violence, then tearing their hair and inflicting wounds on their persons with sharp stones, or with their nails, and even endeavouring to strangle themselves with small cords which they had in their hands: this feat they were as often prevented from effecting by the interference of the men. All the time they were thus employed, the hut was filled with their cries for the

deceased, poured forth in a kind of whining tone of voice, that we found afterwards was their funeral song. This melancholy ditty was composed of various questions to the deceased, consisting of such as, Why will you not speak to us? What have we done to offend you? Are you hungry? Are you thirsty? What is it you want? and a variety of others of the same nature.

An hour, or more, was passed in this manner; the women chanting the death-song, and the men engaged in drinking, by which time the latter had become pretty well prepared, by the effects of the rum, to finish the business for which they had assembled. However, to work they went in earnest, and brought a pitpan, about twelve or fourteen feet long, into the hut, which they proceeded to cut into two parts at the middle, one of which was to form the under, and the other the upper part of the coffin. A pitpan is a kind of canoe used by the natives, but differs from it in being square at both ends. It is also flat-bottomed, and is used in very shoal water. In order to prevent any water from lodging in that which was to form the lower half of the coffin, a hole was made through the middle of it, whilst some were busily employed in painting curious imitations of men and animals on the other half with white, red, and black paint, which they procure from berries. This appeared to form an important part of the ceremony, for much pains was taken in forming the figures, which being done, the corpse was taken from the hammock, carefully rolled up in the toonow, and placed in the pitpan.

The whole group now proceeded with the corpse to the place of interment, distant about a mile across a savanna. On their way thither, the women continued their dismal cries, and repeatedly suffered themselves to be led away by their feelings to commit the most extravagant actions. Sometimes they would endeavour to strangle themselves with the cords which they carried, and after repeatedly daubing their faces and persons with the paint from the coffin, would redouble their cries and lamentations. The place of interment which is used by the natives of Bullen-Town is a small spot of dry ground prettily ornamented with cocoa-nut trees. Several graves had the appearance of being recently made, and the bones of quadrupeds were seen lying about in various directions, which had been well bleached by the sun. The party having arrived here, the coffin was placed on the ground, while a grave was dug, and shortly completed, to a depth of about three feet below the surface. This was followed by a demand for more rum, when, to our great astonishment, all mourning suddenly ceased, and the females partook of it with as much glee and satisfaction as the men. The coffin was now placed in the grave, and covered over, amid the united cries of the whole party, for even the men joined in the lament, and the women shouted the funeral song even more lustily than before.

These people follow the curious practice common to Indians, of burying various articles with the corpse, or leaving them on the grave. They generally consist of cooking utensils, fishing and hunting implements, a quantity of clothes, besides some food; and they bring a supply of the latter to the grave twice a-day for a week or fortnight after the corpse is interred. They have even been known to continue this custom for several months afterwards. We inquired of one of the Indians who spoke English, why they did so in the present instance; and his reply afforded a good picture of their view of these matters. He told us very earnestly, that the deceased had to travel a long journey, and required the various articles for her use while performing it. He observed to us, that the paddles which we had seen placed in the coffin were to enable her to cross all the rivers she would meet with. The thought struck us immediately, and we asked him how she could cross a river when the bottom of the pitpan had a hole in it. He was quite puzzled at first for an answer, but turning suddenly, replied, 'Oh! Sar, she make good all that.' Our conversation was here interrupted by one of the Indians, who made us understand that he wished to borrow one of our horses, which was granted him immediately. The Indian rode off with it into the savanna, and shortly returned with another, the property of the deceased. Our astonishment was not a little, at seeing one of the Indians approach the horse, and strike the animal several severe blows with a large heavy bludgeon, which had the effect of laying the poor creature prostrate on the ground, to all appearances quite dead. This accounted at once for the numerous bones which were strewed about the place, and we found that they were no other than those of animals which had been slaughtered on similar occasions to the present.

Every one now busied himself in forming a small thatched shed over the grave of the deceased, for the purpose, as we were informed, of sheltering her from the sun and rain while she slept, previous to departing on her journey. Things were going on thus, when the horse which had been knocked down, having recovered a little from the blows he had received, got upon his legs, and was tottering away from his brutal masters, when he was brought back by one of the Indians, and being re-conducted to the grave of his mistress, received his *coup de grace*. This appeared to be the signal for return, and the shed being completed, the whole party proceeded to the habitation from whence they had set out. Here the work of destruction was commenced in earnest. In a short time, the hut was in flames, the grounds were trampled over, the plantations were destroyed, and all was confusion and ruin, where, a few hours before, vegetation had flourished, and order and tranquillity had prevailed!

While this work of destruction was going forward, a sudden cry of Puta! Puta! arrested the attention of the whole party, and

seemed to strike terror into the breasts of every one. All of one accord assembled together in a moment, the eyes of the whole party being directed to some high grass close by, above which the head of a large snake was seen obtruded with 'terrific aspect.' The Indian who pointed it out, and who was the first that gave the alarm, made signs to us to be still, and not to utter a word. The other Indians knew well what his intentions were, when he scampered off as fast as his legs could carry him, and returned in a very short time with his bow and arrow. Not a word had been spoken during his absence, and all watched him with silent, breathless attention, as he took deliberate aim at the head of the creature, and in another instant the arrow struck him in the neck. The snake being thus disabled, was shortly despatched with a pole, amidst the cries and execrations of the Indians. He was one of the Tomegass kind, familiarly called by the natives Tommy Goff, which are the most venomous, their bite producing death in about a quarter of an hour: but they seldom infest buildings. This fellow was eight feet two inches long, and eight inches in circumference. We were very anxious to preserve him in spirits, but could not obtain a vessel large enough to hold him conveniently.

The destruction of the house and plantations of the deceased Indian woman was the conclusion of the ceremonies we had witnessed, but the song of mourning is chanted by her female relatives at various times for several months afterwards. The natives have a peculiar veneration for these ebullitions of feeling, and on no account do they allow them to be interfered with, or endeavour to repress them. It happened a few days after this funeral had taken place, that we were in one of their huts. On a sudden, a voice over our heads commenced the same doleful notes that we had heard before. We looked round in wonder for the reason, while the noise continued, till at length an old woman in the hut told us that it was the daughter of the deceased Indian mourning the loss of her mother. 'Sorry-for-poor,' she called her, as she pointed to the crickery, or bed-place, in a part of the hut near the roof where she lay, and told us with much earnestness not to notice her, for she was 'a sorry woman.' At this moment an Indian entered the hut, carrying some dead monkeys which he had just shot. These animals form a favourite food of the Mosquito Indians. It appeared that the man had shot two little ones; and the affection of the mother for them was so strong, that she would not leave them, but suffered herself to be taken and killed, as she clung to her offspring and bewailed their death.

DIRECTIONS FOR COLLECTING AND PRESERVING PLANTS IN
FOREIGN COUNTRIES.*On Preserving Plants for a Hortus Siccus.*

THIS is a much simpler process than is generally imagined by those unpractised in it; and many travellers have been deterred from collecting specimens, by the time and trouble requisite for securing them in the way that has been generally recommended.

The main circumstances to be attended to are, to preserve specimens of plants in such a manner that the moisture may be quickly absorbed, the colours as much as possible preserved, and such a degree of pressure given to them, as that they may not curl up in the act of drying.

For this purpose, let a quantity of sheets of separate paper be obtained, of a folio size, and of an absorbent nature. Common cartridge or grey paper is perhaps the best. Brown paper does well enough for coarse plants, and blotting-paper for the more delicate kinds. Two boards should be provided, one for the top and the other for the bottom of the mass of papers. For pressure at home, or when stationary for any length of time in a given spot, nothing serves better as a press than a weight of any kind, a large stone, a great book, &c. put upon the topmost board; and the great advantage in this is, that the weight follows the shrinking of the plants beneath. Whilst travelling, nothing is so convenient as three leathern straps with buckles—two to bind the boards transversely, and one longitudinally. It will be farther desirable to have a number of pieces of pasteboard, of the same size as the paper, to separate different portions of the collection, either such as are in a different state of dryness, or such as, by their hard or stout woody nature, might otherwise press upon more delicate ones that are in papers adjoining, and be the means of injuring them.

Thus provided, gather your specimens: if the plants be small, root and stem; if large, cut off portions of the branches, of a foot or a foot and a half long, selecting always such as are in flower, and others in a more or less advanced state of fruit. Place them side by side, but never one upon another, on the same sheet, and lay upon them one, two, or three sheets, according to the thickness of your paper or of your plants, and so on, layer above layer, of paper and specimens, subjecting them then to pressure. As soon as you find that the paper has absorbed a considerable portion of the moisture, (which will be according to the more or less succulent nature of the plants, and the heat and dryness of the season or climate,) remove the specimens into fresh papers; and let the old papers be dried for use again, either in the open air and sun, or in a heated room, or before the fire.

As to the spreading out of the leaves and flowers with small weights, penny-pieces, &c. it is quite needless. The leaves and

flowers are best displayed by nature in the state in which you gather them ; and they will require little or no assistance with the hand, when laid out upon papers, to appear to the best advantage ; especially if put in carefully on being fresh gathered. If the specimens cannot be laid down immediately upon being collected, they should be preserved in a *tin box*, where they will keep fresh for a day or two, if the atmosphere be not very much heated.

Some very succulent plants, such *CACTIA*, *SEMPERVIVA*, *SEDA*, *ORCHIDEOUS PLANTS*, &c., some plants with very fine but rigid leaves, such as the *FIR* tribe and the *HEATHS*, and some with compound pinnated leaves, require to have the specimens plunged into boiling water for a few seconds before they are pressed ; this greatly facilitates the operation, by destroying the vegetative principle, and preventing the leaves of many from falling off in the act of drying. In this case, the superabundant moisture should be absorbed by a cloth, or by applying, temporarily, pieces of blotting-paper.

In most parts of Europe, and in all countries not oppressively hot, it is a good plan, and saves much paper, to lay out the specimens on their respective sheets, on the floor of a chamber during the night, or for five or six hours during the day, putting them up again, and submitting them to pressure, as before, on the same papers. By this means, much humidity both from the plants and the paper is absorbed by the atmosphere, and the colour is better preserved. If, however, the climate be hot, a much shorter time will suffice, or the leaves will shrivel.

When sufficiently dry*, which, with the greater number of plants, and in warm climates, will take place in the course of a few days, (and with two, or at most four shiftings of the specimens,) they should be placed between dry papers, one sheet or folio between each layer of plants ; and they are then ready for transportation, either packed up in boxes, or well secured as a parcel, covered with oil-cloth. A great many specimens may thus be sent in a very small compass.

PALMS having their fructification and their leaves very large, are with difficulty subjected to pressure. A few of their flowers should be pressed ; and the cluster of fruit and a leaf may be simply dried in the air, and afterwards packed in boxes, for transportation.

FERNS and *MOSSES*, and the larger proportion of *CRYPTOGAMIC PLANTS*, may be dried in the common way : such *MOSSES* as grow in tufts being separated by the hand.

SEA-WEEDS should be immersed for some hours in fresh water before they are dried ; and common blotting-paper is the best for absorbing the moisture from these plants.

* The being sufficiently dry may be ascertained by the stiffness of the stems and leaves, and by the specimens not shrinking or curling on being removed.

If the **FRUITS** of plants are of a small size, so as to be preserved in a Herbarium, they should be gathered with the leaves and branches, as are the flowers. If of a large size, they should be kept separate. **DRY FRUITS** demand no care, except those which split open by means of their valves. These require to be tied round with a little packthread.

PULPY FRUITS are only to be preserved in spirits of some kind, and they should have a number attached to them, referring to the flowering specimens.

Seeds and Plants for Cultivation.

The best way to introduce plants from abroad into our country is by **Seeds**. These should be gathered when perfectly ripe; and if a number of each kind be folded in a separate piece of paper and kept dry in a box, they in general reach this country in a good state for vegetation.

OILY SEEDS, such as those of the **TEA**, **COFFEE**, most kinds of **ACORNS**, &c. soon lose their germinative property. For such it is necessary to provide a box, and a quantity of loose sandy or peat mould. Put into the box a layer of this earth, and then a layer of seeds, and so on alternately till the box be full.

BULBS of all kinds, and many **ROOTS**, not actually in a state of vegetation, cuttings of **SUCCULENT PLANTS**, **ALOE**S, **CACTI**, and many other thick-leaved **PARASITIC ORCHIDEOUS PLANTS**, called **AIR PLANTS**, may be put into a box with dry sand, peat, or sawdust; and these (as should the **Seeds** and **Bulbs**) must be kept free from damp.

Plants that it is desirable to remove with the **ROOT**, should be carefully placed together, but not too crowded, with common soil, in wooden boxes, the top of which is formed with too sloping sides like the roof of a house; one of these constitutes a lid that can be opened or shut at pleasure, so as to admit the air and water, and especially so as to exclude the spray of the sea, which would be highly prejudicial. The earth must be kept moderately moist, and the boxes always placed either on an exposed part of the deck of the vessel, or slung from the *tops*. In the latter situation they are liable to the least injury; only the person who has the charge of them must not forget to supply them with fresh water when they may require it.

With the plants and seeds, whether in a living or dry state, if they are not well known to naturalists, there should be pieces of paper, on which are to be indicated the uses of the kind, as far as they have been ascertained, the particular country where it is gathered, the soil, the size, the elevation at which it grows above the level of the sea, and the name it is in general known by.

As soon as a sufficient number of plants are collected, no time should be lost in transporting them to their place of destination;

since the dried specimens in particular, and the seeds, are liable to the attack of insects in warm climates; and the captain of the vessel should be particularly requested to keep them in a dry and airy part of his vessel.

Specimens of the Woods are also highly desirable; of the Gums, Resins, and the various products of the trees, if employed in the arts, or in medicine; and it may here finally be remarked, that those plants which are employed as *useful* in any way whatever by the natives, are what it is of most importance to possess in our gardens: nevertheless, the more common kinds, the very weeds of foreign countries, the Grasses, the Mosses, the Sea-weeds, and Lichens, will prove extremely valuable to a scientific Botanist.

WILLIAM JACKSON HOOKER, LL.D.

Regius Professor of Botany in the University of Glasgow.

INSTRUCTIONS FOR THE COLLECTION OF GEOLOGICAL SPECIMENS.

1. THE GEOLOGICAL SOCIETY begs to impress upon the minds of all collectors, that the chief objects of their research should be specimens of all those rocks, marls, or clays, which contain *shells, plants, or any sort of petrification*.

2. The petrifications should, if possible, be kept united with portions of the rock, sand, or clay, in which they are found; it being more desirable that the mass should be examined carefully when brought to England, than that any separation of the shells should be attempted at the time of their collection. This injunction, however, does not apply to those cases in which the shells fall readily from their surrounding matrix; but, in this event, great care must be taken of the petrifications, by rolling them in paper, or some soft material.

3. If several varieties of stone are seen in the same cliff or quarry, and particularly if they contain any petrifications, specimens of each should be taken, and numbered according to the order of their succession; marking the *uppermost* No. 1, and thence descending with Nos. 2, 3, &c., making as correct an estimate as time will permit, of the thickness of the beds. None of these specimens need be more than three inches square, and one and a half or two thick.

4. If the rocks are stratified, that is, divided into beds, state whether they are horizontal, inclined, or twisted. If inclined, observe pretty nearly at what angle, and to what point of the compass they dip; if twisted, a sketch, however slight, is desirable.—N.B. The true dip can seldom be ascertained without examining the beds on more sides than one.

5. One kind of rock is occasionally seen to cross and cut through the beds of another. In such a case, observe whether the beds are in the same plane on each side of the intruding rock; if not, mark the extent of the disturbance, and also, if there be any difference in the nature of the stone of which the beds are composed, at those points where they touch the intruding rock. Take specimens of the junction, and make a sketch of it.

6. Where there are wells, get a list of the beds sunk through in digging them; specifying the thickness of each stratum in its order, from the surface downwards.

7. In volcanic districts, procure a list of the volcanoes now or recently in action, and of those which are extinct; stating their position, their distance from the sea or any great lake; the extent, nature, and, if possible, the age of particular streams of lava, or the relative age of different streams: also, whether the lava currents conform to the valleys, or are seen at different heights above the present rivers; and also if any gravel beds be discoverable beneath the streams of lava.

8. Note the names of all places known to contain coal, bitumen, salt, alabaster, metallic ores, or any valuable minerals, specifying their extent, and the nature of the rocks in which they occur; but *do not* bring away large quantities of iron ore, spar, salt, &c.

9. In cases of coal-pits, specimens of the coal itself, and of the beds passed through to obtain it, (especially when plants have been found,) will be valuable. State whether limestone, iron ore, or springs of bitumen, are found near the coal; and if the limestone contains shells, collect *abundance* of them.

10. Make particular inquiries, whether in digging gravel-pits, or beds of surface clay, mud, and sand, the workmen are in the habit of finding any bones of quadrupeds; and obtain as many of them as possible, selecting particularly teeth and vertebræ.

11. Search also for bones in cracks of rocks, and in caverns. In the latter, the lowest pits or hollows are most likely to contain bones; and if the solid rock be covered with a crust of spar or marl, break through it, and dig out any bones, horns, or pebbles from beneath.

12. Observe if the surface of the country be strewed over with large blocks of stone; remark whether these blocks are angular or rounded, and whether they are of the same or a different nature from the stratum on which they are laid. If the latter, endeavour to trace them to their native bed. Note the different heights at which gravel is found, and whether or nor it is composed of the same rocks as the adjoining country.

13. Nautical collectors are requested to separate and preserve any shells or corals which may be brought up, either with *the lead* or *the anchor*; noting the depth and the locality.

14. On coasts where there is a considerable ebb-tide, and where the shore consists of rocks or clay containing fossils, some of the best of these petrifications may be looked for, by breaking up with a pick-axe the shelving beds exposed at low water.

15. In making sections or memorandums, distinguish well upon the coast, between masses which have simply slipped and fallen away, and the real cliff itself.

16. When driftwood is met with at sea, collect pieces of it: note the longitude and latitude, the distance from the nearest land, and the direction of the current by which it has been borne. Examine well the state of the floating mass, and see whether any roots or leaves be attached to it.

17. Every specimen should be labelled on the spot, or as soon after collection as possible, and then rolled in strong paper, or any soft material, to protect its edges.

18. A heavy hammer to break off the specimens from the rock, and a smaller one to trim them into shape, are indispensable. If the larger hammer have a pick at one end, it will be found very useful in digging up and flaking off those thin shaly beds which usually contain the best preserved shells, &c. A chisel or two are also desirable.

19. The recommendation expressed in the instruction, No. 1, may be repeated:—That it should be a general maxim with geological collectors, to direct their principal attention to the procuring of *fossil organic remains, both*

animal and vegetable. These are always of value when brought from distant countries, especially when their localities are carefully marked; but when the rocks contain no petrifications, very small specimens are sufficient.

. All boxes to be addressed to W. Lonsdale, Esq., Curator, Geological Society, Somerset House, London.

Apartments of the Geological Society,
Somerset House, London.

CUSTOMS' DUTIES ACT.

THE following are the principal resolutions brought forward by Mr. P. Thompson, and agreed to by the House of Commons:—

That seed corn may be admitted to be imported into Ireland without payment of duty, under certain regulations and restrictions.

That the additional duty of threepence halfpenny upon every square yard of printed manufactures of linen and cotton when imported, shall cease and determine.

That the drawbacks of the duties of customs now allowed on the exportation of goods from the United Kingdom (except those on wine, manufactures of silk, tobacco, and manufactured rice or paddy) shall cease and determine.

That no duty shall be payable on goods of woollen and linen mixed, the manufacture of the United Kingdom, exported to any port or place within the limits of the East India Company's charter.

That no duties shall be payable on the importation into any of the British possessions in America, of drugs, gums, or resins, dyewood, cabinet-makers' wood, hemp, flax, or tow.

That it is expedient to amend the laws relating to the customs, and also an act of the 59th year of his late Majesty, for carrying into effect a convention of commerce between his Majesty and the United States of America, and a treaty with the Prince Regent of Portugal.

With regard to holydays, it is enacted that no holyday shall be kept except Christmas-day and Good Friday, any day appointed for a general fast or a general thanksgiving, and the anniversaries of the birth-days of their Majesties and their successors.

A certificate of the due landing is not in future to be required for drawback on bounty goods from Guernsey or Jersey. Masters of vessels coming from Africa are to report how many natives of Africa they have taken on board in Africa, or, failing to do so, shall forfeit 100*l.* Masters or owners of vessels coming from Africa, are to give bond to maintain or send back such Africans as they bring from thence, and, refusing or neglecting to enter into such bond, to forfeit 200*l.* The requiring of a certificate of the entries inwards in the port of London is repealed.

The restrictions as to piece-goods are also repealed, and the value of such goods is to be ascertained in the same manner as that of other goods. The Commissioners of the Treasury are authorized to appoint additional ports for warehousing tobacco. Foreign goods, derelict and wreck, are in future to be deemed the produce of such country as the Commissioners of Customs shall determine: and if such goods do not sell for the amount of the duty, they are to pay an ad valorem duty; such goods, also, if entitled to an allowance for damage, to have it under the direction of the Commissioners of Customs. Goods found in a package or parcel landed by bill of sight, concealed with intent to deceive the officers of the Customs, to be forfeited, together with every thing else contained in such package or parcel. The restrictions on the tonnage of

ships importing wine is repealed. His Majesty is empowered to appoint ports and legal quays for the landing and unloading of goods, and to declare that they shall no longer be so.

An averment that an offence relating to the customs was committed within the limits of any port, to be sufficient without proof of such fact, unless the contrary is proved.

Persons making entry, inwards, of any goods, not being authorized duly so to do, to forfeit 100*l.* Boats used in fishing on the coast of Ireland are not required to have licenses.

Vessels and boats used in piloting or fishing to be painted black, within six months. Officers of Customs or Excise may, on probable cause, stop carts, wagons, &c. to search for goods; drivers refusing to stop, and to submit to examination, to forfeit 100*l.*; and penalties may be recovered in the Courts of King's Bench, Common Pleas, or Exchequer in Ireland.

Officers authorized by writ of assistance, and having a peace-officer, may search houses, shops, &c. for prohibited and uncustomed goods, and break open doors and packages to seize them. Persons resisting officers, or rescuing or destroying goods to prevent seizures, to forfeit 100*l.* Persons offering bribes to officers, to forfeit 200*l.* Vessels, boats, and goods, seized under any law of Customs, and ordered to be prosecuted, to be deemed to be condemned, unless the owner gives notice of his intention to claim.

Persons convicted, and not paying the penalty, may be committed until the penalty is paid. Persons employed for the prevention of smuggling are to be deemed duly employed; restricted goods are to be deemed run goods, for the purpose of proceeding for forfeiture. In the case of persons in gaol not appearing or pleading to an information, judgment may be entered by default.

Persons procuring others to assemble for the purpose of assisting in unshipping prohibited or uncustomed goods, to forfeit £100 for every person so procured.

Persons carrying or concealing tea or silk liable to forfeiture, to forfeit double the value, and to be liable to detention.

A married woman may be committed to prison for an offence under the Act, notwithstanding her coverture.

Declarations are substituted for oaths, where the latter are required by the Registry Acts; using forged documents, to incur the penalty of 200*l.*: provisions of the Reciprocity Acts are to extend to all powers with whom similar treaties are made, such powers to be declared by his Majesty in Council.

Extract from the Schedule.

	Proposed duty.		Present duty.	
Bark, for tanners or dyers' use (all sorts).....	£0	Os. 8	.. 0	0 0
—, not otherwise enumerated or described, being for the use of dyers or tanners, and for no other use or purpose whatever, for every 100 <i>l.</i> of the value	0	0 0	.. 20	0 0
Berries, yellow, for dyers' use	0	0 0	.. 0	14 0
—, for dyers' use, not enumerated	0	0 0	.. 0	12 0
Hair, cow, ox, &c.	0	0 0	.. 0	2 6
Hemp, rough and undressed, or any other vegetable substance of the nature and quality of undressed hemp, and applicable to the same purposes (all) cwt.	0	0 1	.. 0	4 8
Hempseed	0	1 0	.. 2	0 0
Hides, viz. Muscovy or Russia, tanned, coloured, shaven, &c.	0	1 0	.. 0	5 0
Oakum	0	0 1	.. 0	4 9

	Proposed duty.	Present duty.
Unwrought Steel, prepared in any British possession in Asia, Africa, or America ton	£0 1 0	.. 20 per cent.
Vermilion lb.	0 0 6	.. 0 1 0
Woad cwt.	0 1 0	.. 0 3 0
Wood, fit for ship-building, imported from any British possession within the limits of the East India Company's Charter—the load of 50 cubic feet	0 0 1	.. duty free.
—, imported from any other place within those limits the load	0 10 0	.. 1 10 0
Goods, Wares, and Merchandise, not being either in part or wholly manufactured, and not being enumerated or described, nor otherwise charged with duty, for every 100 <i>l.</i> of the value	5 0 0	.. 10 0 0

*The Reply of Mr. Douville to the anonymous English Writer in the Foreign Quarterly Review, on his Travels in South Africa.**

I KNEW, through my friends in London, of the critique in the Foreign Quarterly Review, before a single copy of it had appeared in France. They despised this diatribe; and, on reading it, I was impressed with a similar feeling. I had proposed to treat with silent contempt the gross statements it contained, and I should probably have persevered in this resolution, if *Le Temps*, a French journal, had not reprinted the principal points of this English article. In replying to it now, I yield to the wishes of my friends, and I hope that my answer may at once prove my deference to their council, and the respect which I entertain for those honourable and learned societies, both French and English, that have admitted me among them, and one of which has assigned to me the prize awarded to the most important geographical discoveries.

Doubtless, the reviewer who, a month ago, accused me of being nothing less than an impostor, would now gladly crush me. He is a bully who wishes for a squabble, and who, no doubt, would dislike to be directly contradicted, or told that he shewed a want of good faith. But the case is imperative on my part, and I shall speak plainly, although I may offend certain persons in so doing. Having therefore replied to the charges of the English critic republished in the French journal, I shall make some remarks on his bad faith.

I am first accused of not having explained my resources for the

* In two preceding numbers of the Nautical Magazine, we gave a sketch of the travels of Mr. Douville in Southern Africa, on his own authority. His work has since undergone a most severe criticism in the Foreign Quarterly Review, and the fact of Mr. Douville ever having performed the journey which he relates is contradicted in no measured terms. In this state of things we desisted in our extracts from his work, as we did not consider it our province to decide whether he had done so or not. Mr. Douville has replied to the article in question; and, having taken up his work the moment it reached this country, we consider it but justice to that gentleman to publish his reply. We have therefore translated it carefully, and without comment present it to our readers.—E*n.*

journey, whence proceeds a charge of exaggeration. I say in my narrative, (vol. iii. page 249, line 2,) that the hire of a negro is a beiramé, (about 1 franc 25 c.,) per day's march. Observe how the wickedness and malevolence of the critic leads him to reason from this. *The journey has occupied twenty-five months*, says he; *the traveller has therefore at least expended 375 thousand francs for his negroes. This sum, added to other expenses, is too great for a single individual to sacrifice: the journey therefore has not been performed.*

Although I certainly have been absent from Loanda during twenty-five months, it does not follow that I have travelled all that time. It has been necessary to halt frequently.

Let us, however, reckon with the figures of the reviewer; let us take the mean between 375 and 625 francs of daily expenses, which will give 495 francs (? 500 *trans.*) Then, not to stand upon reckoning every day's journey during twenty-five months, I shall briefly establish as a mean, that I have travelled during twelve months, or 365 days. (Certainly this is the longest time that can be taken for a journey of twenty-five months.) I shall thereby incur an expense of 180,675 fr. Add to this the presents made to the chiefs, and the expenditure for the caravan, and we shall have the sum that I have mentioned, 240,000 francs, as my real expenses, and not nearly a million, as the critic gives us to understand. Observe, also, that the pay of the negroes who die on the road is so much profit to the traveller; that provisions cost little; and, in fact, that merchandise increases in value in proportion to its distance from the coast, so that the quantity which would only pay for the work of one negro at Loanda, would pay for that of ten in the interior of Africa.

Notwithstanding this simple statement, the critic may continue, if he pleases, to wonder that the love of travelling, and the desire of contributing something towards geographical discovery, should have induced me to make so large a sacrifice; his astonishment may increase when he thinks that this passion has been able to determine me to expose my life to hourly danger. All this he is welcome to; and I only pity him for being unable to comprehend such generous sentiments. It is not new, I know, to find persons who imagine that they have done more for science, when they have laboured to detect some errors of detail in a mass of new facts, than those who have risked their lives in some grand and perilous discovery.

Let us proceed to the second crime laid to my charge.

The reviewer continues: *All who have read the narratives of travellers in Africa must be aware of the extreme difficulty of procuring provisions in an uncivilized country. But we never see that scarcity of provisions presents obstacles to the enterprise of Mr. Douville. The journey then is fabulous.*

Yes, Sir, provisions are scarce in Africa ; but scarce as they may be, I have nevertheless always been able to obtain sufficient for my purpose. I have said in my narrative : *The negro cultivates only beans and corn, but the manioc, indigenous to the country, flourishes every where in abundance.*

This abundance, bestowed by nature, furnishes an answer to what you complain of. And as you appear to be ignorant how I provided for my caravan people, read my narrative candidly, and your surprise will cease.

The negro who goes naked, and is a stranger to luxury, having the opportunity of obtaining salt, clothing, and spirits, avails himself of it, and gladly gives the European traveller his provisions, consisting of the flesh of elephants, hippopotami, hyenas, his beans, his maize, and his own beverage, in exchange for what he wants, and which he cannot obtain in any other way.

But let us come to *the third principal charge* against me, to prove that the journey has not been performed.

I am silent respecting the means by which I kept a crowd of negroes about me, and made them obey my orders.

Here again, according to you, is one of the proofs of the journey being fabulous. Really, I thought, whoever might read my narrative, that I should not have been reproached with this. Without entering into details, it appears to me that it might be supposed I was always able to oppose moral to physical force, to guard against difficulties, and to turn every thing to account. Such measures were indispensable, to enable me to execute my orders.

My negroes, divided into parties of ten each, commanded by a chief, formed companies of 50 men, and were under the direction of mulattoes, who received my orders through the medium of another principal one in my confidence. The roll of a drum, or the sound of a horn, collected the chiefs whenever I wanted them.

I will also add, that the negro law is particularly favourable to a European traveller. It does not allow a negro to enter the territory of a neighbouring chief, without incurring the penalty of slavery. Those who accompanied me owed their liberty to the protection which they afforded me. If I had died, they would have become the slaves of the chief in whose territory my death might have taken place; in defending me, they defended themselves; in taking care of the goods, they preserved the means of our subsistence. They would have been inevitably lost, had they lost me.

Let us pass on to the fourth principal charge.

I have got over in this manner the distance of 300 miles in 15 days, without reckoning stoppages; that is, about double the ordinary travelling of negro caravans.

You are surprised at this; you assert that it is impossible; and, you conclude from thence, that my journey is fictitious. Those

who are acquainted with the Portuguese possessions, will assure you of the contrary. I shall answer your assertion by facts.

Couriers depart every month from Loanda for the various provinces. That to Golungo Alto arrives there in four days and a half, having travelled in that time 240 miles.

On emergencies, the same distance is performed in a palanquin in seven days. M. José Ramos, receiver-general of imposts in the Portuguese possessions, with a dozen negroes, who relieved each other, performed this distance in six days, when the Dembo Gome Amuquiama revolted, and refused to pay tribute. (This is an established fact.)

I have frequently travelled sixty miles in a day. The negro always runs when he bears a palanquin; his ordinary pace being about a league and a half per hour.

Forbear wondering then at my forced marches; they are by no means extraordinary. Never compare a caravan well paid, well provided, and full of courage and strength, with one composed of ordinary negroes in want of every thing; and even these will travel twice as fast as you imagine they do.

Let us now pass to the most important charge of the critic, consisting of—*Errors in the dates, which do not always accord in the tables, the chart, and the book.*

This argument, which is advanced against me, operates rather in my favour. The writer of a romance, with his note-book at hand, would complete his work with precision; compiling it in his study, quite at his ease, he would write with all the care that he could bestow on it. I, on the contrary, depending on the allowance which the reader would make for me, never dreamt that the man could exist who would doubt the fact of my having performed a journey, which is proved to have been completed by a number of official documents; such as my arrival in Benguela, recorded in that place; my departure; the letters which the governor-general of Loanda addressed to me during the journey; my return to Loanda; my departure in the ship for Ambriz; my return to the coast, as proved by the ship that conveyed me to America. These, I think, are documents which cannot be refuted.

I have given the results of my observations to the world, and nothing more. Nothing has been arranged since my return. I have given my narrative as it was written in Africa, with no alteration whatever. In the bulletin of the Geographical Society of Paris, No. 109, for May, it may be seen, that, at the time of its publication, I had discovered some errors, which I published. An errata was even printed, but the bookseller neglected to give it, with a great many copies.

Frequently suffering from indisposition, errors in dates, such as those of which the reviewer makes a grand parade, were unavoidable. For instance, here is one: I state in the narrative, that I

arrived at Mucangama on the 28th, and in the table my arrival is dated the 26th; but the reviewer neglects to add my statement in the narrative, that from the 13th August I had been continually unwell. Is it surprising then that I should have mis-stated dates, when hardly recovered? I was obliged to preserve the memoranda I had made in the hour of sickness. In reality, it is of little importance my having stated that the journey from Couffona to Mucangama cost more time than it really did. And, after all, this enormous difference consists of two days! The critic would say nothing, and could say nothing, if I had not mentioned, that, during my stay at Mucangama, I had taught the negroes to make bellows and forges, better adapted to the blacksmith's fire than those which they used, and likewise my having shewn them how to make bullets of lead instead of iron. Really, if I had been there only a few hours, I should have been able to do all that without risking the charge of imposition.

A discrepancy is discovered between the dates of my arrival at Tandi a Voua and Yanvo. All this consists in the following error. I was wrong in stating in the book, that I remained eight days at Quiama, while my stay there was actually not more than three. In fact, after making allowance for these errors in dates, take the whole journey—does it wear the appearance of fiction?

The reproach of having dated my lunar observations on days too near to the new moon, demands an explanation.

When I remained any length of time in a place, I entered my notes only every five or six days. I made my observations, and calculated them, on the same day; but in entering them into my journal, I have wrongly dated them as made on the day in which I copied them.

Lastly, the reviewer wonders at my saying that a river runs slowly with a descent of seven toises in a league. I did not follow the course of the rivers, but, by meeting with them in one place, and again in another, the two observations which I made furnished me with the means of ascertaining the strength of the current, without enabling me to say whether any cataracts or circuitous winding might not alter their course in places which I did not see.

Let us pass now to the proofs of bad faith on the part of the reviewer.

You a reviewer, whose first care should be that of impartiality, you actually fill forty-three pages with statements which, although they rest on doubtful authority, you assume as certain! I will take only the first ten pages of your *critique*—they are quite sufficient to expose you. Any reasonable person will find in them sufficient to satisfy him that the rest is of the same nature; really it would be throwing away my time to go into more.

The two first pages of your *critique* contain nothing but

calumny, to which I shall not answer. *Facts for the public, and nothing but facts.*

In the third page of your critique, you are not correct in the very first statement which you make. It is not true that the Portuguese carry on their trade in security to a distance of seven hundred miles from Loanda; I assert, that beyond the Portuguese possessions, commerce is exposed to continual interruption. Robbery and assassination are committed constantly. Here is a proof of what I say. It is officially known, that in 1827, the Portuguese were obliged to send soldiers to Haco, distant some leagues from their possessions, with a piece of cannon, to obtain reparation for a caravan which had been plundered. The negroes captured the piece of cannon, and prudently returned it afterwards. This is undeniable, and proves that you have not adhered to the truth.

It is notorious, that for more than ten years no mulatto has dared to penetrate the territory of King Ginga, and that they do not go to Cassange, to Bihe, to Tamba, or to Bailundo, but at the risk of their lives. The mulattoes who trade to these three last countries, send to their chiefs for a sufficient number of carriers to travel to their abode, where the chiefs overwhelm them with all sorts of vexations. The Portuguese negro cannot pass the Couanza, but with the utmost caution. Every day accounts are received of caravans being plundered on their route to Cassange: the merchants of Loanda can prove it, and I call on them to witness it.

You continue to deceive your readers at page 3, in saying, that I have given no reason to account for the favourable reception which I met with in the Portuguese possessions. This reason will be found at page 63, line 25, of my first volume. I stated, that it was in consequence of my promise to look for the gold mines which are believed to exist in that country.

In the same page you say, that I sent one hundred and sixty-four negroes to Cassange. That is wrong: I only sent one hundred and sixty. Such an error is not to be overlooked in a *critique* so severe as yours.

Again, you lead the reader into error at page 4. You make me say, that there are crocodiles and hippopotami in Lake Quilunda. I assert the contrary. Look at page 77, vol. i. of my narrative.

In the same page you say, it is known that hippopotami cannot be killed with musket balls. Now, it is notorious, at Loanda, that they are frequently killed in this manner. The governor of that place, when I was there, had the skin of one of these animals which had been killed in Lake Quilunda. He had preserved it, to send to Portugal. All these animals, whose skins are used in manufactures at Loanda, are killed by musket-balls.

In the same page you also leave in doubt my having been among the sorcerers of the country. This is a fact so well proved, and which appeared so extraordinary at the time, that the whole of

Loanda would maintain it on the authority of my negroes, who witnessed it.

It is false to say, that the calculation of the time occupied by the journey from Quilunda to Golungo is not correct. You know nothing of the extent of these provinces—and you would teach others! Again, you deceive your readers most egregiously. I maintain that I am quite right in saying, that I was thirty-six days in the province of Golungo, from the time that I first entered it. You only reckon the time that I staid in the principal place. Does a traveller only reckon the time which he stays in Paris, as all the time that he passes in France? I have said, therefore, that I was thirty-six days in the province, although I remained only a short time in the principal place.

At page 5, you say, *As we are questioning the performance of Mr. Douville's journey, it is right to speak of his immorality.*

And, as a proof of my immorality, you say that I accepted as mistresses the daughters of the negro chiefs that were offered to me. Really, from the word immorality, I expected a totally different charge. I leave you in possession of this silly accusation. Nobody would be a dupe to this pretended immorality with which you accuse me. It is the custom of the country.

At page 6, you say, *All the old writers agree in placing the country of the Dembos far to the east. They were right, because in every part of this distant country chiefs are continually found bearing this title.*

Because, then, there is a king of England, of Belgium, of Holland, and that we have one in France, is all this French territory?

The province of Dembos is where I have placed it. I call on all the Portuguese who have visited the Congo, to bear me out in this assertion.

At page 6, you say, that *Montecuculli saw thirty-two villages on the rocks of Pungo Andongo.*

I maintain it, and I call on all the Portuguese governors of the colony, besides every one else who has been there, to substantiate the truth of my assertion, that there are no villages on these rocks. I, moreover, call on the son of the unfortunate Sandoval, who I found a prisoner there, to witness it. This person lives in Lisbon; he received from his father a MS. description of the place, of which I have a copy written by Sandoval. He attests, also, the existence of volcanic remains there, and the impossibility of these rocks being inhabited.

In page 7, you falsely assert that *I have not mentioned the animals which I saw in that country.*

Look at line 1 and following, of page 232, in vol. iii. You will there find the names of all that I saw.

I have said, and I still maintain, that there is no cataract near Cambambi which may be heard at the distance of thirty miles. In

the place mentioned by Battel, I only found rocks interrupting the course of the river, which, in consequence, ran over them with a noise that can be heard scarcely at the distance of half a mile. But this rapid does not deserve to be considered as any thing wonderful.

There are many persons in Portugal, whom I have known in Loanda, and who will confirm the truth of my assertions. But there is sufficient here to satisfy the public that you have shown a bitterness against me in your review, for which I am at a loss to account, not only in making a great deal of the errors which I have, but in imputing to me others which I really have not, committed.

For my own part I will add, that my narrative is not without mistakes in dates and positions. I have never attempted to deny it, and have even said so before any one pointed them out. Look at No. 109, for the month of May, of the Geographical Society's bulletin. Can it be concluded there, that the journey is fictitious? Let an impartial man read my work, and judge for himself. I do not fear the result of his judgment.

If, on the contrary, no errors were found in it, the conclusion might be drawn which the reviewer really has done; for it might be asked, how is it possible that a man who has gone through so much, who has endured such privations, who has been surrounded by so many difficulties, and who has suffered so much from sickness, could have given so perfect an account. It would have been supposed, that, after returning, I had arranged the notes which I had brought home; that I had made them tally with each other; in fact, it might have been justly said, that the book was the production of the study, and not that of a traveller.

But I have not exposed myself to this censure, which I grant would have been just. I have performed the journey alone, without assistance from any government, without the counsel of any society; I have overcome every obstacle which the Portuguese threw in my way; I have surmounted every difficulty; on my return to Europe, I have digested and published, in the space of only four months, the narrative as I wrote it in Africa. I have not wished to compare my labours with those who had previously written on the Congo. That did not appear to be my business, although the neglect of it is now imputed to me as a crime, and attributed to ignorance. If I had done so, I should have been accused after another fashion; for in no way could I have escaped censure.

But answer, thou merciless reviewer, in thy turn, to the following fact:—

As soon as I had arrived in France, I hastened to lay my original observations before the secretary of the Institute, and requested of that learned body to report on my labours. The numerous occupa-

tious of these *savants* preventing them from doing so for some time, I requested that the observations and charts might be returned to me, in order to publish them.

Would an impostor have done this? Many persons who have seen my manuscripts, my observations, my charts, and all my original papers, can attest this.

Remember, that my ambition is satisfied in having opened the road for those who would follow me; and that before your critique had appeared, I had offered to the government to undertake another journey, and, although a private individual, to defray a *third part* of the expenses attending it.

Now, let it be decided if I have thought only of deceiving. My devotion, and the sacrifice of nearly my whole fortune in the first journey, add fresh proof of the disinterestedness, which I show in being willing to undertake a new expedition. Are they the marks of imposture? So much hatred and malignity, however, do not surprise me. I have ceased to wonder, long before now, at the consummate impertinence of some men; experience has taught me philosophy in this matter. If national jealousy has urged you to treat me with injustice, you are wrong. Your countrymen have already gathered so many laurels in Africa, and can yet find so many new sources of glory there, that you ought to be above showing any jealousy at my success. I know that it is not easy to escape envy. I had adopted a wild and unbeaten path. I expected not to have survived the enterprise; and I have left in it my patrimony and my health. I little imagined, after having escaped the poison of the negroes in Africa, that I should have had to endure the reproaches of calumny in Europe.

DOUVILLE,

Rue St. Guillaume, No. 20.

Plan of an Expedition to Africa—addressed to His Majesty Louis Philippe, Roi des Français. 15 Aug. 1832.

Sire,

ENGLAND is the first that has sent expeditions towards the centre of Africa to the northward of the equator; England is likewise the first to have derived advantages from her discoveries: her commerce is now ascending the course of the Niger, and spreading her name among the people who dwell on its banks.

If wealthy England takes possession of this part of Africa, France has also her rights: a Frenchman was the first who undertook to explore Southern Africa. Although only a private individual, I have been able, assisted only with my private fortune, and perseverance, to achieve there the first important discoveries.

Much of my fortune has been sacrificed in this expedition, but my zeal in the cause remains unshaken.

England must not snatch it away from France. Do we not possess the same qualifications, courage, and riches? There is national spirit among us, and I venture to hope it will second the enterprise which I now meditate.

My life, and the rest of my fortune, are devoted to the execution of a project which must contribute much to the honour of France.

No grand expedition of discovery has been more useful, and never was human exertion more disposed to benefit by it. The minds of people have always been attracted by discoveries. They immortalize the names of those sovereigns who order them; they spread the renown of the ministers who recommend them; and they transmit to posterity the names of those individuals, who, with their fortunes, their influence, and their wisdom, have achieved them.

The tide of oblivion has not effaced the names of those sovereigns who patronized the exertions of Marco Paulo, of Columbus, of Magellan, of Cook, and of Mungo Park; the names of their sovereigns descend to posterity, rendered sacred by the discoveries which they have promoted; and the commercial relations to which they have led, with people before unknown, are the most glorious titles which, as kings, they can have, to immortalize their reigns.

Far let it be from us to adopt the vulgar opinion, that it is impossible to traverse Africa. Weak and pusillanimous men only harbour such an opinion. The era of delusion has passed by, and we live in the age of reality. France, which ranks foremost among civilized nations, will have the honour of laying open the Southern regions of Africa. Already have I penetrated to the centre of this Continent. Soon shall I open a route from the west to the east, or from the west to the north-east. I want not zeal: my means second my determination, and will assist me in this fresh enterprise; but it is necessary that your Majesty should assist me with a part of what I yet want, and the public will complete the remainder.

To perform a journey, the project of which I lay before your Majesty, I now come forward with the sum of THIRTY THOUSAND FRANCS.

A sum of 100,000 francs will suffice for the purchase of presents to the negro chiefs, and the expenses of the caravan during three years, which the journey may be expected to occupy.

I presume to hope, that I shall not address your Majesty in vain. I have already sacrificed 240,000 francs in the performance of the journey of which I have just published the relation; and I offer 30,000 francs towards the completion of a project which will add lustre to your reign. I do not doubt that my devotion to this cause will meet with that encouragement which it deserves; and when your Majesty shall announce the sum which you will be pleased to dedicate to so noble an enterprise, if your ministers do not make up the deficiency, an appeal to the nation at large will, I am confident, be re-echoed in a manner that every thing noble and generous deserves.

A traveller who has been tried, and who offers for a second enterprise his personal labour and 30,000 francs, cannot fail to inspire your Majesty with those sentiments of national regard for such an enterprise by which he himself is actuated.

PROJECT OF THE JOURNEY.

I propose to land at Benguela, on the western coast of Africa, and there to form my caravan, forthwith to examine the mouths of the two rivers which I have been told fall into the sea between 14° and 18° S. latitude; then to penetrate into the interior, by traversing the countries of Cimbebas and Muzembo. Having attained the meridian of 24° or 25° E. I would proceed to the north-east, in order to examine the mountains of Lapata; to look for the lake of Maravi, to establish its existence or non-existence, and to travel round it, if I should find it; from thence to penetrate into Abyssinia, and to return to Europe by Egypt, or, at all events, by Mozambique, if I cannot effect my route to the north.

However dangerous may be this enterprise, however difficult it may appear, it does not dishearten me: the experience which I have gained in the manner of travelling in Africa, encourages me to hope for its favourable termination. The climate is no longer dangerous to me; I am acquainted with the mode of trading with the people; and my resolution remains unshaken, when once adopted. Such are my chances of success. If the property which I sacrifice in the enterprise be considered, as well as the care which I shall take to be attended by two zealous companions to assist me in my operations, and to complete them properly in case of my death, every possible guarantee will, I think, be afforded, that can be expected of me.

I am, with profound respect,
Your Majesty's most humble,
Most obedient, and most devoted servant,
J. B. DOUVILLE.

NAUTICAL MISCELLANY.

*Attempts to raise the Royal George,
sunk at Spithead, in 1782.*

SOME considerable interest having been recently excited by the operations of Mr. Dean, in his attempts to recover some parts of the stores of the Boyne, sunk off Southsea Castle, and by a visit paid by him to the Royal George, sunk at Spithead, round which he took a submarine walk, we have taken some pains to collect the following information, with respect to the former ship, which we now present to our readers.

The Royal George, a first rate of 100 guns, it is well known, sunk at Spithead on the 29th of August, 1782. This lamentable accident happened on a calm day, when there was scarcely a ripple on the water. Indeed, the calmness of the weather was indirectly connected with the sad catastrophe, as advantage was taken of this circumstance, and that particular day was selected as a fit one for careening the ship. For this purpose, a portion of the ballast had been moved to one side for the purpose of heeling her over, when the lower-deck guns, which had been neglected to be lashed, immediately rolled over to the lower side, and, bringing her ports under water, she filled and went down. From the short space of time occupied by the above, upwards of nine hundred persons met a watery grave, and among them that brave and experienced officer, Rear-Admiral Kempenfeldt, who was

writing a letter in his cabin at the moment. About eight or nine days after, thirty-five of the bodies of the unfortunate men floated, and were buried in one grave at Kingston, over which the parish of Portsea have erected a monument, as a grateful tribute to the memory of that great commander and his fellow-sufferers. Another stone has also been raised, by an individual who styles himself a Stranger both to the officers and ship's company, "as a testimony of sympathy for the unfortunate."

Previously to giving an account of the attempts which were shortly afterwards made to raise the Royal George, it may, perhaps, be interesting, at this distance of time, to enumerate the stores, and state the dead weight she had on board:—

	Tons.	cwt.
Weight of her anchors	20	14
Ditto of guns	220	2
Ditto of ballast	550	0
Ditto of shot	71	18
Ditto of coals	50	0
Ditto of beef	12	2
Ditto of pork	14	2
Ditto of butter	2	0
Ditto of powder	4	2
Ditto of bread	43	0
Ditto of peas	14	0
Ditto of flour	9	0
Ditto of vinegar, oatmeal, smith's forges, tools, cables, cordage, and sundry articles	20	0
	1031	0

We give also the dimensions of the Royal George, with the depth of water in which she lay :—

	Feet.	In.
Length of keel	146	10
Extreme length from figure head to the rounding centre of the taffrail	210	6
Length of gun deck	174	6
Extreme breadth of beam	50	1
Depth in the hold	19	10
Length of mainmast	114	3
Draught of water	22	0

Her sheet anchor weighed 4 tons and 3 cwt. and her burden and tonnage were 1,953 tons. The depth of water from the taffrail to the ground was 65 feet; from the forecastle, 50 feet 9 inches; from the starboard gunwhale, 46 feet 10 inches; from the larboard gunwhale, 42 feet. The forecastle was under water $4\frac{1}{2}$ fathoms; the main-deck, 6 fathoms and 6 inches; the quarter deck, $4\frac{1}{2}$ fathoms; the poop, 3 fathoms, and the rounding of the taffrail, 2 fathoms. She was sunk 13 feet into a solid bed of blue clay.

Having given the foregoing particulars, we now proceed to describe the attempts which were made, by the sanction of Government, to recover the stores, and to raise the Royal George.

In September, 1782, Mr. William Tracey, a broker, residing on the Common Hard, Portsea, submitted to the Lords of the Admiralty a plan for raising the Royal George, which was referred to the Commissioners of the Navy, and afterward sent, together with several other proposals, to Portsmouth Dock-yard, to be reported on. In the mean time Mr. Tracey used every means to make himself acquainted with the position and state of the ship, the nature of the tides, &c., and finding, from some local peculiarities, that his first plan was not practicable, he submitted, in the following month, another plan, which was approved by the Admiralty and Navy Boards, in preference to 117 other proposals, which had been sent in, but which were rejected in favour of his. In November he went to London, and procured diving machines, pipes, and other necessary apparatus.

By an agreement entered into between Government and Mr. Tracey, the former engaged to supply two ships of the third rate, with such other vessels and scafaring craft, as well as such

other stores as might be considered necessary, without prejudice to his Majesty's sea service.

The agreement was liberal on the part of Government, and the reward to Mr. Tracey, in case of his succeeding, was to be bountiful. The ship and stores were to be valued by the officers of Portsmouth Dock-yard. The damaged stores were likewise to be estimated, and Mr. Tracey was to have a preference in purchasing them, after the valuation had been made, besides which he was to receive a considerable sum of money as a remuneration for his services. There was also a clause inserted to the effect that, in case he did not succeed in raising the ship, he was to be permitted to recover whatever guns, stores, &c., he could. This agreement was entered into between Lord Barham, Comptroller; Sir John Williams, Commissioners Hunt, Marsh, and Palmer, of the Navy Board, on the one part, and Mr. Tracey and his sureties (who were bound for him in the sum of one thousand pounds, to complete the undertaking by a certain day.) The deed was prepared by Mr. Dyson, the Admiralty Solicitor, but was not signed before the 15th of May, 1783, when Mr. Tracey repaired to Portsmouth to commence operations.

In conformity with this agreement, he was supplied with the Diligente and Royal William, in lieu of the Dragon and Warspite, which had been originally fixed on, but which were considered by him unfit for the service required. The Diligente was taken from her moorings off the Hardway to the Dock Jetty, and the Royal William was also taken from the Fountain Lake to the North Jetty, both at his own expense, in order to get the necessary stores and casks on board. The ships were rigged in a proper manner, and on the 5th of June the Diligente was ordered from the Jetty to the moorings off the Common Hard, and on the 7th, Mr. Lawford, a pilot, was put on board the Diligente, by command of the Admiralty, contrary to the wishes of Mr. Tracey, for the purpose of conducting her to Spithead, which he did, but from the fact of her having been moved away before the proper arrangements had been made, it was the 19th of June before she was properly moored at Spit-

head. This separation of the two ships caused great inconvenience and expense to the contractor, inasmuch as his men were separated, and additional hands were necessary to get the stores on board the latter ship.

On the 13th of June, the Royal William was also ordered from the Dock Jetty, and on the 21st, in consequence of an order issued against the urgent entreaties of Mr. Tracey, she was taken to Spithead and moored. Lighters had also been promised from the Dock-yard, but, from some cause or other, they were afterwards refused, and Mr. Tracey was told he must hire vessels at his own expense.

During the whole of these operations, there appears to have been a great aversion on the part of Mr. Gilbert, the Master Attendant, to grant any assistance; and the premature removal of the Diligente and Royal William to Spithead, as well as the refusal of the promised aid with regard to the lighters, was attributed by Mr. Tracey to the interference of this officer, who is represented as having subsequently thrown every kind of obstacle in the way of his progress. Application was then made to Sir Henry Martin, the Commissioner of Portsmouth Dock-yard, on the ground that Government had agreed to supply craft proper for the purpose; but Mr. Gilbert had previously informed the Commissioner that no lighters could be spared, as they were all employed in getting stores out of ships. Mr. Tracey was, however, allowed the use of the Truelove sloop, and promised a lighter as soon as one could be spared.

With these limited means, Mr. Tracey proceeded, under great disadvantages, till the 29th of June, when another earnest application was made to Mr. Gilbert for a lighter, but which was peremptorily refused. Mr. Tracey then wrote to the Navy Board on the subject, who sent down an order by which one was obtained, on the 7th of July, an order for one lighter; but Mr. Gilbert supplied him with one that was so rotten and leaky, and altogether in such a bad condition, that on the 11th of October following she sunk, having been of but very little use in the mean time. Mr. Tracey, however, succeeded, on the 11th of July, in getting up the

Lark, sloop, which lay close alongside the Royal George, in fourteen fathoms water, and which it was necessary to clear away before he could proceed in his operations on the larger ship.

At this period, an application was made for two more lighters, in order to sling the Royal George with; but Mr. Gilbert said he could not spare them. In this situation, finding it impossible to proceed with such limited aid, and having so recently written to the Navy Board, Mr. Tracey, on the 5th of July, sent a memorial to the Admiralty, which was referred to the Navy Board, and the consequence of which was, that an order was received from the latter directing the officers of Portsmouth Dock-yard to give such assistance as they could, consistently with the King's service; but which order, being in such general terms, was of little use, as it still left it to Mr. Gilbert to throw effectual obstacles in the way, if he should feel disposed to do so, and of which, it appears, he availed himself to the fullest extent. In accordance with this spirit of opposition, Mr. Gilbert informed Mr. Tracey on the 13th of July, that he could not spare him any lighters, but that he might have the old Sherborne cutter.

In this dilemma, Mr. Tracey thought it better to accept the latter, although she was actually rotten and crazy, without even a capstan, and had just been returned into dock as utterly unfit for service. Indeed, she was in so bad a condition, that the pumps were obliged to be kept going, night and day, to keep her above water.

At this period, the arrangements being in a forward state, and every day's delay tending but to increase the difficulties and expense from the determination evinced by the Master Attendant to oppose his progress in every way he could, Mr. Tracey thought it best to make an attempt at once, rather than wait for the promised aid, and which he clearly foresaw would never be granted.

The carpenters were accordingly set to work. They fixed a crab on board the Sherborne for a capstan, and rollers at her bows, and having patched her up in the best way they could, they still found her so rickety, that they were obliged to thrape her round with

9-inch hawsers, in order to keep her together on a strain; and in addition to this disappointment, instead of two lighters which had been promised, one only was supplied, and that not until the 23d of July.

By the arrangements which had been originally made, Mr. Tracy expected to have had every thing ready for the grand trial by the end of July; but, in consequence of the obstacles which were thrown in his way, this was found impossible.

It must here be observed, that the delay was not only exceedingly prejudicial to the contractor in point of expense, but that it rendered the experiment much more difficult and hazardous, inasmuch as the best time of the year for carrying the plan into execution had already passed by, and every day was now of consequence. The weather in June and July had been remarkably moderate, and favourable to his operations; but now the days began to shorten, and the weather to become less settled and moderate—a point of the utmost consequence in works of this nature.

Notwithstanding these impediments, however, Mr. Tracey had succeeded, by the 26th of July, in getting eight cables fixed down on the Royal George, but for the four following days it blew so hard that no progress could be made. By the 2d of August, four more were fixed. From that day to the 7th, it blew so hard that the work was suspended. On the night of the 15th, a pair of the principal sweep cables were fouled, it was supposed by design, and it required the labour of six days to take them up and replace them. Notwithstanding all these discouraging circumstances, Mr. Tracey persevered, and by the 23d of August he got the last cables down and fixed on the Royal George, and all hove taut in their proper places.

On the 24th it began to blow hard, and continued a constant gale till the 1st of September, when he got the chain and all the cables again properly in their places. On the 2d he received the assistance, for the first time, of the King's men from the ships at Spithead, but not till he had effectually fixed the sweeps and purchase cables down on the Royal George.

On the 13th he was proceeding to anchor the ships properly in their place, when it again came on to blow so hard, that he was obliged to run the Sherborne and Truelove into the harbour for safety. The gale did not cease till the 20th, after which it moderated for three days. These were employed in putting the cables, stays, &c., in order, as they had suffered some considerable disarrangement during the gale. On the night of the 25th, however, it came on to blow again, and one of the lighters broke adrift and cut a large cable, exclusive of her own mooring cables, and drove on shore near Haslar Hospital. On the 26th the Diligent was got alongside the wreck, and would have been on it, owing to the King's men leaving their work at 12 o'clock, had it not been for the assistance rendered by the boats' crews of the Ganges, Mediator, and Diadem. On the 27th the Royal William was also moored alongside.

On the 1st of October the Royal George was fairly in a cradle, and the ropes attached thereto were all on board the two ships, and on the 3d and 4th all hands were employed in heaving on the cables.

On the 5th the latter began to strain equal, and having been stretched to the utmost at low water, the Royal George was raised by the flowing tide, and at high water was observed to move and swaddle in her bed, by Sir Hyde Parker and the officers of the Goliath. The gear was hove and strained every day, taut, at low water, and she lifted every high water, and on the 9th she was hove a head at least thirty or forty feet to westward. Of this fact there can be no doubt, as it was verified on oath, by fourteen persons who witnessed it, on the 1st of Nov. 1783, before Richard Godman Temple, Esq. the then Mayor of Portsmouth.

On the 10th, it was agreed by the Officers of the Commodore, Sir Hyde Parker, and others, that upon Mr. Tracey making a signal of three lights upon the ensign staff, the men from the ships should come early in the following morning, Saturday the 11th, in time to heave the purchase cables down all taut at low water, and have the advantage of the first strain on the gear, and it was fully expected that the

Royal George would have been got away on that day. With sanguine expectations he made the signal accordingly, but, to his infinite mortification, not half the required number of men came till it was too late to make the effort. He was, therefore, forced to wait, for the second strain, and at high water moved her again a little to the westward. The gear still held fast and well, and it was agreed to defer bearing down again till the next morning.

On the afternoon of the 11th, it suddenly came on to blow a gale at S.E., and so heavy a sea was caused, that one of the lighters, being leaky and rotten in her upper works, was filled with water almost in a moment. Every exertion was made to save her, but before she got half a cable's length from the Royal William, she went down. The other lighter, from the great swell, struck against the cap of the bowsprit of the Royal George, and was also near being lost, but by great exertions was got safe ashore, on Stoke's Bay.

The wind continued increasing all that night and the next day; and at the very time when he most wanted assistance, Mr. Gilbert took away the riggers, and boatswains with whom he had been supplied.

He was now destitute of every effectual help, and his prospects were truly discouraging. At high water in the night tide, from the heavy sea which was rolling, and the pitching and ascending of the ship, which caused a too sudden and very unequal strain of the cables, several of those forward broke.

On Monday, the 13th, the weather moderated, but it was found impossible to substitute fresh cables for those which were broken, in time for the present spring tides. Mr. Tracey therefore determined to make the last effort with what cables he had left, and, in order to take every advantage which his distressing situation afforded him; he started all the water which he had on board, amounting to upwards of one thousand tons in casks, and set all his pumps to work, to discharge the water which had been let in for the purpose of sinking the ships deeper.

On the morning of Monday he made the signal, agreed on, for assistance,

before daylight; but a very small proportion of the number who had been promised him, attended. The cables were, however, hove down in the best manner his limited strength would permit; and although this part of the operation was done very imperfectly, it was found that *the Royal George, long before high water, was afloat forward*. As the strain increased, owing to the cables being unequally hove down, two more of them gave way in the Diligente; one in the starboard gun-room port, and the other on the larboard bow. But all the midship cables still continued to hold fast.

It was now found, however, hopeless to make any further attempt till the lost cables were replaced, and other necessary steps taken; but here again Mr. Gilbert interposed, and took the charge of the ships into his own hands, by sending off six hundred men to Spithead to bring the Royal William into harbour; which was done.

After this unsuccessful attempt, Mr. Tracey was ordered to London by the Lords of the Admiralty, on the 24th of October, where he remained in attendance for a considerable time, and was obliged to keep possession of the other ships and stores during the whole winter, and to victual the men at his own, individual, expense till the midsummer of 1784.

Mr. Tracey, in the mean time, made several applications to be allowed another trial; but he received no answer till the 18th of May, when he was favoured with a reply, which being very short, we here give complete:—"Navy Office, 17th May, 1784. Mr. Tracey—We have received your letter of the 11th instant, and acquaint you that no further assistance can be given you by this Board, with respect to your raising the Royal George; and your security will be prosecuted as soon as the time elapses.—We are your affectionate friends, Charles Middleton, Edward Hunt, George March."

Other parties were then employed—Messrs. Braithwaites; but after recovering the sheet anchor, by means of the very purchase which Mr. Tracey had fixed on it, and an inconsiderable portion of stores, they gave up the undertaking. Mr. Tracey made another application to be allowed to resume

the work; but he was not permitted even to attempt the recovery of any of the stores, although the agreement expressly stated that he should do so, in case he should fail in raising the ship.

Another plan was then proposed by Commissioner Hicks, and Samuel Remnant, Esq. of the Sick and Hurt Office, which was, by means of a machine of great size and power, to screw ring-bolts into the Royal George, to which cables might be attached to sling her. These parties received every possible assistance from the Government authorities, who strove to outdo each other in their offers of service; but when the machine was put down in deep water, the weight of water made it entirely useless; and the plan, although it appeared very ingenious, was found totally impracticable. This mode was suggested by a Mr. John Jackson, who had previously offered it to Mr. Tracey, but was rejected as being impracticable; it was afterwards adopted by Messrs. Hicks and Remnant.

These, we believe, are all the efforts that have been made to raise the Royal George, or recover her stores—and we cannot but think that had Mr. Tracey met with the same assistance from the subordinate officers, particularly from Mr. Gilbert, the Master Attendant of Portsmouth Dock-yard, which he received from the heads of the Naval Department, the Royal George would most assuredly have been raised by the very ingenious and judicious means adopted by him.—*Portsmouth Her.*

Attempts to raise the Boyne.

His Majesty's ship Boyne, of 98 guns, was ordered, by letter from the Navy Board, dated Feb. 3rd, 1795, to have her defects made good at Spithead, and to be stored for Channel service. (The same letter contained a similar order respecting the Boston.) We mention this circumstance, as it was the last occasion on which she was repaired and stored.

On May-day, in the afternoon, the Boyne, while at anchor at Spithead, was observed to be on fire. Signals were immediately made for the fleet then at Spithead, to get instantly under way, and to render all possible assistance to her crew, all of whom were happily rescued

from the fate which seemed to threaten them, by the combined exertions of the officers and crews of the various ships at Spithead.

The weather was beautifully serene, and, had it not been for the melancholy accident which caused the fleet to way anchor, it would have been regarded as one of the most magnificent scenes that was ever witnessed at Spithead.

The fire soon reached the cables of the Boyne, and these being consumed, she floated adrift with the tide, then running to the eastward, and the fleet had some difficulty occasionally to keep clear of her.

The novelty and grandeur of the spectacle attracted together an immense number of spectators in every place where a view could be obtained; but the curiosity which was at first universally evinced was somewhat cooled, when it was found that the guns which the Boyne fired, from her lower deck, were shotted, as was customary during the war, the Boyne being under orders to sail the next day. The consequence was, several shots fell on Southsea beach, to the great alarm and discomfiture of those who had been attracted to the spot; but, considering that all the lower deckers were shotted, it is remarkable that so little damage was done. The worst accident on record, was the death of three men on board the Queen Charlotte, of 100 guns, who were killed by shots from the Boyne. Several shots fell near Southsea castle; and it was nearly opposite this castle that the relics of this magnificent ship, after the explosion of her magazine, sunk on the evening of the 1st of May, 1795.

This event was communicated to the Hon. the Navy Board, by the proper authorities at the Port of Portsmouth, in the following terms:—

“Portsmouth Dock Yard,
May 1st, 1795.

“Hon. Sirs,—We beg leave to acquaint you that, this day, about twelve o'clock, H.M.S. Boyne at Spithead was perceived to be on fire, on which every possible assistance was sent from the Dock-yard to such ships as might be in need thereof; that she afterwards drifted on the Spit; and when the water flooded, she floated, and drove over towards the Morse Sand, and at half-past five this afternoon she blew up.”

The late Mr. Wm. Burrigge, then a merchant of Portsmouth, conceiving it possible to remove the wreck, devised a plan which he considered would effectually accomplish the purpose, and immediately made known his wishes to the proper authorities in the Dock-yard, detailing so much of his plan as he considered necessary in order to prove to them that it was practicable.

This plan was considered feasible by the officers of the Dock-yard, as will appear from the following communication, which was made to the Navy Board on the subject:—

“ Portsmouth Dock-yard,
May 9th, 1795.

“ Having, in consequence of your desire, met and consulted on the propriety of Mr. Wm. Burrigge's letter, proposing to clear out the wreck of the *Boyne*, by taking up and bringing on shore all her guns, provisions, and stores, to their respective magazines, likewise to get the wreck in shore, out of the navigation of merchant ships, to take all the copper from the bottom, take her frame to pieces, drive out, and clear the same of, all copper and iron bolts and nails, and land the whole at his own cost and charge, being allowed ten tons of old rope for carrying on the said work, with the grant of the use of a second rate's anchor and two cables, to heave her in shore. In consideration of which, to be allowed for all and every article brought on shore, as above mentioned, two-thirds of the value thereof, that may, on a survey of the same by the proper officers, be put thereon. On which account, we are of opinion that his proposals for doing the same are reasonable.”

The result of the above application was, that Mr. Burrigge obtained from the Navy Board their authority and sanction to the undertaking, and was supplied with two of the largest cables ever made for the Royal Navy, as well as with the requisite quantity of old rope and a second rate's cable.

The preparations for this novel enterprise required, of course, considerable time, ingenuity, and expense, and it appears they were not completed till 1797, in the spring of which year Mr. Burrigge began to render his resources available.

By means of a diving bell, and the

assistance of a negro diver named John Green, he succeeded in raising 52 guns, and a considerable quantity of stores, and thinking that the ship was then sufficiently lightened to enable him to raise her, he commenced operations accordingly, and, after immense labour, succeeded in forming a cradle round the hull of the ship, of the 24-inch cables, intersected at proper distances with cables of smaller dimensions. This was a work of immense difficulty, as the hull was then imbedded several feet in the mud and sand.

Mr. Burrigge had also constructed, at great expense, an immense square raft, the sides of which were formed by four large masts, strongly attached by ropes, &c. at the four corners, under which he contrived means to secure three hundred (commonly called, empty) leagers, or large casks, each of which, from its bulk, would displace a quantity of water, if forced below the surface, equal to between two or three tons. It is clear, therefore, that the casks alone would bear a pressure of about 750 tons, before they would be forced under water; and it was calculated that the whole raft would support nearly one thousand tons. This raft was intended for the purpose of being fixed by means of ropes to the ends of the cables forming the cradle which went round the *Boyne*; and by heaving all tight at low water, it was supposed the whole would rise boldly with the flowing tide.

Mr. Burrigge also employed Garnet's patent blocks, which were then manufactured at Bristol, and which were at that time capable of heaving up heavier weights with a less number of men than could be effected by any other block then in use. Mr. B. purchased four immense four-fold blocks of this description for his purpose.

In addition to the raft and several sloops, Mr. Burrigge purchased a couple of large flat-bottomed Dutchmen, and built the largest sloop in Portsmouth, expressly to carry this enterprise forward, and by the assistance of the above blocks he hove down both the large Dutch ships by the two largest cables, one ahead and the other astern, and the raft and smaller craft in the centre! Mr. Burrigge was accustomed, in the course of his progress, to heave down successively at low water, till he

had brought all the means, thus employed, to fair and equal bearings. At length, after the most indefatigable zeal, encouraged and assisted, as he occasionally was, by the respective officers and crews of the Royal Navy, some of whom felt a warm interest in the undertaking, every necessary preparation having been made, Mr. Burrige announced his resolution to make, what he called "the grand attempt."

It had been previously reported by the negro diver, that such was the immense purchase, at low water, that the wreck or hull had not only been started from its bed of mud and sand, but that it had actually been raised several feet upwards, though it was still far from being clear of the mud and sand into which it had sunk. The most sanguine hopes were therefore, and very reasonably, entertained of the perfect success of the undertaking. Mr. Burrige's friends accordingly assembled to witness "the grand attempt," as did several captains and officers of the Navy, who felt interested in the result.

At low water the whole of the sloops, raft, &c. were properly hove down, and all was spliced, lashed, and secured, in a most efficient manner, and the anxiety felt at this moment by Mr. Burrige was, to a certain extent, shared by all present. As the tide began to flow, the strain at all points *proportionably* increased, and all appeared to promise well. Nothing proved defective, all the ropes and cables stretched equally, and every part of the apparatus stood firm. At this critical moment the wind veered round to S.E. which always causes a nasty swell at Spithead, and than which nothing could be more unfortunate for the undertaking, as it is clear that any motion of the water would tend to destroy that equality of strain which was absolutely necessary.

The weather also appearing threatening, and the wind still increasing, Mr. Burrige prudently resolved to postpone further proceedings for the present; and to avoid the danger which he apprehended from the sudden change in the wind and weather, he determined to let all slack again, and though this would have been attended with considerable loss of time, trouble, and expense, it was preferable to risking the success of the whole undertaking, and he made up his

mind to wait for fine weather, when he would heave all down again.

This resolution was, however, warmly opposed by Mr. Burrige's friends, and by many of the naval gentlemen, from whom he had experienced every attention, and received every assistance, and to whose judgment he therefore sacrificed his own opinion, and was assured, in return, that—"In two or three hours he must have the *Boyne* in the harbour, with a fair wind!" Thus overruled, Mr. Burrige was induced, quite against his will, to hold on for nearly an hour, by which time the flood-tide and wind had both risen considerably, and there was evidently a squally night approaching. Then it was that those who had before advised Mr. Burrige to hold on, recommended him to do as he originally proposed. But, alas, the time was gone by, and Mr. B. exclaimed, in despair,—"Where's the man to be found who now dares cut the lashings?" The fact is, that it was then impossible to cut away the lashings, without the most imminent danger. Seeing this, Mr. B. had no alternative but to wait the issue.

Mr. Burrige had always calculated upon having the sea like a millpond, upon this occasion. In short, he knew the enterprise was in vain, except it was so; and had it continued so, there is, we understand, no witness of his operations now living, who doubts that he would have succeeded. But now, in consequence of the tremendous swell, instead of an equal strain, one vessel was tossed up, and another down; one had too much strain, while the next had none at all, till, at length, both the wind and tide having much increased, the two large Dutch vessels pitched and surged fearfully. At this period the two largest sized cables, ever made in Royal Dockyards, bore alternately such unparalleled strains, that they appeared by the extension of their length to be untwisted, while the tar and rosin which is mixed with the hemp, when manufactured, oozed out in an extraordinary manner, proving the enormous weight they had to bear. At length the crisis arrived: one of the largest cables snapped asunder, and was followed by the other; and all the smaller vessels very soon drove adrift, but fortunately no loss of life occurred. The undertaker was the only sufferer on this occasion, and, instead of receiving,

as he expected, a reward of, at least, £5,000, his loss was little, if any, less than £2,000.

Launch of the Neptune, of 120 guns.—The launch of this splendid ship took place from this Dock-yard—an event for some time looked for with considerable interest, as one that was to add to the British Navy afloat the largest man-of-war ever built in this country, and produced a spectacle of striking magnificence. The weather was most favourable. At an early hour, carriages filled with fashionable families from all parts of the county flocked into the Dock-yard, the approaches to which were crowded with an immense mass of persons long before the gates were thrown open for the indiscriminate admission of the public, whilst every part of the harbour from which a view of the launch could be commanded was covered with vessels and boats, among which were to be seen no less than nine steam-vessels, crowded to excess with well-dressed persons from Brighton, the Isle of Wight, Southampton, &c. For the accommodation of the more fashionable portion of the community, booths with seats were kindly erected by the authorities, on either side of the ship, whilst ample arrangements were otherwise made to secure to all classes an opportunity of viewing the interesting sight. For the accommodation of the Rear-Admiral Superintendent (Sir Frederick Maitland, K.C.B.) and his friends, the *Illustrious*, 74, was fitted with an awning, and brought alongside the jetty, from which an admirable view of the launch was commanded. At about 12 o'clock a salute announced the arrival of the French frigate *L'Ariane*, from Cherbourg, the captain of which shortly after was discerned engaged in conversation with the Rear-Admiral on board the *Illustrious*, and partaking of the animated scene around him. At half-past twelve o'clock, the *Lady of the first Lord of the Admiralty* (*Lady Graham*), attended by Sir Pulteney Malcolm, Sir Frederick Maitland, and Sir Augustus Clifford, landed in a barge from the *Illustrious*, and repaired to the head of the *Neptune*, where her Ladyship having gone through the ceremony of christening her, returned to the former, to view the launch. Precisely at one o'clock, this beautiful ship, in a most

majestic style, glided slowly into her proper element, amidst the loudest cheers from the multitudes both on shore and afloat, the number of persons present having been computed at 100,000! It was a subject of general remark, that as the ship came off the stocks, she made no stern dip, nor did she create any swell in advance of her; this is to be accounted for by the ways having been run as far aft as possible, and the bilge ways well forward. She is certainly a splendid ship; she has a noble bow and a round stern—the latter being much more sightly than any in the other ships of her own class. She was taken into dock yesterday, to be coppered. Her dimensions are as follows:—

	Pl.	In.
Length on lower-deck	205	8
Ditto of keel	190	6
Ditto of keel for tonnage	170	5½
Breadth for ditto	54	7½
Ditto moulded	53	10½
Ditto to outside of wale	55	6½
Depth in hold	23	2
Burthen in tons, No. 2,705	70-94ths.	
Extreme length aloft	242	6
Ditto height { forward	56	6
{ midships	51	0
{ abaft	64	0

The *Neptune*, is fitted with Captain Lihou's patent pintles to her rudder. She is the eighth man-of-war that has been so fitted at this port, and several others have been fitted at other ports. In the event of the French squadron coming to Spithead, an exhibition will be made of the facility with which a rudder can be unshipped, the pintles shifted, and the rudder replaced fit for service.—*Hants Telegraph*.

Two new ships, to be called the *Collingwood* and *Vanguard*, of 80 guns each, are ordered to be built at Milford, on the plan of the *Vernon*, 50. They are to have 58 feet beam, or 3 feet 3½ inches more than the *Caledonia*, of 120 guns. The *Royal Charlotte* yacht is ordered to be paid off and taken to pieces, at Milford. She is only eight years old, has mahogany fittings and has recently undergone a thorough repair and refitment at a great expense.—*Cork South. Rep*.

Steam Navigation of the Rhine.—The *Augsburg Gazette*, of the 4th ult., has a letter from Basle, of the 28th of July, stating, that the experiment made by

the Rhenish-Prussian company, for the navigation of the Rhine by steam-vessels, to extend the navigation to Basle, has proved successful. Hitherto it was thought, that the water from Kehl to Basle was too shallow for that purpose; a steam-vessel, however, has just succeeded in accomplishing the desired object. Thus, when the system is completed, steam-vessels from Switzerland, down the Rhine to London, will effect their passage in 72 hours.—*Cork South Rep.*

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Extract of a Letter from an American Gentleman, at Lisbon.

“We arrived here on the 4th inst. in seven days, from Madeira, and your old companion has at length trodden upon European ground. Lisbon is altogether unlike any of our cities. Byron's *Childe Harold* contains the best, or at least the most graphic, description of it. The approach up the Tagus is grand, and the first view of it enchanting, glittering as it does in the glad beams of day, the sun-light being reflected from a thousand gilded domes: but once get within its winding streets, and, alas, *‘hut and palace show right filthily,’* and human as well as animal misery, in every conceivable form, meets the gaze and shocks the feelings of one accustomed to decency. The Tagus is here about two miles in width, with depth sufficient to float the largest vessels. We found it filled with men-of-war belonging to Portugal, France, and England. They have here two 3-deckers, the *Caledonia* and *Hibernia*, as well as five ships of the line. One of the most imposing sights I ever witnessed, was that of seeing them, a few days since, all get under way, and beat out of harbour together. They passed under our stern in succession, and I am now satisfied that John Bull is not to be sneezed at with impunity.

Lisbon is completely garrisoned; and we are told that the number of troops amounts to 80,000. It cannot fall far short of that number, as one meets with clouds of cavalry and masses of infantry at every turn. The harbour is defended by four strong castles, three ships of the line, and a great number of frigates and sloops of war. The naval force, however, is despicable in all respects; and it is

said that the fidelity and courage of the troops are not to be relied on. Pedro has not over 15,000 men in his expedition: but then those men are English and Poles; and a landing once effected, they may succeed, as Miguel is in extremely bad odour with the great majority. He is, after all, a fine-looking man, and a most splendid horseman. He issued a royal proclamation on our arrival; and no assurances of ours can make the people believe that we come not as their defenders. It is said on board, to-day, he is about to give us a royal dinner. I, for one, should have no objection to witnessing a sample of kingly hospitality. Talking of dining, reminds me of the Lisbon market. I went there this morning for the first time, and was really delighted with its appearance. It is held in an immense square near the Palace of the Inquisition; and in abundance and variety might almost vie with our own. It is attended by hundreds of pretty girls, but is exorbitantly dear. I bought some eggs from a beautiful little jade with a pair of eyes which might set ten poets raving. The manner of selling milk here is rather singular. At sunrise you meet in the streets droves of milch goats and herds of cows driven by the peasantry. The bells of the animals give notice of their approach, and any one wanting milk makes a sign. The drove is stopped; a bottle produced; and either a goat or a cow at once put in requisition.

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Whale killed in the Solway.—During the receding of the tide lately, which, as is pretty generally known, ebbs and flows with remarkable rapidity along the Solway Sands, a large bottlenosed whale was observed by a seaman of the name of Blair, floundering about in what is called the Carse-gut, within the Carse Bay, in the parish of Kirkbean. Having armed himself merely with a common salmon liester, Blair heroically advanced to the assault alone and unassisted, and, having stolen quietly forward until he had got within reach of the monster, being then waist-deep in water, he struck out at its head with all his force. The liester, however, rebounded harmlessly off the huge cranium—

“It just play'd dirn on the bane,
And did na mair.”

Watching his opportunity, however, Blair succeeded, at the next essay, in plunging his weapon into a softer part, somewhere about the region of the jugular. The agony of the animal was immediately evinced by the most tremendous plunging and snorting; and Blair, finding it in vain to attempt holding him with his slender weapon, contrived to extricate it, and a second time struck him almost on the same spot. Torrents of blood gushed out at both the wounds, and the monster soon became so weak and stupefied, that, instead of making towards the sea, he ran the farther into shallow water. By this time some of the inhabitants of the Carse, who had descried the conflict, hurried to the scene of action, and, as the victim was now completely exhausted, loops of ropes were cast around his carcase, and he was soon laid high and dry on the beach. He was found to measure no less than 19 feet in length and 11 in girth: the value of the blubber is estimated at 10*l.*—no bad morning's work for a single pair of hands. This is the first instance on record of one individual engaging with success in single combat a 19-foot whale in his native element, and after the fashion we have described. Some of the "cannie" bodies of the Carse, we understand, who came in at the death, and assisted to "streek the corp," were for claiming a share of the proceeds of the capture; but this Blair stoutly and most righteously resisted, telling them it was "a' his ain, and none o' his neebors'," but that he would certainly not grudge them "journeymen's wages;" a decision in which, after some demurring, they were constrained to acquiesce.—*Dumfries Journal.*

A 390-Pounder Gun!—The bore of the gun which fired stone shots upon our fleet, in 1806, at Abydos, is said to measure two feet in diameter, and to require the small charge of 123*lbs.* of gunpowder to load it. The stone balls which it discharged weighed 390*lbs.* each. Many travellers from curiosity have crept in at the muzzle; but considering that the diameter is two feet, we can see no curiosity in a man's being able to creep in. We should have expected to hear that people had been known to creep out of the touch-hole!—*Ports. Herald.*

We understand that arrangements are in progress for re-modelling the coast-guard establishment. That in Ireland, we hear, is to be placed under the entire superintendency of civilians, who, when the service was originally established, were always appointed to the situations of inspecting commander and chief officer. The civilians to whom we allude, are commanders of revenue cruisers, and various other old and faithful servants, bred in the revenue service in its once various branches. We think this would be a very beneficial change.—*Ports. Herald.*

Steam Boats.—Mr. Bromilow, of Liverpool, has brought forward a new claimant to the introduction of steam navigation, in the person of a John Smith, late of St. Helen's, whose statement is as follows:—"The engine in the boat alluded to, and which is generally supposed to be the first invented, was constructed for propelling boats by steam, as before stated, by Smith, at St. Helen's, in the year 1793, and her first excursion was down the Sankey canal to Newton races, in June in the same year, laden with passengers. On the Saturday following, she sailed to Runcorn, from thence down the Duke of Bridgewater's canal to Manchester. So far as memory serves me (after a lapse of 39 years) the following is a short description of this wonderful discovery; but having made no memoranda of the circumstance at the time, and I may say, being then young, and to a certain extent, like the rest of my friends, incredulous, I never anticipated what is almost to every one in the present day, so common.—The vessel had on her an engine on the old atmospheric principle, was worked with a beam, connecting-rod, double crank, in an horizontal line, and with seven paddles on each side, which propelled her, after the rate of about two miles an hour. John Smith was a rude, uncultivated, self-taught mechanic, and was supported with money by a Mr. Baldwin, at that time of St. Helen's, and was the first aeronaut who ever ascended in a balloon, either in this or the adjoining counties. Perhaps, I may observe, that the vessel or boat was purchased at Liverpool, and on Smith's informing the parties from whom he bought it, what his intentions were, he was treated

as some insane person: he was laughed at by one, insulted by another, and pitied generally; but, having money with him, he was allowed to purchase her. On being questioned and laughed at by a merchant at the time the purchase was made, he replied, 'Those may laugh who will; but my opinion is, before twenty years are over, you will see this river (Mersey) covered with smoke.'"—*Hull Paper*.

Substitute for the Diving Bell.—At a late meeting of the institution of civil engineers, the subject for discussion being—"The best mode of removing large stones or rocks, and clearing the foundations for building piers under low water, where the diving bell cannot be used;" it was stated by Mr. Gibb, that large masses of loose rocks had, of late years, been removed from Aberdeen Harbour, under his direction. The manner of performing this operation was extremely simple: a cast-iron block, twelve inches square and nine inches thick, was first let down, and laid on the top of the stone intended to be removed; a hole, two or three inches in diameter, had been cast on the middle of the block, through which a jumper was introduced of sufficient length to be worked from a barge; by this means a hole was perforated in the stone to the depth of twelve inches; and the sole purposes of the cast-iron block being to guide the strokes of the iron rod or jumper, a long Lewis-bolt was then let into the stone, firmly keyed, and the upper end secured by a chain to one or more barges, according to the size of the stone; this operation being performed at low water, as the tide flowed, the barge rose also, and along with it the stone, which was then floated to the place where it was finally deposited. In this manner large quantities of stones, from 3 to 7 tons weight, have been raised from a depth of nine feet at low water, and, by employing several Lewis-bolts at a time, fragments of rock weighing from twenty to thirty tons, have been removed without difficulty.—*Hull Paper*.

Temperance Ship.—The *Dalmatia*, of Boston, is now lying in the harbour of Greenock. The captain stated to some gentleman who waited upon him, to make some inquiries respecting the spread of temperance principles among

the seamen of America, that, for the last three years, no spirituous liquors had been used on board; and that, from his own experience, he was fully persuaded they were quite unnecessary either for himself or his men. He had never, since the time he was in command of a vessel, a period of twelve years, had a crew better behaved, or better able to discharge the duties incumbent upon them. In stormy weather, it was his custom to deal out hot coffee to the men, in place of ardent spirits; and he had found it to answer all the purposes of the latter beverage, without any of its disadvantages. As a farther proof of the progress of such principles, he mentioned, that, in building the *Dalmatia*, sixty persons had been employed, and he was not aware of one glass of spirits having been consumed on the occasion. The mate, a relative of one of the owners, stated, that the same company had twenty-five vessels sailing on Temperance principles, and that no difficulty was ever found in obtaining men to engage on the express understanding of there being no spirituous liquors provided on board; indeed, so general is the practice of sailing vessels on this principle, and so manifest the advantages, as to leave no doubt on his mind that, ere long, it would become universal.—*Scottish Guardian*.

Wrought-iron Steam-vessel.—A steam-vessel has just been completed for the Hon. East India Company, which is built of wrought-iron, under the superintendence of Lieutenant Johnson. She has been built by Messrs. Maudsley and Co. the celebrated engineers who furnish the steam apparatus for the government steam-packets, at their wharf in the Belvidere-road, near Westminster bridge. This extraordinary steamer is intended for towing vessels on the river Ganges. The whole of the vessel is built of iron, with the exception of her deck, which is of plank; she is flat-bottomed; the iron is half an inch thick, in large plates, which are riveted together by curiously-contrived rivets, on an improved method. Her length is 125 feet, and she is about 24 feet in breadth, and 11 feet between decks. The number of rivets used in building this vessel is upwards of 30,000, and it is expected that she will not draw more than one

foot eleven inches water. The steam-boats at present used on the Ganges are found not to answer, on account of some worm which eats into the wood, and in a few years destroys them. This has led to the determination to build iron steam-boats. She has been seven months building, and latterly 300 men have been employed upon her; and, when her steam-engine is on board, with all the apparatus and the fittings up, it is computed that she will have cost £20,000. Although the cost is immense, yet, from the durability of the material, there is but little doubt that the Company will be gainers in the end. Her steam-engine is 60-horse power, and the interior will be fitted up with every convenience, in a very handsome manner: the sides are painted black, with white streaks, and altogether she has a very light and elegant appearance. The first experiments of the powers of this vessel having, we understand, realized the most sanguine expectations of the gentleman (Lieut. Johnston, R. N.) under whose superintendence she was built, and of the Messrs. Maudsley, her builders, and given general satisfaction to the scientific men who witnessed them, it was determined to put them to a still stronger test, in a new series of experiments to be made below bridge. October 13th having been fixed upon for that purpose, the Lord William Bentinck (so the boat is called) was brought to the East India wharf, Blackwall, where the Chairman, and several other members of the Court of Directors, accompanied by some scientific men, embarked, and proceeded down the river. Before the vessel started, she was visited by Admiral Sir Pulteney Malcolm, who, after a very minute examination, expressed his opinion that she was in every way fitted for the object for which she had been built. After Sir Pulteney's departure, the boat proceeded down the river, when the experiments commenced. The first was to ascertain her draught, and from this it appeared that her draught was exactly 22 inches, fore and aft. The next was to ascertain the power of the helm. The result of this was most satisfactory. The vessel answered the helm admirably in coming round: she turned in her own length completely round in 50 seconds. It was next intended to try the working of the machinery, in "starting, stopping,

and reversing" them. An accident showed how complete the vessel was in this respect: a small boat which came alongside, and incautiously attempted to make fast to the fore part of the vessel on the weather side, while she was under way, was very nearly brought under the paddle-wheel, and would most certainly have been destroyed, with probably the two men on board, had not the command to "stop her" been promptly given, and as promptly obeyed. The rapidity with which this was done proved the perfect working of the machinery. The next trial was that of speed. She went a mile against tide in 8 minutes and 53 seconds. In a subsequent trial she went the same distance against tide in 8 minutes and 21 seconds, and with tide in 5 minutes 47 seconds. It was intended to have made several other experiments as to the vessel's power of towing. Thus it was to have taken one of the Company's large hoys in tow a mile with, and a mile against, the tide, and next two hoys the same distance, but the state of the weather, (it was blowing quite fresh,) and an accident which occurred as she got to Longreach, rendered it advisable to defer those experiments to some future day. As far, however, as she had been tried, the vessel came quite up to all the expectations that had been formed of her. The accident to which we allude was occasioned by a large brig, which ran foul of her, carrying away two of her chimney-stays, the whole of the life rail of the after quarter, the tiller and rudder-head, lifting the rudder, and straining and bending the pintles. Though this accident prevented the other experiments that were intended, it was not without its use, as it showed the solidity and strength of the iron-work in the body of the vessel, which was not in any the slightest degree affected by the shock. It also showed the facility with which damage might be repaired in a vessel of iron, for, having been brought to anchor, the whole matter was set to rights in less than the hour, during which the directors and their friends partook of lunch on board. The vessel afterwards returned to the East India wharf without further accident.

It was intended when this vessel was built, that, after some experiments had been tried as to her working, &c. she

should be taken to pieces and sent out to India in frame; but, on being put together, she presented so much more solidity and strength than were expected, that Captain Johnston proposed to the Directors to take her out across the Atlantic entire; certain additions and alterations, which he proposes, being first made. The question is not yet decided by the Court of Directors. It is one, however, on which Captain Johnston seems quite sanguine, and certainly it is but fair to say, that as far as the experiments of Saturday went, they tended strongly to confirm his opinion, that (with the proposed additions) she might be safely navigated across the Atlantic.

Many captains of vessels, engineers, and others, who have seen Captain Johnston's plan, are of opinion that it could be carried into execution with little if anything more than the ordinary risk of a voyage round the Cape. There are, however, others, whose opinions are deserving of respect, who take a different view of the matter. For our own parts, without pretending to any extensive knowledge of nautical affairs, we should (having seen Captain Johnston's plan) feel as much security in a voyage in the Lord William Bentinck across the Atlantic, as in any timber-built steamer of the same size.—*Times*.

Steam Travelling.—At the recent Middlesex sessions, the case of the King v. Mackellan, excited great interest, and the court was crowded principally by people connected with the river trade and steam companies. It was an action brought by the Watermen's Company against the defendant, the Captain of the Glasgow, a Scotch steam trading-vessel, plying between London and Dundee, for too rapid speed on the river Thames. The indictment contained four counts: the first charging the defendant with navigating his vessel on the Thames in an illegal manner, endangering the lives of his Majesty's subjects, &c.; and also with an assault, &c. After a long trial, in which much conflicting evidence was adduced, the jury returned a verdict of guilty; and Mr. Alley said this was all he wanted; and that, as to the defendant, it would be quite sufficient that he enter into sufficient securities for his not repeating the offence

for a twelvemonth. This was accordingly done.—*Hull Paper*, Nov. 1832.

Steam Navigation.—The following is the registered tonnage of the steam vessels plying between Leith and London:—

Soho	- - -	Capt. Bain	- - -	353 tons.
United Kingdom	- - -	Turner	- - -	335 - -
Royal Adelaide	- - -	Mills	- - -	324 - -
City of Edinburgh	- - -	Frazer	- - -	300 - -
James Watt	- - -	Jamieson	- - -	294 - -
Royal William	- - -	Chaplin	- - -	292 - -

Emigration.—Since the beginning of the present year, not fewer than 14,500 persons have emigrated from this port to the United States, Canada, and Van Diemen's Land. The great bulk have, of course, emigrated to the States.—*Liverpool Mercury*.

We subjoin a comparative statement of arrivals, tonnage, and emigrants at Quebec for the last four years, from the opening of the navigation to the 7th of July, with the value of the manufactured goods imported, paying a duty of 2½ per cent.:—

Year	Vessels.	Tonnage.	Emigrants.	Value.
1829	- - 336	- - 99,961	- - 6,528	- - £324,229
1830	- - 421	- - 108,659	- - 15,955	- - 419,364
1831	- - 497	- - 130,051	- - 32,327	- - 549,200
1832	- - 544	- - 146,113	- - 33,849	- - 704,730

Great Fire at Harbour-Grace, Newfoundland.

Harbour-Grace, Aug. 23.—“With feelings of deep regret I take up my pen to inform you that a most awful and destructive fire broke out here on Saturday last, (the 18th,) which has left the harbour, with very few exceptions, a heap of ruins. Upwards of one hundred dwelling-houses were consumed, and not fewer than six hundred persons, who in the morning were in comfort and opulence, were before night without shelter or food. We can never be sufficiently thankful that it was not in the night the fire broke out, as we should have all been burned in our beds. The fire was rapidly destructive, owing to the gunpowder in the merchants' stores. The people would actually starve, were it not for the kind and prompt relief that was sent from St. John's and Carbonear; however, we expect to get over all difficulties by degrees, and with God's assistance to be again in comfort.”—*Private Letter*.

From the Conception Bay Mercury, of Aug. 23:—

Saturday afternoon, between two and three o'clock, the most alarming fire that ever occurred in this district, broke out, between the premises of Mr. Thomas Marks, and those of Messrs. Thomas Ridley and Co. in this town. The cause from which it proceeded, or the precise spot where it first appeared, are, from all we have been able to ascertain, matters of conjecture; for, when discovered, the flames had assumed an appalling power, and were bursting forth simultaneously from the dwelling-house of the former, and a store belonging to the latter, which were only separated by a very small space. The wind blew fresh from W.S.W.; and so rapid was the progress of the fire, that, in about fifteen minutes from its discovery, the whole body of these buildings was enveloped in flames, and soon after, a quantity of gunpowder which had been deposited in the upper loft of the store, exploded, shaking the tottering timbers like an earthquake, and the next moment the atmosphere for a considerable distance was filled with burning embers. The flames now communicated to the houses right and left on both sides the street, spreading with awful rapidity, and assuming a most formidable and terrific aspect—they were seen passing from house to house with almost as much celerity as fire kindled among stubble, embracing each other in rapid succession until the immense range of buildings in a direct line to leeward, as far as Mr. Candler's, below Kerry Lane, became a burning mass. The scene that ensued baffles description; females and children were running about in all directions, shrieking in the most piteous manner, and endeavouring to save themselves from destruction; the owners of houses occupied themselves in casting their property out in the streets—merchandise of every description—beds, bedding, and pieces of furniture, lay promiscuously heaped together, and were trodden under foot; the little time given for preparation prevented the removal of these to a place of safety, and little, if anything, of the property of individuals could be saved; whilst the wildness of the looks of the sufferers, and the incoherency of their expressions to solicit assistance, excited the compassion of the

spectators, and the alarm and distress pictured in all their countenances rendered the scene truly appalling.

At the very first alarm such of the inhabitants whose property was not immediately endangered, collected in great force with the two fire-engines belonging to the town; and after a fruitless attempt to subdue the flames upon the spot where they broke out, directed their attention to the preservation of the extensive mercantile establishment belonging to the estate of Mr. H. W. Danson, which was in its immediate vicinity to the westward, for which purpose the engines were brought to play upon various points, but the fire had got to such a head before they arrived, and the materials were so inflammable, as to render all their exertions to check the progress ineffectual; a quantity of gunpowder was deposited here also, and in several other stores that destructive article had been imprudently lodged, which exploded from time to time, terrifying the people, and paralyzing their exertions, and fatally increasing the conflagration by hurling the burning fragments, accelerated by the wind, to an astonishing distance. The before-mentioned premises were now reluctantly abandoned, and the crowd retreated to the dock between them and Mr. Peter Browne's premises; here the contiguous houses had been covered with blankets, which were constantly saturated with water by the engines—the neighbouring fences and palings were immediately cut down, and by these combined efforts the fire first received a check, and the wind providentially veering at this time to W. by N. co-operated, and at length happily prevented the flames from extending to the west part of the town—all the buildings, however, in the contrary direction, as far as before stated, except a few in the rear, among whom were Mr. Parkin's, the Parsonage, and the Newfoundland School, were totally consumed. Entirely built of wood, containing great quantities of pitch, tar, rosin, and other combustible articles, besides being thickly interspersed with large manufactories of oil, they were, in the short space of two hours from the commencement of the alarm, reduced to ashes. No lives were lost, but the loss of property was great, in consequence of the rapid progress of the destructive

element, and has been, as accurately as circumstances would permit, estimated at the value of £100,000.

The Established Church, which has ever been considered the pride and ornament of the town, and was certainly the most handsome edifice of the kind in this island, was consumed at an early period. It cost about £1000 in building, a few years ago. The establishments of all the supplying merchants in the town, with only three exceptions, shared the same fate, together with all the goods and merchandise which they contained, besides several retail shops. The Waterford Arms, Keefe's Hotel, and the Commercial Room, twelve public houses, and sixty premises occupied by tradesmen and others, were entirely destroyed. In all, at least one hundred families, forming about six hundred of the inhabitants, were deprived of their dwellings in the short period we before stated, and reduced to take refuge in the houses of such of their fellow-townsmen as were beyond the reach of the destructive element, and to a dependence upon public benevolence, for that compassion and relief which their industrious exertions had enabled them, in common with the rest of the community, promptly and generously to afford to the unfortunate, upon every similar occasion.

Among the principal sufferers are—Mr. Foley, Mr. P. Rogerson, Messrs. T. Ridley and Co., Messrs. J. and B. Henderson, Mr. W. Innott, Mr. J. Innott, Mr. James Prendergast, sen., Mr. W. Mitchell, Mr. G. P. Jillard, Mr. T. Marks, Mr. D. Candler, Mr. Joseph Soper, Messrs. Stephen and Samuel Bennett, T. Danson, Esq., Mr. J. Knight, Mr. T. Dunford, Mr. John Richards, Mr. D. Donovan, Mr. R. Donovan, Mr. M. Green, Mr. F. Lynch, Mr. D. Keefe, Mr. W. Meagher, Mr. D. Green, Mr. H. Garland, Mrs. E. Garland, Mr. John Murphy, Mrs. Quinlane, Mrs. English, Mr. Grubert, Mr. T. Woolfrey, Mrs. St. John, Geo. Bayley, Esq., and Henry Pynn.—*C. S. R.*

Rideau Canal.—A gentleman who has been stationed on the Rideau Canal in the official department, has assured us, that since the opening of that navigation, (little more than a month since,) the tolls have amounted to £2,600; a sum of extraordinary magnitude, when

we reflect upon the size of the craft that ply along the line, and the difficulties attendant upon a new and intricate navigation. The Grenville canal has been eleven years in operation, and is not near completed, which of course diminishes in a great measure the profit and utility of the former. Amidst all the incongruities and inconsistencies of the present day, that appears the most monstrous, that can affix an official stigma upon Colonel By, for expediting a stupendous undertaking in the short space in which he completed the Rideau, whilst the Grenville line is no more than two-thirds finished, and is likely to continue an insurmountable barrier from Kingston to Montreal for many years. In the year 1826, the Rideau was commenced, that is, as far as surveying, levelling, and building store-houses, might be considered a commencement; but no active operations were engaged in until May, 1827; and in May, 1832, a steam-boat passed through the whole extent, a distance from Lake Ontario to the Ottawa, of about 130 miles, having forty-seven locks, some of which have a rise of no less than fifteen feet. The Grenville passes a series of rapids on the Grand and Ottawa rivers, in a distance of about fourteen miles, and has a lockage of about fifty feet. The chief part of the excavation is through limestone of a difficult nature. The Rideau, on the other hand, passes, with very few exceptions, through an almost impervious wilderness. The officer in charge having had to contend with a rapid and almost unmanageable torrent, during the spring floods of the Rideau river, every year since its commencement. Immense dams have been built, to lull the rapids and convert their sites into navigable waters, under every vicissitude of season. The last fifty miles of the route passes through a region strictly primitive; in the course of which, some hundred thousands of cubic yards of the hardest granite, and other rocks, have been excavated, to afford space for passing the locks on the necessary canal communication required. The sickness in this part has been unparalleled, far exceeding any thing of the kind experienced in the country. We have made these comparisons, because there appears to us a most unjust censure upon

Col. By in the treasury minute, and an indirect impeachment of the integrity with which he executed his gigantic work. The Rideau cost about £750,000, which has been honestly expended in five years, and is capable of repaying, with interest, in a few years, the whole expenditure. The Grenville has cost about £100,000, and cannot be completed in less than six years.

As we before said, Colonel By dashed at his work, conceiving time equally as valuable as money; and the proof of our position may be adduced from the startling fact, that already the tolls have amounted to the sum above specified. Neither personal labour or attention were spared by Colonel By or any of his officers, and the public of Canada will regard his operations as an imperishable monument of his honour and industry, notwithstanding the efforts that have been made to detract from both.—*Kingston Chronicle*.

The Hector, Captain Villedieu, has recently arrived at Granville, from the banks of Newfoundland, with no fewer than 33,000 codfish, which were caught in twenty-five days. Captain Villedieu reports that the fisheries off the bank had been generally very productive, but those on the coast were by no means so successful. The vessels from the bank of St. Peter and Miquelon had also brought into Granville some very large cargoes, several of which have already been sent off to the Antilles.—*French paper*.

Gallant Naval Action.—The following is from the Jamaica Courant of the 2d August:—We have already stated the capture, by his Majesty's schooner Speedwell, of the Planeta, Spanish slave schooner, and also of the Aquila, another slave brig, with 616 slaves; but what will our readers think, when we assert that the same vessel has added another slave vessel to her list of captures, making a total of 1000 slaves in the short and unprecedented period of three months; and we consider that we should not be doing justice to the zeal and ability displayed by Lieutenant Warren throughout, did we neglect to state a few particulars relative to the capture of the Aquila brig, one of the largest and most victorious slavers out

of the Havana. The brig had a round stern, which gave her additional advantage over her gallant little opponent. She was seen at day-light on the morning of the 3d of June, and immediately chased by the Speedwell, whose superiority of sailing soon convinced her captain that he had no hopes of escape; on which he shortened sail, and hove-to, in man-of-war style, to engage. The details of an engagement at sea would perhaps not be of much interest to our readers. Suffice it to say, that, after an action of an hour, within pistol-shot, the brig struck her colours to the Speedwell. The tonnage of the Speedwell is about ninety, while that of the Aquila is 330, and fitted out in the most splendid manner, with a picked crew of seventy men! yet, notwithstanding this disparity, Lieut. Warren engaged her, and he was nobly supported by his crew. On taking possession, some difficulty occurred as to the disposal of the prisoners; but with men who could perform such deeds of daring, nothing was impossible. The crew was divided between the brig and the schooner, and seventy men placed in irons by fifty of the true John Bull breed, and the brig safely navigated to the Havannah. On nearing that port, the excitement on shore was very great, to see a cock-boat escorting one of the finest vessels belonging to Cuba in port, as a prize; and so annoyed was the Spanish governor at a circumstance which, he said, reflected discredit upon the national character, that the captain has been sentenced to prison for ten years!

The Rorqual, or Great Whalebone Whale.—This greatest of all nature's living works was cast ashore about this time last year on the banks of the Forth, near North Berwick, and was there dissected by Dr. Knox and his brother. The skeleton of this truly gigantic animal, whose measurement so far exceeds the ordinary dimensions of animated nature as positively requires to be seen before being believed, is now in course of preparation, and we believe will be set up in such a manner as to enable scientific men to examine it with every advantage. The baleen (commonly called whalebone) has been prepared with infinite care and trouble, and will be placed in its original section

in the palate. If there be one part more remarkable than another, it is the appearance of the baleen, or whalebone, when occupying its natural position; the prodigious quantity, (upwards of two tons,) and, at the same time, mechanical beauty connected with every part of the unique mass, rendering it beyond the power of language to describe, or give the slightest idea of it. The skull, or brain-bone, was divided vertically, with a view to convenience in moving the head, (this portion of the skeleton weighing eight tons.) This section displayed the cavity for containing the brain, and thus some knowledge of the sentiment and leading organ of an animal, the dimensions of whose instruments of motion fill the mind with astonishment, will at last be obtained. Results unexpected, we believe, by most anatomists were arrived at. The cavity (a cast of which will be submitted to the anatomical public) was gauged, or measured, in the manner first invented and recommended by Sir Wm. Hamilton, and under that gentleman's immediate inspection; the weight of the brain, estimated in this way, amounts to 54lb. imperial weight. The brain of the small whalebone whale, examined by Mr. Hunter, (the specimen was only seventeen feet long,) weighed about 4lb. 10oz.; the brain of the elephant weighs between 6lb. and 7lb.; the human brain from 3lb. to 4lb. Thus, in many hot-blooded animals, to which class the whale most strictly belongs, the brain bears a certain relation to the bulk of the body, but in many others it does not. The laws, then, and nature of this co-relation, have not yet been determined. The idea that the whale in question was a South Sea whale, which had wandered from his native ocean, and been unable to retrace his path, (an idea which we believe was started by a practical South Sea fisher,) must now be given up; the structure of the skeleton, as compared with that described by Baron Cuvier, and which was sent to him from the Southern Ocean by one of his assistants, Delatande, showing specific differences. Neither does it resemble that now suspended in the Town-hall of Bremen. Thus, there is every reason to believe that this particular species has not yet been described, nor, perhaps, even seen by any scientific

anatomist. The total length of the Rorqual whale was eighty feet; and although Captain Scoresby mentions one which he heard of, which was said to measure somewhat more than one hundred feet, it is extremely probable that this measurement had not been taken correctly. The whale examined by Sir Robert Sibbald, nearly a century ago, measured exactly seventy-eight feet; "fourteen men could stand at one time in the mouth; and when the tide rose, a small boat full of men entered easily."—*Scotsman*.

The following extract from the letter of an American gentleman, affords a sad picture of the effects produced by extraordinary dry weather at the Cape de Verd Islands:—

Villa da Praia, Cape de Verd, 28th April, 1832.—"In my former letters, I think, I mentioned the miserable state of the inhabitants of the island of Fogo, by cause of famine. I am sorry now to inform you, that they have arrived at the last stage of human suffering. By an arrival from there yesterday, we learn from unquestionable authority, that in the parish of St. Lawrence, the deaths for the last ten days have averaged seven per day, from actual starvation; and it is calculated that fifteen per day in the whole island perish for the want of food! We have already received three or four thousand of these poor miserable beings, which makes our burthen very heavy, as this island the last year did not produce enough for her own population; and were it not for a reservation of Indian corn kept in the husk, by several of the most wealthy inhabitants, for some years past, we should be as badly off as our Fogo brethren. Although we have a number of ships constantly touching here, which gives us an advantage over them, we can expect no help from Portugal, as long as she is in this distracted state; and would to God some public-spirited philanthropists would open a subscription, and send a cargo or two of Indian corn and coarse bread to the poor sufferers; in fact, any thing that would keep soul and body together—it would be real charity, as they have nothing in return but their prayers.

"Farmers who have been in the habit of receiving 3,000 bushels yearly, have

received this year no more than 50! and some not a kernel! And the general distress of the times will not allow of any individuals supporting the whole poor. I support seven myself, besides transient charity. I am happy to say, that you will find in the natives of this island, a really charitable feeling. A few days since, a yacht came loaded with 150 of them, and in three or four hours they were all accommodated with homes. I cannot but mention one little circumstance: the Peacock was here when the 150 poor fellows were turned out on the beach, and immediately Capt. Gersinger sent four bags rice, four bags bread, one barrel beef, and one barrel pork, to be distributed among them—it had a most powerful effect on the Governor, and all the Portuguese merchants of character. Capt. Waters, sen., gave a few bags Indian corn to be sent them. All these things look well, and exalt our national character. Excuse this long detail—would to God that our highly public-spirited merchants may extend their usual charity to the poor sufferers of Fogo!"

Extract from a letter dated Sydney, C. B. July 20, 1832:—

"The season is the most extraordinary that has ever been known or heard of; May, June, and half July, have passed, with the temperature usual in April—the thermometer ranging from 44° to 55° instead of, as in ordinary seasons, from 60° to 80°. The immediate cause appears to be the immense masses of polar ice hanging about the shores of Newfoundland. Vessels could not get out of St. John's, through the ice, late in June, and I believe it was still there at the commencement of this month. We have not seen it here, but we have felt it. A constant easterly wind has been kept up, by the cold wind from the ice rushing in to the land, to replace the warmer air as it ascends. Thus the air creates the wind, and keeps itself by that means in its position on the eastern shore of Newfoundland, and perishes all the countries to the leeward. The cause of this influx of ice I have not heard any attempt to explain, nor can I imagine it, but I hope it may be such as is not likely often to occur. Within these few days, the S. E. wind has at last carried the day, and we have been tran-

sported into the climate of Lisbon. Thermometer at 80°. One can hardly judge what the effect of this preternatural season will be on the crops. I should fear, there can hardly be time for the potatoes and grain to arrive at maturity."

Communication between Lough Erne and the Sea.—A meeting was held in the Grand Jury-room of Enniskillen, in August last, the Marquis of Ely in the chair, connected with the above subject, and to take into consideration the best mode of devising means to defray the expenses of the survey now going on, for which purpose, in addition to a committee formerly chosen, John Creighton, Esq., was appointed Treasurer. Col. Conolly, M. P., attended, and expressed his willingness to co-operate with the gentlemen of Fermanagh and Cavan in an object which would be conducive to the benefit of this part of the kingdom generally.—When the survey shall have been completed, a meeting of the gentry, merchants, &c., of the three counties, is to be convened for the purpose of petitioning Parliament for leave to bring in a bill to have the desired object forthwith accomplished by Government assistance. By way of further encouragement, Colonel Conolly intimated that no matter what portion of property the line of communication should run through, it should be given gratis; as has also a gentleman whose property lies between that of the Colonel and Belleek.

Depth of the Sea.—As to the bottom of the basin of the sea, it seems to have inequalities similar to those which the surface of continents exhibits; if it were dried up, it would present mountains, valleys, and plains. It is inhabited almost throughout its whole extent by an immense quantity of testaceous animals, or covered with sand and gravel. It was thus that Donati found the bottom of the Adriatic sea; the bed of testaceous animals there, according to him, is several hundred feet in thickness. The celebrated diver Pescecola, whom the Emperor Frederick II. employed to descend the strait of Messina, saw there with horror, enormous polypl attached to the rocks, the arms of which, being several yards long, were more than sufficient to strangle a man. In

a great many places, the madrepores form a kind of petrified forest fixed at the bottom of the sea, and frequently, too, this bottom plainly presents different layers of rock and earth.

The granite rises up in sharp-pointed masses. Near Marseilles, marble is dug up from a submarine quarry. There are also bituminous springs, and even springs of fresh water, that spout up from the depths of the ocean; and in the Gulf of Spezia, a great spout or fountain of fresh water is seen to rise like a liquid hill. Similar springs furnish the inhabitants of the town of Aradus with their ordinary beverage.

On the southern coast of Cuba, to the southwest of the port of Batabano, in the bay of Xagua, at two or three miles from the land, springs of fresh water gush up with such force in the midst of the salt, that small boats cannot approach them with safety; the deeper you draw the water, the fresher you find it. It has been observed, that in the neighbourhood of steep coasts, the bottom of the sea also sinks down suddenly to a considerable depth; whilst near a low coast, and one of gentle declivity, it is only gradually that the sea deepens. There are some places in the sea where no bottom has yet been found. But we must not conclude that the sea is really bottomless; an idea, which, if not absurd, is, at least, by no means conformable to the analogies of natural science. The mountains of continents seem to correspond with what are called the abysses of the sea; but now, the highest mountains do not rise to 20,000 feet. It is true, that they have wasted down and lessened by the action of the elements; it may, therefore, be reasonably concluded, that the sea is not beyond 30,000 feet in depth; but it is impossible to find the bottom even at one-third of this depth, with our little instruments. The greatest depth that has been tried to be measured, is that found in the northern ocean by Lord Mulgrave; he heaved a very heavy sounding lead, and gave out with it cable rope to the length of 4,680 feet, without finding bottom.—*Blake's Encyclopedia.*

A most melancholy and distressing accident took place at Yarmouth lately. The Ocean, fishing-boat, Warner, com-

mander, of 42 tons burden, belonging to R. and T. Hammond, Esqrs. of Yarmouth, was struck (between the Ridge and the Knowl) by a heavy sea, and turned over, and, melancholy to relate, every person on board perished. It was at the time blowing a very heavy gale from the south; and although the Nancy, lying but a small distance off, had been speaking her but a short time before, yet so instantaneous was the catastrophe, that no assistance could be rendered. The boat had eleven hands on board, consisting of the master, two sons, a brother-in-law, and five others.

Loss of the Smack Forfarshire, of Dundee.—This vessel went ashore on the evening of the 5th of Oct. to the eastward of St. Abb's Head, close by Fast Castle, where the shore is very precipitous. The passengers in a few minutes reached the deck, and one party got the small boat disengaged, and got immediately on shore; the others, amongst whom were women and children, were all, by the activity of the captain and ship's crew, put upon the rigging, with the exception of one woman and a boy, her nephew, she having in her distracted state of mind grasped at the ship's sails with one hand, whilst with the other she held the boy, and consequently, when the ship went down, both were washed overboard, and have not yet been found. The vessel, though close to the land, lay in about three fathoms water, and as she never has less than eight feet water in her, and has about 50 tons of stone and iron ballast on board, it is very doubtful if she will be got up, or even all her cargo (consisting of corn and manufactured goods) be got out. Much depends on the settled state of the weather, for getting a part of her cargo saved; if it become again stormy, which at this season is much to be dreaded, nothing can approach her, and she must soon break up. We are now, however, making every exertion to save as much as possible; and the greatest praise is due to Mr. Mentor Annis, of the Preventive Watch Guard, and his crew, from Redheugh, for their prompt relief of the passengers and crew from the wreck.—*See Wrecks, No. 318.*

Loss of the Rebecca of Glasgow.—This fine vessel, a regular trader to

Canada during the last sixteen years, and commanded by an experienced seaman, is a total wreck at Matane, about twenty miles above Cape Chat. She first struck in thick weather, (which had continued three days, and prevented her getting a pilot,) at three P. M. last Friday week, and by great exertion was got off, apparently not damaged, but unfortunately struck again, and all attempts to set her free proved unavailing. She lies high up, and can be boarded on foot at low water. The rocks have broken through her hull, and it is not improbable that she has parted during the late gale from the east. Her cargo was not considerable, and consisted of brandy, coals, some bales of dry goods, and a few hogsheads of sugar; all of which, except the sugar, has been saved, and brought in the vessel, with the passengers, to Quebec. No lives were lost. Captain Laurie remains below, with the crew, to secure the materials. The passengers, Mrs. Forrester, Mr. Develin, and Mr. Donald Gallon, arrived at Quebec, all well, yesterday.—*Quebec, 6th Oct. 1832.*

Destruction of a Brig by Fire.—A letter dated Nassau, New Providence, August 28, 1832, says—"It is with the deepest regret that I have to announce to you the loss of the brig Hannah, at sea, by fire. I sailed from Montego Bay, Jamaica, on the 28th July, with a full cargo of rum, sugar, logwood, shrub, and pimento, for Quebec; and on the 13th of August, while blowing very hard from the N.E. vessel under very low canvass, and a high and cross sea on, about eight o'clock in the morning, we observed the vessel had caught fire forward, which soon communicated with the rum, and in an instant she was all in flames. You may judge my situation and feelings—a crew all about me in a state of despair—the vessel in flames forward. I encouraged them as much as possible, and with great exertions we succeeded in getting out the jolly-boat. We were then in lat. 26° 18' N. and long. 72° 30' W. distance 200 miles from the nearest land. I got a compass and quadrant in the boat, with a little bread and water, and committed ourselves to the mercy of the waves in a small boat, 14 feet keel; but, thanks to the almighty and merciful God, who brought us safe to land! On the third day we

arrived in the island of Abaco, one of the Bahama Islands, and about twenty miles whence Columbus first landed when he discovered America. We travelled until we got to a small settlement, where we were taken in by the people, and very hospitably treated. We remained there eleven days, when we procured a passage to this port in a small sloop. I am now on my way to the United States, and I return home to St. John's by way of Baltimore."—*See Wrecks, No. 322.*

Loss of the Science.—This ship left Hobart Town on the 8th of May, 1832, bound for London, W. Saunders, master, and proceeded with a strong but favourable gale until the 21st of June, when in about lat. 59 deg. S. and long. 89 deg. W. about five o'clock, A. M. it began to blow very strong, and continued to increase so violently until about nine o'clock, that they were obliged to heave to, under a close-reefed main-top-sail; the crew then tried to furl the fore-top-sail, but before they were on the yard the main-top-sail sheets were carried away, and they came down to clew the sail up; but before it could be done, that and all the other sails were blown into ribbons; and in a short time after, a tremendous sea boarded her, and washed four hands, together with the bulwarks, fore and aft, boats, main and mizen masts, overboard, carried away her tiller and wheel, and left her a complete wreck. The remainder of the crew were left in this hopeless situation until the 26th, when to their unspeakable joy, a ship hove in sight, which afterwards proved to be the Warrens, of London, Andrew Bliss, master, homeward bound from the South Seas; but such was the tempestuous state of the weather, that it was thought impracticable to lower a boat; but George Lake, the second mate of the Warrens, a brave experienced seaman, and five others, volunteered their assistance, at the imminent risk of their lives, and they fortunately succeeded in their humane undertaking of removing the remainder of the crew, fifteen in number, at four different times, in safety, on board the Warrens, when immediately the boat they had conveyed them in went to pieces. The captain and crew were treated with the greatest humanity, on board the Warrens, which reached London in

safety on Monday, the 15th inst. having fallen in with another wreck, off the Western Islands, which was deserted, and supposed to have been some months in that situation.—*Hull Paper*, Nov. 1832.—*See Wrecks*, No. 334.

Awful Event: Eleven persons drowned.—We state with extreme regret, that on the 31st August, a dreadful calamity occurred at Grosse Island, by which James Hague, second mate, and ten of the passengers of the ship *Minerva*, Burton, from this port to Quebec, met a watery grave. The following particulars of this distressing event are given in a letter from the captain to Mr. Locking, one of the owners of the vessel. In consequence of the quarantine regulations, the passengers were landed at Grosse Island, where they had to remain four days, before the vessel would be allowed to proceed to Quebec. In getting them on board again, as the skiff was coming off with her last load, she unfortunately upset close to the ship; some of the passengers were saved by boats that came to their assistance; the rest with the mate perished. This dreadful misfortune occurred on a Sunday evening. The sufferers were Mrs. Miller and two children; Mrs. Lightfoot and one child; two little girls belonging to Mrs. Mc. Carron; two of Mrs. Broadbent's sons; a child of Mrs. Johnson's, and James Hague, already mentioned.—Our readers will remember that the *Minerva* was the vessel which we had occasion to allude to, when, on her voyage out, early in July last, she was compelled to put back to White Booth Roads, on account of there being two or three cases of cholera on board.—*Hull Paper*, 9th Oct. 1832.

Isle of Wight.—On the 8th October, an American ship, of 400 tons burden, laden with rum and deals, was wrecked in Chale Bay, in the Isle of Wight. She struck at about day-break, at a distance of a quarter of a mile from the shore, all her three masts having been cut away, and the sails upon her bowsprit, the only ones remaining to her, fluttering about in rags. For nearly seven hours the crew might be seen on the stern of the ship, looking anxiously for assistance from the shore, while the im-

mense waves were breaking over them in quick succession. The wind was blowing most violently, there was a tremendous sea, and it would have been madness for any boat to have ventured out. Captain Manby's gun was placed at the foot of the cliff, and it was three times discharged, with the hope of throwing out a rope from the shore to the ship. It failed every time: once the rope broke; another time the shot to which the rope was attached fell short; and the third time, it struck against the ship, instead of going over her. The Preventive Service men were preparing for a fourth discharge of the gun, when a gentleman, named Ghimes, discharged a rocket, of the invention of Mr. Dennett, and with this, at the very first trial, a line, which was attached to the rocket, was thrown over the ship, and thus a rope was made fast to the ship at one end, and held by a number of men on shore, at the other. A boat was attached to this rope, and by working the boat along the rope, in the manner of a ferry-boat, two Preventive Service men, at the imminent risk of their lives, proceeded to the ship, and at length extricated the whole of the crew, 19 in number, from their most perilous situation. The ship, it is said, will certainly go to pieces. The rocket which did such good service was about half a yard long, and about as thick as a man's wrist. The outside of it was of iron, and a stick 9 feet long, and as thick as a footman's cane, was affixed to it, and also the line which was thrown over the ship. The rocket was placed on a three-legged stand, similar to the stand of a surveyor's theodolite, or telescope, and from this stand it was fired at a slight elevation. This species of rocket appears to possess a decided advantage over Captain Manby's gun, because a rocket, being impelled by its own force, goes equally all the way that it travels; but a shot from the gun goes off very violently at first, at the risk of breaking the rope, and then loses its force, with an equal risk of falling short of its intended object.

Wreck of the Wellington, Young.—From Leith, to Quebec and Montreal,

at Cape Rosier, in the river St. Lawrence, on the 15th May. Extract of a letter from one of the passengers, dated Montreal, 10th June, 1832:—

“ We arrived here after a long and tempestuous passage; indeed, we had not above three or four good days, from the 1st of April, the day we weighed anchor in Leith roads, till the 15th of May, when, about five o'clock in the evening, the vessel struck with tremendous force, and threw me down on the cabin floor. I got on deck as fast as possible, when, to my amazement, I saw we were on shore, and a tremendous surf breaking right over the stern of the vessel, which unshipped her rudder, and carried away the round-house in two or three minutes. The scene on deck at this moment was truly distressing; the noise the women and children made was heart-rending. We lowered our boats, which was accomplished with great difficulty and danger, owing to the heavy surf. At last we spied a Canadian boat, well manned, standing right for us, which came alongside with great difficulty, and directed us to a small cove, the only place where a landing was practicable. Luckily was it for our passengers that we had three large boats, and with great toil and danger we were all safely landed, with not an article but the clothes we had on our backs. On landing, there was just one small Canadian log-house and two unfinished fishing-sheds, for drying fish in the summer season. We got the women and children into the log-house; the rest of us, including the captain, slept in sheds, where the snow was lying upwards of two feet deep. We got up next morning in a sad plight, but saw it was impossible to go on board the wreck, as the surf was as high as ever, though the wind was a good deal abated. We had saved three bags of biscuit, a few pieces of pork, and a small keg of gin—little enough for 130 people—and we did not know when we might be able to procure more. The second day the surf was a good deal down, when the long-boat put off from the wreck, to procure a supply of provisions, and save some of the passengers' luggage. She arrived safe alongside, but unfortunately one of the passengers was so anxious to save his luggage, that he persuaded the Canadians to help him to pull one of the

boats; they pushed off contrary to the advice of every one, and got within a ship's length of the wreck, when, melancholy to relate, they were all drowned, without the possibility of the people on board being able to render them the least assistance. In the course of a day or two the weather cleared up, when all hands and the passengers manned the boats, to save what we could from the wreck. We succeeded in saving the greater part of the luggage, amongst the rest our own, greatly damaged, as it was eleven days under water. We succeeded in saving the greater part of the ship's stores and cargo. At length the master of a small schooner from Quebec, hearing of our situation, came to our assistance, and brought up 54 of us to Quebec, and were nearly lost a second time, the schooner having run ashore behind a small creek, where she unshipped her rudder. Next morning we succeeded in getting all to rights again, and arrived at Quebec after a five days' passage, all in good health.”

Effects of the Storm on the 8th of Oct. at Liverpool.

The morning of Monday was beautifully clear, the wind blowing gently from the south-west; and, with the exception of a heavy and sudden fall of the barometer, there was nothing to augur the approach of the tempest which so soon followed, and, we grieve to say, with such disastrous consequences. The tide was at its height at half-past ten in the forenoon, and, as is customary at the ebb, such vessels as were ready for sea availed themselves of the current of the falling tide to take the chance of clearing the banks and getting to sea before nightfall. To effect this object, several of the larger class of vessels were towed out by steamers. About twelve o'clock, the sky became overcast; the wind rose, and increased in violence, accompanied with a heavy fall of rain, until it became a tremendous gale, blowing from the north-west.

Amongst the vessels which went out were, the *Virginian*, *Algonquin*, *William Neilson*, *Vigilant*, *Grecian*, &c. In the course of the afternoon it was ascertained, by telegraph, that two ships and a brig were aground in the *Rock Channel*, but their names could not be ascertained, as they had not hoisted

their signals on going out. This occasioned considerable anxiety during the latter part of the day, and the night which followed, for the safety of such vessels as were not so fortunate as to return to port, and thereby avoid the terrors and dangers of approaching night.

The morning's dawn, however, exhibited numerous instances of the ravages of the resistless blast, which had swept the river and the entrance of the port. Fragments of wrecks lay scattered along the beach to the northward of the town, from low to high-water mark, in such numbers as to leave it no longer doubtful that the tempest had been tremendous in operation, and more than ordinarily calamitous in its consequences. As the morning advanced, hundreds of spectators and wreckers were seen traversing the shore, from Beacon's-gutter to the mouth of the Alt.

The Grecian, a fine vessel, outward bound for Boston, had, it appeared, been beat off Burbo, near the entrance of the harbour, dragged up the river, and, when it was attempted to bring her up by her anchors opposite to Bootle, the violence of the sea sunk her in deep water; and there she lay, with the upper part of her three masts standing above the surface. By this disaster, we are sorry to state, that the steward, a woman, and a boy, met a watery grave; but, with these exceptions, the crew and passengers happily escaped in safety. When the tide ebbed, the rigging of the lower part of the vessel and part of the hull became visible, and the torn foresail, which had been set, was seen flouting in the wind. Here large portions of the ribs, planks, yards, and masts of various sizes, snapped off like bulrushes, were strewn about; parts of the flooring and rigging, broken up and separated, were carried into the Sandhills; vegetables, casks, puncheons, crates, &c., had collected in other places; whilst distant groups of people might be seen eagerly and busily employed in breaking up the larger portions of wreck that had been cast up by the morning's tide, presenting a novel and picturesque contrast to the dotted appearance which the shore derived from the hundreds of single individuals who covered the beach for miles, in search of the trea-

sures which might, by chance, have been ejected from the mighty deep.

Immediately beyond the Rock Battery lay the Vigilant, for Havana, high and dry; further along the same shore, the Algonquin, Philadelphia packet-ship was to be seen showing her naked hull, with only the foremast standing. Further to the northward, beyond Crosby, the scenery, though less busy, was not devoid of melancholy interest. Various tokens of devastation covered the beach, and amongst scattered fragments of wreck, and many articles with which the ill-fated vessels had been freighted, there was a crate of earthenware; it was found upon the shore, and, in all probability, had been rolled over miles of sand-banks,—a proof of the terrific strength of winds and waves, which had impelled the ponderous load so far before them.

The wild scenery which presents itself to the eye of the spectator, in sandhills and solitary land marks, still further along this coast, had received a temporary addition by the appearance of a large brig, coal-laden, which had been cast on the northern bank of the Alt, where it disembogues its waters in the sea. The vessel struck about eleven o'clock on Monday night: the crew took to their boat, and providentially succeeded in reaching land in safety, where, wet and weary, they found shelter under the lee of a sand-heap, and, kindling a fire, they bivouacked for the night.

We have not heard the particulars of the losses sustained by the owners of the vessels unfortunately caught in this heavy gale; but we regret to state, that a young gentleman of the name of Crook lost his life. He was drowned in returning from the Algonquin, to which vessel, previous to her intended voyage, he had been sent in a steamer with despatches from his employers. It is greatly to be feared that the William Neilson is lost, and all on board perished, as fragments of her cabin and other parts of the vessel have been washed up, and are said to have been identified. The passengers on board the William Neilson were Mr. Somerville and his two daughters. A remarkable instance of presence of mind in the captain of the vessel was exemplified, by the letter-bag having been filled up with chaff, supposed for

the purpose of making it buoyant. The bag was picked up yesterday morning, about half a mile from the mill on the North Shore.—*Liverpool Courier*, Oct. 10, 1832.

Liverpool, Tuesday Evening.—The fears expressed in the communication of last evening have been painfully realized to-day. The storm, the sudden coming on of which was mentioned yesterday, and which drove a number of vessels on shore, has unhappily destroyed much property and many valuable lives. Among the ships which put to sea yesterday, was the *William Neilson*, for New Orleans. Lying near the entrance to the harbour, she was, by the aid of a steam-boat, towed out to sea more than two hours before the time of high water. She had even got clear of the banks before the gale commenced, and it was hoped would have been able to keep out of danger. The gale increasing to a complete storm, however, it would seem that she was driven back by its violence. Unfortunately, late in the afternoon, she struck on the banks, and went to pieces. This morning her letter-bag, (which the unfortunate Capt. Platt had stuffed with chaff to render it buoyant, knowing its value to its owners,) and innumerable fragments of the wreck, were washed on shore in Bootle Bay, when the melancholy fate of the ship and her crew was ascertained. All hands perished. There were three passengers, Mr. Somerville, a theatrical gentleman, it is said, and his two daughters, all of whom shared the fate of the captain and his crew. The *Grecian*, for Boston, which was mentioned yesterday as being on Burbo Bank, was got off at night; but she sustained so much damage whilst on shore, that she filled with water ere she could be brought into a place of safety, and sunk in Bootle Bay. The steward and a woman and her child were unfortunately drowned, so sudden was the final catastrophe. The ship's masts are visible at high-water, and riggers are now employed in dismantling her rigging. The packet-ship *Algonquin* is on the strand near Mockbeggar; her masts are gone, and she will, it is feared, become a complete wreck. The *Vigilant*, for Havana,

remains on shore near the same place. It is doubtful whether she will be got off. The sloop, *Queen Adelaide*, of Cardigan, from Cardiff, is wrecked on Mockbeggar. On the Lancashire shore several vessels are also wrecked; one, a brig, is on shore on Formby wharf, and another several miles to the southward. To-morrow, it is feared, will bring accounts of more disasters.

The storm has caused considerable damage to the buildings in the town. Several new houses, at the outskirts, have been blown down.

Shipwreck and Loss of Life.—On Friday night we were visited with the most terrific gale, accompanied with much rain, that has been known on these coasts since the great storm of November, 1824. The hurricane continued with little abatement during the whole of the following day. About 10 o'clock a. m. on Friday, the brig *Hector*, of Scarborough, Peter Camish, master, and laden with 170 chaldrons of coal for Mr. I. Sharp, of this town, was described off Shoreham in great distress. The vessel, it appears, had been off and on waiting, in consequence of the neap tides until there should be a sufficient depth of water for her to enter the harbour. Having lost both her anchors, and her fore-topmast being carried away in a squall, she was unable to hoist sufficient sail to carry her out to sea, and therefore the master, in order to save the lives of his crew, ran her aground on the bar of the river. The crew immediately hoisted out a boat which was washed away: some persons on shore then offering a reward, a boat left the harbour, and assisted the shipwrecked mariners in getting out their other boat, in which they all safely reached the land. The same boat then went to the vessel several times after for the sailors' clothes, &c., when, after four of the men (there being five) had gained their own boat, the fifth, in attempting to leap from the *Hector* to his companions, was prevented by a heavy swell carrying her to a considerable distance, so that the unfortunate man (who belonged to a smack) leaped short of the boat, and was instantly swallowed up by the billows.—*Brighton Guardian*.

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DANGEROUS SHOAL IN THE MOZAMBIQUE CHANNEL.

WE have been favoured with the following account of a very dangerous shoal by Captain Horsburgh, the hydrographer to the Hon. East India Company; and the first part of our work having gone to press, we present it to our readers with the Index to the first volume. It lies in the northern entrance of the Mozambique Channel, about half-way between the Comoro Islands and the north end of Madagascar.

“Rover, 21st April, 1831.—At 1h. 30m. P.M. discovered a large and dangerous shoal in lat. $12^{\circ} 22' S.$, long. $46^{\circ} 19' 45'' E.$, extending about ten miles E. S.E. and W. N.W.; four or five miles of which dries at half ebb, and the other parts are covered with high breakers. When the middle part of the shoal bore N. by E. $\frac{1}{2}$ E. about five or six miles had soundings from 12 to 10, 9, and 8 fathoms sand and rocky ground. From hence we stood to the W. S.W. and made Mayotta, and found our observations correct by the mean of two lunar observations and chronometer.”

These islands are laid down in Captain Horsburgh's chart of the Mozambique Channel, constructed by Captain Heywood, and are said to have been seen by the Firebrass in 1682, and the Devonshire in 1766.

NEW ISLANDS IN THE PACIFIC.

MR. BENNET, the Secretary of Lloyd's, has also just forwarded us the following extract from an American paper:—

“COVELL GROUP.—Captain Hiram Covell, of the barque Alliance, of Newport, just returned from the Pacific Ocean, has requested us to state, that on the 7th of May, 1831, in lat. $4. 30. N.$ lon. $168. 40. E.$ he discovered a group of 14 islands, not laid down in any chart. They were well inhabited, and the natives talked Spanish. He called them the Covell Group.”—*New Bedford Gazette*.

We shall take a future opportunity of examining their situation.

APR 12 1928

